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BUMPER LIST OF ITEMS INCLUSION AND NON-INCLUSION

QUESTION NO.1 Will the following be a part of domestic factor income of India? Give reasons for your answer.(i) Old age pension given by the government.(ii) Factor income from abroad(iii) Salaries to Indian resident working in Russian Embassy in India.
Solution:(i) This is transfer given by the govt., so it will **not be included** in domestic factor income of India.**(ii)** As it is the factor income received from external sector, so it will **not be included** in domestic factor income of India.**(iii)** It will not be considered a part of domestic factor income of India as Russian embassy in India is **not a part** of domestic territory of India.

QUESTION NO.2 Will the following factor incomes be included in domestic factor income of India? Give reason for your answer.(i) COE(Certificate of Eligibility) to the resident of Japan working in Indian embassy in Japan.(ii) Profits earned by a branch of foreign bank in India.(iii) Rent received by an Indian resident from Russian Embassy in India.(iv) Profits earned by a branch of State Bank of India in England.
Solution:(i) This income **will be included** in the domestic factor income of India as Indian Embassy in Japan is a part of domestic territory of India.**(ii)** As the foreign bank is situated within the domestic territory of India so it **will be included** in the domestic factor income of India.**(iii)** This will **not be a part** of domestic factor income of India as Russian Embassy is not a part of domestic territory of India.**(iv)** This profits **will not be included** in the domestic factor income of India as SBI is situated outside the domestic territory of India.

QUESTION NO.3 Will the following be included in the national income of a country? Give reasons for your answers.(i) School fees paid by students.(ii) Purchase of new shares of a domestic firm.(iii) Gift received from abroad(iv) Furniture purchased by households.
Solution:(i) School fees are the payment given by the students for getting education i.e. service/consumption so it **will be included** in the national income.**(ii)** These are just change in ownership of paper claims, i.e. without production, so it will **not be included is national income.(iii)** As these are transfer payments i.e. unilateral in nature, so these will **not be included** in national income.**(iv)** As this is part of private final consumption expenditure, so it **will be included** in national income.

QUESTION NO.4 Explain how the following are treated while estimating national income.(i) Rent free house to an employee by an employer.(ii) Purchases by foreign tourists
Solution:(i) As it is a part of COE(Compensation of employees) so it **will be included** in national income.**(ii) Will be included** in national income.

QUESTION NO.5 How will you treat the following while estimating domestic factor income of India? Give reasons for your answer.(i) Remittances from non-resident Indians to their families in India.(ii) Rent paid by the embassy of Japan in India to a resident Indian.
Solution:(i) It will **not be included** in the domestic factor income of India as it is earned outside the domestic territory of India.**(ii)** It will **not be included** in the domestic factor income of India as it is the part of NFIA.

QUESTION NO.6 Giving reason explain how should the following be treated in estimating national income: (i) Expenditure on fertilizers by a farmer.(ii) Purchase of tractor by a farmer.
Solution:(i) It is intermediate cost for the farmer and deducted from value of output while arriving at national income. Therefore, **not included.(ii)** It is **included** because it is capital formation/investment by the farmer.

QUESTION NO.7 Explain how should the following be treated in estimating national income:(i) Payment of bonus by a firm

Solution:(i) Bonus **is included** because it is compensation of employees.

QUESTION NO.8 Explain how should the following be treated in estimating national income:(i) Interest paid by banks on deposits by individuals.(ii) National debt interest.
Solution:(i) It **is included** because it is a factor payment by a producer.**(ii)** It is **not included** .

QUESTION NO.9 Should the following be treated as final 'expenditure or intermediate expenditure? Give reasons for your answer.(i) Purchase of furniture by a firm.
Solution:(i) It is **final expenditure** because it is investment expenditure.

QUESTION NO.10 Explain how should the following be treated while estimating national income:(i) Expenditure on free services provided by government
Solution:(i) It **should be included** because it is private final consumption expenditure

QUESTION NO.11How should the following be treated while estimating National Income? Give reasons.(i) Expenditure on education of children by a family.
Solution:(i) It **should be included** because it is private final consumption expenditure.

QUESTION NO.12 Giving reasons classify the following into intermediate products and final products:(i) Furniture purchased by a school.
Solution:(i) It is a **final product** because it is purchased for investment.

QUESTION NO.13 Giving reasons classify the following into intermediate products and final products:
(i) Computers installed in an office.(ii) Mobile sets purchased by a mobile dealer.
Solution:(i) These are **final products** because these are purchased for investment.**(ii)** These are **intermediate products** because these are purchased for resale.

QUESTION NO.14 How will you treat the following while estimating national income of India? Give reasons for your answer.(i) Salaries paid to Russians working in Indian Embassy in Russia.(ii) Profits earned by an Indian company from its branch in Singapore.(iii) Capital gains to Indian residents from sale of shares of a foreign company.
Solution:(i) Not included because it is factor income paid to abroad.**(ii) Included** because it is factor income from abroad.**(iii) Not included** because it is a transfer income.

QUESTION NO.15 Giving reasons, explain the treatment assigned to the following while estimating national income:(i) Family members working free on the farm owned by the family.(ii) Payment of interest on borrowings by general government.
Solution:(i) Imputed salaries* of these members **will be included** in national income.**(ii)** It **will not be included** in national income because it is a non-factor payment as general government borrows only for consumption purpose.

QUESTION NO.16 Giving reasons, explain the treatment assigned to the following while estimating national income:(i) Social security contributions by employees,(ii) Pension paid after retirement
Solution:(i) Not included in national income because it is paid out of compensation of employees which is already included in national income.**(ii) Not included** in national income in the year of actual payment because it was already counted as pension during the period when the person was employed/ because it is a deferred payment.

QUESTION NO.17 Giving reasons, explain the treatment assigned to the following while estimating national

income:(i) Expenditure on adding a floor to the building.
Solution:(i) It is treated as fresh expenditure on investment capital formation and therefore **included** in the estimation of national income.

QUESTION NO.18 **Giving reasons, classify the following into intermediate and final goods:(i) Machines purchased by a dealer of machines.(ii) A car purchased by a household.**
Solution:(i) **Intermediate** as purchased for resale.**(ii)** **Final** as purchased for consumption.

QUESTION NO.19 **How will you treat the following while estimating national income of India? Give reasons for your answer.(i) Dividend received by a foreigner from investment in shares of an Indian company.(ii) Profits earned by a branch of an Indian bank in Canada.(iii) Scholarship given to Indian students studying in India by a foreign company.**
Solution:(i) It is factor income to abroad, so it will be **deducted** from NDP to get NNP.**(ii)** It is factor income from abroad, so it is **included** in NI.**(iii)** It is a transfer payment. So, it is **not included** in NI.

QUESTION NO.20 **How will you treat the following while estimating domestic factor income of India? give reasons for your answer.(i) Remittances from non-resident Indians to their families in India.(ii) Rent paid by the embassy of Japan in India to a resident Indian.(iii) Profits earned by branches of foreign bank in India.**
Solution: (i) **Not included** because it is a transfer payment.**(ii)** **Not included** because embassy of Japan is not a part of domestic territory of India.**(iii)** **Included** because the branch of the foreign bank is located within the domestic territory of India.

QUESTION NO.21 **How will you treat the following while estimating national income of India? Give reasons for your answer.(i) Salaries received by Indian residents working in Russian Embassy in India.(ii) Profits earned by an Indian bank from its branches abroad.(iii) Entertainment tax received by the government.**
Solution: (i) **Included** in national income because it is factor income from abroad.**(ii)** **Included** because it is factor income from abroad.**(iii)** **Not included** because it is indirect tax and it is not a factor cost.

ITEMS TO BE INCLUDED OR EXCLUDED IN NATIONAL INCOME WITH REASONS

1. Construction of a new house : Yes, it will be **included** in the national income as it is a part of capital formation and leads to production of goods and services in the economy.

2. Winning of a lottery prize : No, it will **not be included** in the national income as it does not add to the flow of goods and services in the economy.

3. Increase in the prices of stocks lying with a trader : No, it will **not be included** in the national income as it does not amount to any flow of goods.

4. National debt interest OR Interest on public debt : No, it is **not included** in the national income as it is the interest paid on loans taken by government to meet its consumption purposes.

5. Rent-free house given to an employee by an employer: Yes, it is **included** in the national income by Income Method since it is a part of 'wages in kind' paid to employees.
6. Profit earned by foreign banks in India: No, it is **not included** in the national income as it is a part of the factor income paid abroad. It is subtracted from domestic income to get national income.

7. Purchases by foreign tourists OR Food purchased by a foreign tourist at a hotel in New Delhi: Yes, purchases by foreign tourists are 'exports' and, therefore, they are

included in the national income through the Expenditure Method.

8. Rent received by Indian residents on their buildings rented out to foreigners in India: Yes, it will be **included** in the national income as it is a part of the factor income from abroad.

9. Payment of fees to a lawyer engaged by a firm: It is an intermediate expenditure for the firm because it involves purchase of services by one production unit (firm) from another production unit (lawyer). So, it is deducted from the value of output of the firm to arrive at the value added. So, it is **not included** in national income.

10. Free medical facilities by the employer OR Free boarding and lodging provided to a domestic servant: Yes It will be **included** in national income as these free services are part of compensation to employees.

11. Gifts received from abroad OR Gift received from employer: National income as gifts received are transfer incomes and hence **not included.**

12. Profits of Reliance Industries from its chemicals business in Australia: Yes, it will be **included** in the national income as it is a part of the factor income from abroad.

13. Salaries received by Indian residents working in Russian Embassy in India: Yes, it will be **included** in the national income as it is a pan of factor income from abroad.

14. Subsidized lunch served to workers in a factory OR Firm incurred expenditure on medical treatment of employee's family : Yes, it is a part of the compensation of employees and, therefore, it will be **included** in the national income.

15. Old age pension: No, it will **not be included** in the national income as it is a transfer payment made by the government and a transfer income for the receiver.

16. Durable goods purchased by a household: OR Purchase of car by a household :
Yes, it will be **included** in the national income as it is a part of the private final consumption expenditure.

17. Profits earned by an Indian bank from its branches abroad: Yes, they will be **included** in the national income as they are a part of the factor income from abroad.

18. Earnings of shareholders from the sale of shares: No, it will **not be included** in the national income as it is a financial claim & does not contribute to any productive activity.

19. Expenditure on advertisement by a firm OR Commodities used in scientific research: No, it will **not be included** in the national income as it is a part of intermediate consumption expenditure.

20. Petrol used in police vehicles: No, it will **not be included** in national income as petrol is an intermediate good in this case. It is used for the provision of the final product (maintenance of law and order by the police).

21. Financial help received by flood victims: No, it will **not be included** in the national income as it is a transfer income.

22. Purchase of a machine by a factory OR Purchase of a new taxi by a taxi-driver : Yes, it will be **included** in the national income as it is a part of the gross domestic capital formation.

23. Royalty: Yes, it will be **included** in the national income as royalty is a productive income.

24. Commission on sale of second-hand goods OR Brokerage payment on sale of shares: Yes, it **will be included** in the national income as it is the income of a middleman for his productive services to various parties.

25. Dividend received by an Indian from his investment in shares of a foreign company: Yes, it **will be included** in the national income as it is factor income from abroad.

26. Purchase of raw materials by a production unitOR Milk purchased by a Sweet shop to make milk-cake: No, it will **not be included** in the national income as it is a part of the intermediate consumption expenditure.

27. Earnings of a self-employed doctor having a clinic at his own residence: Yes, it **will be included** in the national income as it is a mixed income.

28. Money received from sale of second-hand goods OR Money received by government from sale of a public sector firm to a private owner: No, it will **not be included** in the national income because receipts from the sale of second-hand goods are by virtue of transfer of an already existing object.

29. Imputed rent of self occupied houses: Yes, it **will be included** in the national income as people living in such houses enjoy housing services similar to those in rented houses.

30. Contribution to provident fund by employer OR Value of interest foregone on loans provided by employer to employee: Yes, it **will be included** in the national income as it is a part of the compensation to employees.

31. Wheat grown by a farmer but used entirely for family's consumption: Yes, it is **included** in the national income because it adds to the current flow of goods and services. Therefore, its imputed value should be included.

32. Expenditure on the construction of a flyover by the government: Yes, it will be **included** in the national income as it is a part of gross domestic capital formation.

33. Commission received by a dealer from the buyer and seller of a house: Yes, it will be **included** in the national income as it is the income of the dealer for his productive services.

34. Growing vegetables in a kitchen garden of the house: No, it will **not be included** in the national income as it is difficult to estimate the value of production (It is a non-market transaction).

35. Services rendered by family members to each other: No, it will **not be included** in the national income as it is difficult to determine the value of services provided by family members to each other.

36. Expenditure by government in providing free education OR Expenditure on free services provided by government: Yes, it **will be included** in the national income as it is a part of the government final consumption expenditure.

37. Insurance premium paid by employees OR Fees received from student: Yes, it is **included** in the national income as it is a part of the private final consumption expenditure.

38. Mineral wealth of a nation: It is a part of National wealth and is **not included** in national income. However, that part of mineral wealth which has been extracted during the current year will be included in national income under the product method.

39. Value of wood purchased for manufacturing a table OR Expenditures on the purchase of cold drinks by a school canteen from the manufacturer OR Transport expenses by a firm: No, it will **not be included** in the national income as it is a part of intermediate consumption expenditure.

40. Purchase of equipment's for installation in a factory: Yes, it **will be included** in the national income as it is a part of capital formation.

41. Payment of wealth tax OR Payment of Death duty*: No, it will **not be included** in the national income as it is a compulsory transfer payment to the government.
***death duty** : (in the UK) a tax levied on property after the owner's death.

42. Entertainment tax received by the government: No, it **will not be included** in the national income as it is an indirect tax and a compulsory transfer payment received by the government.

43. Salaries paid to Russians working in Indian Embassy in Russia: No, it is **not included** in the national income as it is a part of the factor income paid abroad. It is subtracted from domestic income to get national income.

44. Capital gains to Indian residents from sale of shares of a foreign company: No, capital gains **will not be included** in the national income as they do not add to the current flow of goods and services in the economy.

45. Harish works in USA and sends money to his family in India: No, it will **not be included** in the national income as it is a transfer payment.

46. Destruction of building due to an earthquake: No, it will **not be included** in the national income as it will not affect national product directly.

47. HP uses its own new Laptops in its office for self-consumption: Yes, it is **included** in the national income as it adds to current flow of goods and services. Therefore, imputed value of laptops should be included.

48. Purchase of a truck to carry goods by a production unit: Yes, it will be **included** in the national income as it is a part of the gross domestic capital formation.

49. Direct purchase made abroad by government: Yes, it will be **included** in the national income as it is a part of the government final consumption expenditure.

50. Earning from a part time job in McDonalds by a student: Yes, it is **included** in the national income as it is an income received for productive services.

51. Receipt from sale of property, inherited from a relative: No, it will **not be included** in the national income as receipt from sale of such property is by virtue of transfer of an already existing object.

52. Entertainment allowance to an employee for entertaining business guests: No, it will **not be included** in the national income as it is intermediate consumption expenditure of the business.

53. Expenditure on the purchase of shares of a new company OR Sale of bonds by a company: No, it will **not be included** in the national income as it is a financial claim and does not contribute to any productive activity.

54. Goods lying within the production boundary: No, such goods will **not be included** in national income as goods lying within the production boundary are intermediate goods.

55. Money received by a family in India from relatives working abroad: No, it will **not be included** in the national income as it is a transfer receipt.

56. Dividend received by a foreigner from investment in shares of an Indian company: No, it is **not included** in the national income as it is a part of factor income paid abroad. It is subtracted from domestic income to get national income.

57. Expenditure by father on marriage of his daughter: No, it will **not be included** in the national income as it does not add to current flow of goods and services.

58. Expenditure on the purchase of an old house OR Purchase of house by the tenant OR Purchase of rented factory building by the factory owner: No, it will **not be included** in the national income because payment for purchase of second-hand goods is due to transfer of an already existing object.

59. Purchase of furniture by a firm: Yes, it will be **included** in the national income as it is a part of the capital formation or investment by the firm.

60. Expenditure on education of children by a family: Yes, it is **included** in the national income as it is a part of the private final consumption expenditure.

61. Payment of electricity bill by a school: No, it will **not be included** in the national income as it is intermediate cost for the school and deducted from value of output while arriving at national income.

62. Payment of excise duty by a firm: No, it will **not be included** in the national income as it is an indirect tax paid by the firm.

63. Festival gift from an employer: No, it will **not be included** in the national income as it is merely a transfer payment.

64. Expenditure on improvement of fixed capital asset OR Expenditure on construction of a house. OR Expenditures on adding a floor to the building: Yes, it **will be included** in the national income as it is a part of capital formation. It must be noted that any expenditure on repairs of fixed assets will not be included in national income.

65. Scholarship given to Indian students studying in India by a foreign company OR Expenditure by the Government on scholarships to students: No, it will **not be included** in the national income as it is a transfer payment.

66. Value of bonus shares received by shareholders of a company: No, it will **not be included** in the national income as such bonus shares are mere paper claims and do not contribute to the production of goods and services.

67. Expenditure on maintenance of building OR Expenditure on maintenance by a firm: No, it will **not be included** in the national income as it is a part of intermediate consumption expenditure.

68. Payment of interest on borrowings by general government: No, it will **not be included** in national income because it is a non-factor payment as general government borrows only for consumption purpose.

69. Family members working free on farm owned by family: Yes, Imputed salaries of these members **will be included** in national income.

70. Payment of bonus by a firm: Yes, it **will be included** in the national income as it is a part of the compensation to employees.

71. Purchase of tractor by a farmer: Yes, it **will be included** in the national income as it is a part of the capital formation or investment by the farmer.

72. Expenditure on fertilizers by a farmer: No, it will **not be included** in the national income as it is intermediate cost for the farmer and deducted from value of output while arriving at national income.

73. Contribution to provident fund by employees: No, it is **not included** in the national income because such contribution is made by the employees from compensation of employees only. So, it is not separately included in the estimation of national income.

74. Interest received on loans given to a friend for purchasing a car OR Interest payment on loan taken by an individual to buy a motor cycle OR Payment of interest on a loan taken by an employee from the employer: No, it will **not be included** in the national income because it is a non-factor receipt as the loan is not used for production but for consumption.

75. Interest received on loan given to a foreign company in India: Yes, it **will be included** in national income as it is a part of factor income from abroad.

76. Interest received on debentures: Yes, it **will be included** in the national income as such interest received is a factor income because debenture is a sort of loan taken by a production unit.

77. Profits earned by a company in India which is owned by a non-resident – Yes it is domestic income as profit are earned within domestic territory.

78. Rent paid by the embassy of Japan in India to a resident Indian – No it is not included in the domestic income as Japanese embassy is not the part of domestic territory of India.

LIST OF ITEMS NOT INCLUDED IN THE NATIONAL INCOME :

Intermediate Consumption

1. Purchase of raw material by a firm Examples :

(a) Chalk , duster etc . purchased by a school **(b)** Leather purchased by a shoe manufacturing firm **(c)** Milk purchased by a dairy shop **(d)** Test tubes purchased by a pathological lab **(e)** Baker buys flour to bake a cake for her bakery **(f)** A professional basketball team buys a basketball for practice **(g)** Accountant purchases pencils to prepare taxes for clients

2. Items meant for resale in the same accounting year Examples :

(a) Purchase of car by a car dealer **(b)** Purchase of juices by school canteen **(c)** Purchase of furniture by a furniture showroom **(d)** Purchase of machinery by a machinery supplier **(e)** A jeweler buys a diamond for a ring he is designing for sale

3. Expenditure on repair and maintenance of fixed asset : Examples :

(a) Painting of office building **(b)** Repair of a machinery **(c)** Expenditure by a school on repair of a school bus **(d)** Spare part of a truck

4. Research and development expenditure : Examples:

(a) Expenditure on commodities consumed in research **(b)** Expenditure on commodities consumed in basic scientific research **(c)** Expenditure on advertisement , market research and public relations **(d)** Business expenses of employees on tour and entertainment

5. Goods and services supplied to employees : Examples :

(a) Clothing and footwear given to employees **(b)** Transportation and accommodation facilities while travelling for work

6. Intermediate consumption of General Government : Examples :

(a) Value of non-durable goods and services **(b)** Expenditure on military goods primarily for military purposes **(c)** Value of goods received in kind from foreign as gifts or transfers (excluding those meant for distribution among consumers after alterations) **(d)** Expenditure on maintenance of government buildings

*Examples of nondurable goods include fast-moving consumer goods such as cosmetics and cleaning products, food, condiments, fuel, beer, cigarettes and tobacco, medication, office supplies, packaging and containers, paper and paper products, personal products, rubber, plastics, textiles, clothing, and footwear.

7. Payment of water/electricity bill by a firm

8. Payment of fees to a lawyer engaged by a firm

Transfer payments

1. From Government to households : Examples :(a) Scholarship **(b)** Old age pension **(c)** Unemployment allowance **(d)** Financial help given to natural calamity victims, accident victims etc

2. From Government to enterprise : Examples :(a) Subsidies **(b)** Development grants **(c)** Investment grants

3. Enterprises to Government : Examples :(a) Direct and indirect taxes **(b)** Development cess for a particular area

4. Households to Government :(a) Compulsory payments such as direct and indirect taxes

5. One country to another : Examples :(a) Transfers received from abroad **(b)** Charity or grants **(c)** War damages **(d)** Gifts and donations **(e)** Economic assistance

6. Enterprise to households : Examples :(a) Gift received from employer **(b)** Prizes

7. Other examples :(a) Remittance from abroad **(b)** Free meals to beggars **(c)** Pocket money given to a child **(d)** Wedding and birthday gifts **(e)** Donations to NGOs

Compulsory transfer payments:

1. Direct taxes : Examples :(a) Wealth tax **(b)** Death duty **(c)** Capital gain tax **(d)** Gift tax **(e)** Income tax **(f)** Corporation tax **(g)** Property tax **(h)** Estate tax

2. Indirect taxes : Examples :(a) Excise duty **(b)** Sales tax **(c)** VAT **(d)** Octroi **(e)** Custom duties **(f)** Stamp duties **(g)** Service tax

Illegal income:

1. Income earned from illegal activities such as :(a) Smuggling **(b)** Gambling **(c)** Theft

2. Black money:

Sale and purchase of second hand goods:

1. Income earned from sale and purchase of second hand goods like old house , old vehicle old machinery, old jewellery etc.

Windfall gains:

1. Gains from winning lottery, horse race, lucky draw etc

Capital gains:

1. Profit due to increase in the price of :(a) Land **(b)** Building **(c)** Shares **(d)** Sale of second hand goods **(e)** Gold or other precious metal **(f)** Stock lying with a trader

Non market transactions:

1. Services of housewife such as cleaning of home, cooking food etc. **2.** Leisure time activities such as painting

, kitchen gardening , making craft items etc.**3.** Parents teaching their own child**4.** Self repair of breakage in the house**5.** Services rendered by family members to each other

Selected interest payments

1. National debt interest **2.** Interest payment on loan taken for consumption purpose **3.** Inter firm interest payment**4.** Payment of dividend from one firm to another

Income earned by non residents: Examples :

1. Salaries received by Russian / Chinese/Japanese etc. from Indian firms
2. Profits earned by a foreign bank/ company from its branches in India
3. Rent received by foreigners on buildings rented to Indian Embassy

Goods lying within the production boundary: Example :

1. Steel lying with a car manufacture

Few Important Points:

The values of the following items are also included:
(i) Own account production of fixed assets by government, enterprises and households.
(ii) Production for self- consumption.
(iii) Imputed rent* of owner occupied houses.
(iv)Intermediate goods are not to be included in national income : **Intermediate consumption** consists of the value of the goods and services consumed as inputs by a process of production.Intermediate goods used to produce other goods rather than being sold to final purchasers are not counted as it would involve double counting. The intermediate goods or services may be either transformed or used up by the production process. For example, the **value of flour used in making bread** would not be counted as it will be included while bread is counted.This is because flour is an intermediate good in bread making process. Similarly, if we include the value of an automobile in GDP, we should not be including the value of the tyres separately.
(v) It covers all production activities called the '**production boundary**'.Production of agriculture, forestry and fishing which are used for own consumption of producers is also included in the production boundary.
(vi) It includes only those goods and services that produced in the current period i.e. produced during the time interval under consideration.The value of market transactions such as exchange of goods which already exist or are previously produced, do not enter into the calculation of national income. Therefore, the value of assets such as **stocks and bonds** which are exchanged during the period are not included in national income as these do not directly involve current production of goods and services. However, the value of services that accompany the sale and purchase (e.g. **fees paid to real estate agents and lawyers**) represent current production and, therefore, is included in national income.
(vii) An important point to remember is that two types of goods used in the production process are counted in GDP namely, **capital goods** (business plant and equipment purchases) and **inventory investment-the net change** in inventories of final goods awaiting sale or of materials used in the production which may be positive or negative. Additions to inventory stocks of final goods and materials belong to GDP because they are currently produced output.
(viii)Sales of used(second hand goods) goods not included.
(ix)Production of Services for self-consumption is not included.

Few Important Points:

(i) Transfer incomes are excluded from national income. Thus, while wages of labourers will be included, pensions of retired workers will be excluded from national income.

(ii) **Labour income** includes, apart from wages and salaries, bonus, commission, employers' contribution to provident fund and compensations in kind.
(iii)Non-labour income includes dividends, undistributed profits of corporations before taxes, interest, rent, royalties and profits of unincorporated enterprises and of government enterprises.These items will be included.
(iv) In sectors such as agriculture, trade, transport etc. in underdeveloped countries (including India), it is difficult to differentiate between the labour element and the capital element of incomes of the people. In order to overcome this difficulty a new category of incomes, called '**mixed income**' is introduced which includes all those incomes which are difficult to separate.
(vi) Here NDPmp is not calculated as here direct income is taken which is exclusive of net indirect tax.
(vii) National Income **excludes financial transactions[like share or bond transactions are not counted] and non- reported output generated through illegal transactions such as narcotics and gambling** (these are also known as "bads" as opposed to "goods" which GDP accounts for).
(viii) **Non-economic activities** are not included for e.g. **hobbies, housekeeping and child services of home makers and services of family members** that are done out of love and affection.
(ix)In short : Income includes:(i) Wages and salaries,(ii) Rents, including imputed house rents,(iii) Interest,(iv) Dividends(v) Undistributed corporate profits, including surpluses of public undertakings,(vi)Mixed incomes consisting of profits of unincorporated firms, self-employed persons, partnerships, etc., and(vii) Direct taxes.
(x) Operating surplus is a component of GDP . And it can be calculated by doing sum of rent,royalty,interest, and profit.
(xi) Windfall gains not included.
(xii) Payments out of past savings and indirect tax not included.

Few Important Definition:

What is TRANSFER INCOME

➦In economics, a transfer payment is a redistribution of income and wealth made without goods or services being received in return.
➦There are incomes which are received without rendering any corresponding services in that period.These are in the form of Pensions,Unemployment benefits,scholarships etc.
➦**Conclusion**:Transfer Payments should not be included while computation of National Income.

FINAL GOODS AND INTERMEDIATE GOODS

Final Goods:

Final goods refer to those goods which are used either for consumption or for investment.
Final Goods include:
(i) Goods purchased by consumer households as they are meant for final consumption (like milk purchased by households).
(ii) Goods purchased by firms for capital formation or investment (like machinery purchased by a firm).
It must be noted that final goods are neither resold nor used for any further transformation in the process of production.

Intermediate Goods:

Intermediate goods refer to those goods which are used either for resale or for further production in the same year.
Intermediate Goods include:
(i) Goods purchased for resale (like milk purchased by a Dairy Shop).
(ii) Goods used for further production (like milk used for making sweets).
Conclusion:Intermediate goods are not to be included in the national income.

FACTOR INCOMES

➦Payment received in exchange for rendering productive service is factor income.

➦**Examples**: Rent is return on land, Wages on labor, Interest on capital, and Profit on entrepreneurship.
➦**Conclusion**:National income includes factor incomes.

DOMESTIC TERRITORY

(a) Ships and aircrafts owned and operated by normal residents between two or more countries.
(b) Fishing vessels, oil and natural gas rigs and floating platforms operated by the residents of a country in the international waters where they have exclusive rights of operation.
(c) Embassies, consulates and military establishments of a country located abroad.
(d) Political frontiers.
It does not include embassies, consulates and military establishments of a foreign country.International organisations like UNO, WHO etc. located within the geographical boundaries.

CONSUMER SURPLUS VS PRODUCER SURPLUS

➦This is the difference between **what the consumer pays** and **what he would have been willing to pay.**
➦**For example**: If you would be willing to pay £50 for a ticket to see the F. A. Cup final, but you can buy a ticket for £40. In this case, your consumer surplus is £10.
➦This is the difference between the **price a firm receives** and the **price it would be willing to sell it at**.
➦**For example**:If a firm received market price of £7 and firm is willing to sell a good at £4,then producer surplus is £3.

HOW TO CALCULATE REAL GDP USING THE GDP DEFLATOR :

➦The GDP deflator is an economic metric that converts output measured at current prices into constant.
➦**Example**:Real GDP is $17.096 trillion. The nominal GDP is $19.391 trillion. The deflator is 1.13421.
Hence Equation Becomes $17.096 trillion = $19.391 trillion / 1.13421.
➦Real GDP = Nominal GDP Divided By GDP deflator
➦ **How exam question will be framed from this topic:**Out of this three(Real GDP & Nominal GDP & GDP deflator) any one will be missing in exam question.
Disposable Income: The major portion of disposable income is spent on consumption goods and a part is saved. Therefore, Disposable Income = Consumption Expenditure (c) plus Saving (S)

HOW TO MEASURE DEPRECIATION?

As discussed in the 2nd Chapter, the concept of Depreciation is very important to differentiate between Gross value and the Net value. Rs.Gross' is inclusive of depreciation, whereas, Rs.net' excludes it. Gross Value = Net Value + Depreciation.
Students must be very careful while dealing with Depreciation. Let us now understand calculate Depreciation in the following cases:
Calculate Depreciation in the following cases:
Case 1: **(i) GDPFc = Rs. 5,000; (ii) NNPFc = Rs.4,700; (iii) Net Factor Income from Abroad = Rs.100.**
Solution: In the given case, we will first calculate GNPFc by adding Net Factor Income from Abroad in GDPFc and then we will subtract NNPFc from it to arrive at Depreciation. It means,
Step 1: GNPFc = GDPFc + Net factor Income from Abroad = Rs. 5,000 + Rs.100= Rs.5,100
Step 2. Depreciation = GNPFc- NNPFc = Rs.5,100 - Rs.4,700 =Rs.400.

Case 2: **(i) GDPMP = Rs.6,000; (ii) NNPFC = Rs.4,000; (iii) Net Factor Income from Abroad = Rs.200; (iv) Net Indirect Tax = Rs.300.**
Solution: In the given case, we will first calculate GNPFC by adding Net Factor Income from Abroad and Subtracting Net Indirect Tax in GDPMP and then we will subtract NNPFC from it to arrive at Depreciation. It means,
Step 1: GNPFC = GDPMP + Net Factor Income from Abroad – Net Indirect Tax = Rs.6,000 +Rs.200 -300 = Rs.5,900
Step 2: **Depreciation** = GNPFC – NNPFC = Rs.5,900 - Rs.4,000 = Rs.1,900.

Case 3: (i) Gross Fixed Capital Formation (GFCF) = Rs.3,700; (ii) Net Domestic Capital Formation (NDCF) =Rs.3,650; (iii) Change in Stock = Rs.300.

Solution: In the given case, we will first calculate Gross Domestic Capital Formation (GDCF) by adding change in Stock in GFCF and then we will subtract Net Domestic Capital Formation (NDCF) from it to arrive at Depreciation. It means,

Step 1: GDCF = GFCF + Change in Stock = Rs.3,700 + Rs.300 = Rs.4,000

Step 2: Depreciation = GDCF – NDCF = Rs.4,000 - Rs.3,650 = Rs. 350.

Case 4: (i) Value of Durable Use Producer Goods (or Fixed Assets) = Rs.5,000; (ii) Estimated Life Span of Durable Use Producer Goods or Fixed Assets = 10 Years.

Solution: In the given case, value of Durable Use Producer Goods (or Fixed Assets) is given along with their Estimated Life Span. Depreciation = Value of Durable Use Producer Goods / Estimated life span = Rs.5,000 /10 = Rs.500.

VARIOUS ITEMS NOT INCLUDED IN THE NATIONAL INCOME

No.	Items not Included in National Income	Reason
1.	Transfer Incomes and Payments like Scholarship, old age pension, Unemployment allowance, gifts, Expenditure on birthday/marriage, Pocket money, Remittances from Abroad, financial help to victims of Natural calamity, meals to beggars, Compensation given to accident Victims etc.	They are not connected with any productive activity and there is no value addition.
2.	Compulsory Transfer Payments like Interest tax, capital gains tax and Indirect taxes.	They are transfer payments and Government does not Make any promise of Providing services in Return.
3.	Sale and purchase of financial Assets like shares, bonds, Debentures etc.	such transactions do not contribute to current flow of goods and services. These financial assets are Mere paper claims and Involves a change of Title only.
4.	Windfall Gains like winning from Lottery, horse race, contests etc.	There is no productive activity involved with Windfall gains.
5.	Non-Market Transactions like Domestic services rendered by a Housewife, kitchen gardening, a Parent teaching his child or leisure Time activities like painting the House.	It is difficult to ascertain their market value and such services are not rendered for the purpose of earning income.
6.	Intermediate Consumption	Such expenditures are

	Expenditure like purchase of raw Materials by a firm, vegetables Purchased by a restaurant, milk Purchased by a dairy shop, electricity or advertisement expenses of a production unit, purchase of cold drinks by a school canteen, expenditure on the repair of assets etc.	already included in the final expenditure.
7.	Sale or Purchase of second hand goods Like sale/purchase of an old house, old Machinery, old car etc.	They have already been included in the year of their original sale or purchase.
8.	Capital Loss like destruction of building, Machinery etc. by earthquake	They do not affect the national product Directly.
9.	Capital Gains like profit due to increase In the price of land, building, shares or Income from the sale of second hand Goods and financial assets etc.	Interest paid on the loans taken for consumption purposes is not Included.

VARIOUS ITEMS INCLUDED' IN THE NATIONAL INCOME.

No.	Items included in National Income	Reason
1.	Brokers' Commission on the sale Purchase of second-hand goods or Financial assets	Services rendered by the brokers are productive.
2.	Services provided by the owners of Production units like imputed rent of Owner-occupied house, interest on Own capital, production for self Consumption etc.	They contribute to the current output of goods and services. Imputed values will be included in the national income as they are related to Productive activities.
3.	Capital Formation (Investment) like Purchase of machinery by a firm, Construction of a new house, water Pump purchased by a farmer, Construction of a new bridge, Expenditure on additional assets, Addition to stock, etc.	As they are a part of the gross domestic capital formation.
4.	Payment of bonus, contribution to Provident fund by employer, free Clothes given to workers, subsidize Lunch served to workers, free medical Facilities provided to employees, house Rent allowance, rent free home given By the employer.	These are a part of the compensation given to employees by the employers for their productive services.
5.	Payment of bus fare by households,	As they are a part of

	Examination fees paid by students, Insurance premium paid by employees, Durable goods (T.V., scooter) purchased By a household, payment of telephone Bill etc.	the private final consumption expenditure.
6.	Profit earned by an Indian company From its branches abroad, profits earned By a branch of an Indian bank in London, Wages received by Indian employees Working in foreign embassies, rent Received by Indian residents on their Buildings rented out to foreigners.	As they are a part of the factor income from abroad.
7.	Free services (dispensary, education) By government, government Expenditure on street lighting	They are a part of the Government final consumption Expenditure,
8.	Expenditure incurred by a foreign Tourist in the country	As the exported good are produced within The country's Domestic territory, They are included For determining the Output of the Economy.
9.	Interest on loans paid by Commercial Banks.	Interest is paid on Loans taken by Commercial banks For productive Purposes.

ITEMS INCLUDED / EXCLUDED IN NATIONAL INCOME

1. Construction of a new house.Yes, it will be included in the national income as it is a part of capital formation and leads to production of goods and services in the economy .

2. Winning of a lottery prize.
No, it will not be included in the national income as it does not add to the flow of goods and services in the economy.

3. Increase in the prices of stocks lying with a trader. No, it will not be included in the national income as it does not amount to any flow of goods.

4. National debt interest. Or Interest on public debt.No, it is not included in the national income as it is the interest paid on loans taken by government to meet its consumption pruposes.

5. Rent-free house given to an employee by an employer. Yes, it is included in the national income by Income Method since it is a part of Rs.wages in kind' paid to employees.

6. Profits earned by the branches of a foreign bank in India.No, it is not included in the national income as it is a part of the factor income paid abroad. It is subtracted from domestic incime to get national income.

7. Purchases by foreign tourists. Or Food purchased by a foreign tourist at a hotel in New Delhi.
Yes, purchases by foreign tourists are Rs.exports' and, therefore, they are included in the national income through the Expenditure Method.

8. Rent received by Indian residents on their buildings rented out to foreigners in India. Yes, it will be included in the national income as it is part of the factor income from abroad.

9. Payment of fees to a lawyer engaged by a firm.Or Expenditure by a firm on payment of fees to a chartered

Accountant.It is an intermediate expenditure for the firm because it involves of services by one production unit (firm) from another production unit (lawyer). So, it is deducted from the value of output of the firm to arrive at the value added. So, it is not included in national income.

10. Free medical facilities by the employer. Or Free boarding and lodging provided to a domestic servant. Yes, it will be included in national income as these free services are Part of compensation to employees.

11. Gifts received from abroad Or Gift received from employer. No, it will not be included in national income as gifts received are transfer incomes.

12. Profits of Reliance Industries from its chemicals business in Australia.Yes, it will be included in the national income as it is a part of the factor income from abroad.

13. Salaries received by Indian residents working in Russian Embassy in India. Yes, it will be included in the national income as it is a part of factor income from abroad.

14. Subsidized lunch served to workers in factory Or Firm incurred expenditure on medical treatment of Employee's family.Yes, it is a part of the compensation of employees and, therefore, it will be included in the national income.

15. Old age pension.No, it will not be included in the national income as it is a transfer payment made by the government and a transfer income for the receiver.

16. Durable goods purchased by a household Or Purchase of car by a household. Yes, it will be included in the national income as it is a part of the private final consumption expenditure.

17. Profits earned by an Indian bank from its branches abroad. Yes, they will be included in the national income as they are a part of the factor income from abroad.

18. Earnings of shareholders from the sale of shares.No, it will not be included in the national income as it is a financial claim and does not contribute to any productive activity.

19. Expenditure on advertisement by a firm Or Commodities used in scientific research. No, it will not be included in the national income as it is a part of intermediate consumption expenditure.

20. Receipts from sale of land. No, it will not be included as land is a free gift of nature and cannot be produced.

21. Financial help received by flood victims. No, it will not be included in the national income as it is a transfer income.

22. Purchase of a machine by a factory Or Purchase of taxi by a taxi-driver. Yes, it will be included in the national income as it is a part of the gross domestic capital formation.

23. RoyaltyYes, it will be included in the national in income as royalty is a productive income.

24. Commission on sale of second-hand goods Or Brokerage payment on sale of shares. Yes, it will be included in the national income as it is the income of a middleman for his productive services to various parties.

25. Dividend received by an Indian from his investment in shares of a foreign company. Yes, it will be included in the national income as it is factor income from abroad.

26. Purchase of raw materials by a production unit Or Milk purchased by a Sweet shop to make milk-cake.No, it will not be included in the national income as it is a part of the intermediate consumption expenditure.

27. Earnings of a self-employed doctor having a clinic at his own residence.Yes, it will be included in the national income as it is a mixed income.

28. Money received from sale of second-hand goods.No, it will be included in the national income because receipts from the sale of second-hand goods are by virtue of transfer of an already existing object.

29. Imputed rent of self occupied houses. Yes, it will be included in the national income as people living in such houses enjoy housing services similar to those in rented houses.

30. Contribution to provident fund by employer Or Value of interest foregone on loans provided by employer to employee. Yes, it will be included in the national income as it is a part of compensation to employees.

31. Wheat grown by a farmer but used entirely for family's consumption. Yes, it is included in the national income because it adds to the current flow of goods and services. Therefore, its imputed value should be included.

32. Expenditure on the construction of a flyover by the government. Yes, it will be included in the national income as it is a part of gross domestic capital formation.

33. Commission received by a dealer from the buyer and seller of a house. Yes, it will be included in the national income of the dealer for his productive services.

34. Growing vegetables in a kitchen garden of the house. No, it will not be included in the national income as it is difficult to estimate the value of production (It is a non-market transaction).

35. Services rendered by family members to each other. No, it will not be included in the national income as it is difficult to determine the value of services provided by family members to each other.

36. Expenditure by government in providing free education Or Expenditure on free services provided by government Or Expenditure by government on providing free educational Services Or Expenditure on providing police services by the government Or Government expenditure on street lighting.Yes, it will be included in the national income as it is a part of the government final consumption expenditure.

37. Insurance premium paid by an household Or Fees received from student. Yes, it is included in the national income as it is a part of the private final consumption expenditure.

38. Mineral wealth of a nation. It is a part of National wealth and is not included in national income. However, that part of mineral wealth which has been extracted during the current year will be included in national income under the product method.

39. Value of wood purchased for manufacturing a table Or Expenditures on the purchase of cold drinks by a school canteen from the manufacturer Or Transport expenses by a firm Or Expenditure on engine oil by car service station. No, it will not be included in the national income as it is a part of intermediate consumption expenditure.

40. Purchase of equipments for installation in a factory. Yes, it will be included in the national income as it is a part of capital formation.

41. Payment of interest tax Or Payment of Death duty.No, it will not be included in the national income as it a compulsory transfer payment to the government.

42. Goods and Services Tax received by the government. No, it will not be included in the national income as it is an indirect tax and a compulsory transfer payment received by the government.

43. Salaries paid to Russians working in Indian Embassy in Russia. No, it is not included in the national income as it is a part of the factor income paid abroad. It is subtracted from domestic income to get national income.

44. Capital gains to Indian residents from sale of shares of a foreign company.No, capital gains will not be included in the national income as they d not add to the current flow of goods and services in the economy.

45. Harish works in USA and sends money to his family in India. No, it will not be included in the national income as it is a transfer payment.

46. Destruction of building due to an earthquake. No, it will not be included in the national income as it will not affect national product directly.

47. HP uses its own new laptops in its office for self-consumption. Yes, it is included in the national income as it adds to current flow of goods and services. Therefore, imputed value of laptops should be included.

48. Purchase of a truck to carry goods by a production unit. Yes, it will be included in the national income as it is a part of the gross domestic capital formation.

49. Direct purchase made abroad by government. Yes, it will be included in the national income as it is a part of the government final consumption expenditure.

50. Earning from a part time job in McDonalds by a student.Yes, it will be included in the national income as it is a income received for productive services.

51. Receipt from sale of property, inherited from a relative. No, it will not be included in the national income as receipt from sale of such property is by virtue of transfer of an alreddy existing object.

52. Entertainment allowance to an employee for entertaining business guests. No, it will not be included in the national income as it is intermediate consumption expenditure of the business.

53. Expenditure on the purchase of shares of a new company Or Sale of bonds by a company Or Purchase of shares by a domestic firm. No, it will not be included in the national income as it is a financial claim and does not contribute to any productive activity.
54. Goods lying within the production boundary, No, such goods will not be included in national income as goods lying within the production boundary are intermediate goods.
55. Money received by a family in India from relatives working abroad.
No, it will not be included in the national income as it is a transfer receipt.
56. Dividend received by a foreigner from investment is shares of an Indian company. No, it is not included in the national income as it a part of factor income paid abroad. It is subtracted from domestic income to get national income.
57. Sale of an old house.No, it will not be included as it does not result in any production. Its value already included when it was newly constructed.
58. Expenditure on the purchase of an old house Or Purchase of house by the tenant Or Purchase of rented factory building by the factory owner.No, it will not be included in the national income because payment for purchase of second-hand goods is due to transfer of an already existing object.
59. Insurance money received from Oriental Insurance due to destruction of factory due to fire. No, it is not included in the national income because it is a transfer receipt.
60. Payment of interest by banks to its depositors Or Payment of interest by a government firm Or Payment of interest by a firm Or Payment of interest by a firm to a bank. Yes, it will be included in the national income as such interest is paid on taken for productive purpose. It is a factor payment by a producer.
61. Interest received on loans given to a friend for purchasi8ng a car Or Interest payment on loan taken by an individual to buy a motor cycle Or Payment of interest on a loan taken by an employee from the employer Or Payment of interest by an individual to a bank Or Payment of interest by an individual to a bank on a loan to buy a car.No, it will not be included in the national income because it is a non-factor receipt as the loan is not used for production but for consumption.
62. Interest received on loan given to a foreign company in India.Yes, it will be included in national income as it is a part of factor income from abroad.
63. Interest received on debentures. Yes, it will be included in the national income as such interest received is a factor income because debenture is a sort of loan taken by a production unit.
64. Expenditure on improvement of fixed capital asset Or Expenditure on construction of a house Or Expenditure on adding a floor to the building. Yes, it will be included in the national income as it is a part of capital formation.Note: It must be noted that any expenditure on repairs of fixed assets will not be included in national income.
65. Scholarship given to Indian students studying in India by a foreign company Or Financial assistance to flood victims.No, it will not be included in the national income as it is a transfer payment.
66. Value of bonus shares received by shareholders of a company. No, it will not be included in the national income as such bonus shares are mere paper claims and do not contribute to the production of goods and services.
67. Purchase of uniforms for nurses by a hospital. No, it will not be included in the national inco0me as it is an intermediate cost for the hospital.
68. Expenditure on maintenance of building Or Expenditure on maintenance by a firm. No, it will not be included in the national income as it is a part of intermediate consumption expenditure.
69. Payment of interest on borrowings by general government. No, it will not be included in national income because it is a non-factor payment as general government borrows only for consumption purpose.
70. Family members working free on farm owned by family. Yes, imputed salaries of these members will be included in national income.
71. Payment of bonus by a firm Or Bonus paid to employees. Yes, it will be included in the national income as it is a part of the compensation to employees.

72. Purchase of tractor by a farmer. Yes, it will be included in the national income as it is a part of the capital formation or investment by the farmer.

73. Expenditure on fertilizers by a farmer. No, it will not be included in the national income as it is intermediate cost for the farmer and deducted from value of output while arriving at national income.

74. Purchase of furniture by a firm Or Purchase of refrigerator by a firm for own use Or Expenditure on purchasing a machine installed in a production unit. Yes, it will be included in the national income as it is a part of the capital formation or investment by the firm.

75. Expenditure on education of children by a family. Yes, it is included in the national income as it is a part of the private final consumption expenditure.

76. Payment of electricity bill by a school Or Electricity consumed by a firm. No. it will not be included in the national income as it is an intermediate cost and will be deducted from the value of output while arriving at national income.

77. Dividend receive d by shareholders Yes, it will be included as it is a part of the profits of production units, which is distributed to the owners.

78. Festival gift from an employer. No, it will be included in the national income as it is merely a transfer payment.

79. Contribution to provident fund by employees. No, it is not included in the national income because such contribution is made by the employees from compensation of employees only. So, it is not separately included in the estimation of national income.

80. Addition to stocks during a year. Yes, it will be included in the national income as it is a part of the gross domestic capital formation.

81. Payment of corporate tax by a firm. No, it will not be included in the national income as it is a transfer payment to the government.

HOTS DIGHER ORDER THINKING SKILLS QUESTIONS

QUESTION NO.1. Mention the situations in which following equations will hold true:

(i) Value of Output is equal to Value Added.

(ii) National income t Current price = National income at constant price

(iii) Gross Domestic Capital formation = Gross domestic fixed capital formation

(iv) Operating Surplus = Rent + Royalty + Profit

Solution:(i) When intermediate consumption is zero.

(ii) When Price in the base year = Price in the current year.

(iii) When change in stock (or inventory investment) is zero.

(iv) When there is not income in the form of interest.

QUESTION NO.2. Whether the following items will be included in National Income? Give reasons for your answer.

(i)Payment of electricity bill by a factory.

(ii)Dividend on shares.

(iii)Increase in stock of consumer goods with households.

(iv)Bus fare paid by a passenger.

(v)Gains from sale of shares.

(vi)Rent earned by Reliance from its building in USA.

(vii)Gifts from Abroad.

(viii)Retained earnings of resident companies from abroad.

(ix)Expenses of foreign visitors in India.

(x)Gifts to a trust from Japan.

(xi)Purchase of books by a student.

(xii)Bonus to employees.
(xiii)Interest paid by and individual on loan taken.
(xiv)Expenditure on repair of fixed capita asset.
(xv)Free medical facilities by the employer.
(xvi)Financial help to flood victims.
(xvii)Payment f telephone bill.
(xviii)Employers' contribution to Provident Fund.
(xix)Rent received by and Indian from Building rented to Chinese Embassy.
(xx)Free meals to employees.
(xxi)Free meals to beggars.
(xxii)Wages received by and Indian from Building rented to Chinese Embassy.
(xxiii)Medical facilities to government employees.
(xxiv)Purchase of vegetables by a restaurant.
(xxv)Government Expenditure on street light.
(xxvi)Purchase of a second hand machine from a domestic firm.
(xxvii)Interest received on loans taken by government.
(xxviii)Leave travel allowance paid to employees by a company.
(xxix)Direct purchases made by resident households.
(xxx)Interest received on debentures by debenture-holders.
(xxxi)Monthly allowance received by a college student from home.
(xxxii)Expenditure incurred by a firm on sponsoring a Reality show.
(xxxiii)Expenditure incurred by normal residents on foreign travel.
(xxxiv)Prize won in a lottery.
(xxxv)Expenditure by government in providing free education.
(xxxvi)Money received by people from their family members who are permanently settled abroad.

Solution:(i) No, it is a part of intermediate consumption expenditure.
(ii) Yes, it is a part of profits.
(iii) No, as it is assumed that such goods are consumed, the Moment they are purchased.
(iv) Yes, it is a part of private final consumption expenditure.]
(v) No, as it is a capital gain.
(vi) Yes, it is a factor income from abroad.
(vii) No, it is a transfer income.
(viii) Yes, it is a factor income from abroad.
(ix) Yes, it is a part of Net Exports.
(x) No, it is a current transfer from rest of the world.
(xi) Yes, it is a part of private final consumption expenditure.
(xii) Yes, it is a part of COE.
(xiii) No, as it is a non-factor payment since the loan is not used
For production but for consumption.
(xiv) No, it is a part of intermediate consumption expenditure.
(xv) Yes, it is a part of COE.
(xvi) No, it is a transfer payment.
(xvii) Yes, it is a part of private final consumption expenditure.
(xviii) Yes, it is a part of COE.
(xix) Yes, it is a factor income from abroad.
(xx) Yes, it is a part of COE.
(xxi) No, it is a transfer payment.
(xxii) Yes, it is factor income from abroad.
(xxiii) Yes, it is a part of Government final consumption Expenditure.

(xxiv) No, it is a part of intermediate consumption expenditure.
(xxv) Yes, it is a part of Government final consumption Expenditure.
(xxvi) No, as it has already been included in the year of its Original purchase.
(xxvii) No, as such interest is treated as a transfer income because government generally borrows money to meet its consumption expenditure and no productive activity is linked with such loan.
(xxviii) Yes, as it is a part of COE.
(xxix) Yes, it is a part of private final consumption expenditure.
(xxx) Yes. Interest received is a factor income because debenture is a sort of loan taken by a production unit.
(xxxi) No, it is a transfer income.
(xxxii) No, it is a part of intermediate consumption expenditure.
(xxxiii) Yes, it is a part of private final consumption expenditure.
(xxxiv) No, as it is a windfall gain and there is no productive activity involved in it.
(xxxv) Yes, it is a part of Government final consumption expenditure.
(xxxvi) No, it is a transfer income.

QUESTION NO.3. Mention any three items that are excluded from GNP?
Solution: Three items excluded from GNP are: **(i)** Purely financial transactions, like sale and purchase of securities, bonds or transfer payments. **(ii)** Transfer of second-hand goods. **(iii)** Non-market transactions, like services of housewife, kitchen gardening, leisure time activities.

QUESTION NO.4. Are the following a part of a country's net domestic product at market price'? Explain. (i) Net indirect taxes (ii) Net exports (iii) Net factor income from abroad (iv) Consumption of fixed capital.
Solution:(i) Yes, net indirect taxes will be included because market price = Factor cost + Net indirect taxes
(ii) Yes, net exports (a component of expenditure method) will be included as it includes goods and services produced within the domestic territory of a country.
(iii) No, it will not be included as NDPMP is confined to domestic product only.
(iv) No, it will not be included because Net product = Gross Product – Consumption of fixed Capital.

QUESTION NO.5. Which of the following items is part of compensation of employees? Give reasons for your answer.
(i)Entertainment allowance to an employee to entertain business guests.
(ii)Employers' contribution to gratuity fund of the employees.
(iii)Employee's contribution to provident fund.
(iv)Payment of claim of insurance claim by LIC to the injured worker.
(v)Old age pension.
(vi)Medical expenses of a firm on treatment of employee's family.
Solution(i) it is not part of compensation of employees (COE) as it is paid for the benefit of business and not for the employee. In fact, it is intermediate consumption expenditure.
(ii) It is a part of compensation of employees as such contribution is for the benefit of employee and is paid for his productive services.
(iii) It is not a part of compensation of employees as such contribution is made by the employees from COE only.
(iv) It is not a part of compensation of employees as LIC is not the employer of injured worker.
(v) It is not a part of compensation of employees as it is paid to old people due to their old age and not because of any productive contribution. Moreover, it is paid by agency other than employer. In fact, it is a transfer payment.
(vi) It is a part of compensation of employees as such expenditure is incurred by the firm in return of productive services of employee.

QUESTION NO.6. How are the following treated while estimating private final consumption expenditure? Give reasons for your answer.

(i)Exports.
(ii)Direct purchases made abroad by resident households.
(iii)Final consumption expenditure of non-profit institutions serving households.
(iv)Change in stocks.

Solution(i) Exports will not be included in private final consumption expenditure as exports do not reflect consumption expenditure by residents.
(ii) It will be included in private final consumption expenditure as such purchases are meant for consumption.
(iii) It will be included in private final consumption expenditure as non-profit institutions serving households are a component of household sector.
(iv) It will not be included in private final consumption expenditure as it is a component of capital formation.

QUESTION NO.7. Ananya makes the following transactions. Discuss the imp[act of each transaction on the National Income of the country.
(i) She sells her car for Rs. 80,000.
(ii) She pays Rs. 5,000 as commission to the broker on sale of car.
(iii) She imports an Apple i-pod for Rs. 7,000.
(iv) She buys a new car for Rs. 9,00,000.
(v) She purchases an antique painting for Rs. 4,500.
(vi) She purchased shares of Reliance Industries for Rs. 12,000.
(vii) She pays interest of Rs. 2,000 on loan taken from ICICI to by the new car.

Solution(i) No impact as transactions of second hand goods are not part of National Income.
(ii) yes, this amount will be included in National as it is the income of broker for his productive services.
(iii) National Income will be less by this amount of import.
(iv) yes, it will be included as it is a part of private final consumption expenditure.
(v) No impact as it is not a transaction involving goods produced in the current year.
(vi) No impact as it involves a change of title only and does not contribute to any productive activity.
(vii) No impact s it is a non-factor payment because the loan is not used for production but for consumption.

QUESTION NO 8. Manish buys a second hand car from a car broker for Rs. 3,25,000. The broker receives Rs. 16,500 as commission for his services from Manish. How will this transaction affect the national income of the country? Give reason for your answer.

Solution: The commission of Rs. 16,500 received by broker will be added in the national income of the country as it is the income of broker for his productive services to Manish. The amount paid for purchase of car will not be included as it is the payment for purchase of an already existing object and there is no addition to current flow of goods and services

QUESTION NO.9. Classify the following into gross fixed capital formation and change in stocks.
(i) Expenditure on construction of Metro by DMRC.
(ii) Rise in number of cattles in a poultry farm.
(iii) New machines purchased by a sugar manufacturing company.
(iv) Constructions of a new house by a consumer.
(v) Decrease in the level of stock of wheat in a year.

Solution Items (i), (iii) and (iv) are part of gross fixed capital formation as they add to the capital stock of the economy. Items (ii) and (v) are part of change in stock.

QUESTION NO.10 The vegetables grown in kitchen gardening are final goods, yet there is not considered in estimating national income. Why?

Solution: Such transactions (termed as Non-Market Transactions) are not considered in estimating national income because it is difficult to ascertain their market value. Moreover, such transactions are not done for the purpose of earning income.

QUESTION NO.11 **How would the following transactions affect the national income?**

	Particulars	Rs. in crores
(i)	**Sale of an old house**	**10,00,000**
(ii)	**Commission o broker on sale of old house**	**20,000**
(iii)	**Purchase of Shares**	**2,000**
(iv)	**Interest on national debt**	**2,000**
(v)	**Salary to doctor of private hospital**	**25,000**
(vi)	**Purchase of a new car by a firm**	**3,25,000**
(vii)	**Payment of bonus to employees**	**5,000**
(viii)	**Payment of old age pension**	**7,000**

Ans:	Particulars	Rs. in crores
(i)	Rs.Sale of old house' will not be included as it Has already been included in the year of Of its original sale.	-
(ii)	Rs.Commission to broker' will be included as it is The income for his productive Services.	20,000
(iii)	Rs.purchase of Shares' will not be included as it Is a financial claim and does not contribute to Any productive activity.	_
(iv)	Rs.Interest on national debt' will not be included As the interest is paid on loans taken for Consumption Purposes.	_
(v)	Rs.Salary to Doctor of private hospital' will be Included as it is a part of compensation to Employees.	25,000
(vi)	Rs.Purchase of a new car' will be included as it Is a part of gross domestic capital formation.	3,25,000
(vii)	Rs.Payment of bonus to employees' will be Included as it is a part of compensation To employees.	5,000
(viii)	Rs.Payment of old age pension' will not be included As it is a part of transfer payment.	_
	National Income will increase by =	Rs. 3,75,000

QUESTION NO.12 **How will you treat the following in the calculation of Gross Domestic Product of India? Give reasons for your answer.**

(i) Profits earned by a branch of foreign bank in India.

(ii) Salaries of Indian employees working in embassy of Japan in India.

(iii) Salary of residents of Japan working in Indian embassy in Japan.

Solution(i) Yes it will be included in the Gross Domestic Product of India as profits are earned within the domestic territory of India.

(ii) No, it will not be included in the Gross Domestic product of India as the embassy of Japan it not a part of the domestic territory of India.

(iii) Yes, it will be included in the Gross Domestic Product of India as the Indian as the Indian Embassy is a part of the domestic territory of India.

QUESTION NO.13. **Classify the following expenditures as intermediate consumption expenditure and**

final consumption expenditure.

(i) Expenditure on research and development by Tata.

(ii) Insurance premium paid by a firm to an insurance company.

(iii) Insurance premium paid by households to and insurance company.

(iv) Expenditure on repairs and maintenance of plant and machinery.

(v) Expenditure incurred by a firm on purchase of equipments.

(vi) Advertising expenditure incurred by Airtel on promotion of its products.

(vii) Business expenses of the employees on tour and entertainment.

Solution: Intermediate Consumption Expenditure: (i), (ii), (iv), (vi), (vii); final Consumption Expenditure: (iii), (v).

QUESTION NO.14. Increase in per capita real income means increase in per capital availability of goods and services.

Does it necessarily mean rise in the welfare of the people of the country? Give any one argument in support of your answer and explain the same.

Solution Increase in per capital availability of goods and services does raise the standard of living and consequently welfare. But may not necessarily always be so. For example, manufacturing etc. does raise output but at the same time also leads to water and air pollution which reduces welfare of the people. Such a reduction in welfare may outweigh the increase in welfare and thus lead to overall reduction in welfare.

QUESTION NO.15 Giving reason explain how should the following be treated in estimating gross domestic product at market price?

(i) Fees to a mechanic paid by a firm.

(ii) Interest paid by an individual on a car loan taken from a bank.

(iii) Expenditure on purchasing a car for use by as firm.

Solution:(i) It is not included because it is an intermediate cost of the firm.

(ii) It is not included because the loan is taken to meet consumption expenditure and therefore interest paid on such a loan is not a factor payment.

(iii) It is included because it is an investment expenditure, a final expenditure.

QUESTION NO.16. What are non-monetary exchanges? Give an example. Explain their impact on use of gross domestic product as an index of welfare of people.

Solution Non-monetary exchanges refer to the goods and services produced but not exchanged through money, like the domestic services rendered by the members of a family to each other. The value of these services is many a times difficult to estimate and so it escapes national income estimation. These exchanges however have positive effect on the welfare of the people.

QUESTION NO.17 Define externalities. Give an example of negative externality. What is its impact on welfare?

Solution: Externalities refer to the benefits (or harms) a firm or an individual causes to another for which it is not paid (or penalised)

Example: Polluting river by an oil refinery.

Impact: Reduces welfare through negative effect on health.

QUESTION NO.18. Give an example of a positive externality and its impact on welfare of the people.

Solution: Use of public parks by the people for pleasure for which no payments are made by the public. It increases welfare through positive effect on health.

QUESTION NO.19. Government incurs expenditure to popularize yoga among the masses. Analyse its impact on gross domestic product and welfare of the people.

Solution: Government expenditure on popularizing yoga raises GDP because it is government's final consumption expenditure. It also raises welfare of the people because yogic exercises improve health and thus, raise efficiency of the people.

QUESTION NO.20. Sale of petrol and diesel cars is rising particularly in big cities. Analyse its impact on gross domestic product and welfare.

Solution: Sale of cars raises GDP, because sales are of final products. Cars provide convenience in transportation but at the same time, it causes traffic jams, air pollution and noise pollution, which reduces the welfare of the people. Pollution has bad effects on the health of the people.

PRACTICAL QUESTIONS ON GDP

QUESTION NO.1 Calculate NDP at Fc.

	Particulars	Rs. in crores
(i)	GNP at MP	8000
(ii)	Depreciation	600
(iii)	Net Factor income from Abroad	300
(iv)	Net Indirect taxes	700

Solution: NDPFc = GNPMp – Depreciation – NFIA – NIT= 8000 -600- 300 - 700 or NDPFc = Rs. 6,400 crores.

QUESTION NO.2 Calculate GDP at MP.

	Particulars	Rs. in crores
(i)	NNP at FC	2,000
(ii)	Depreciation	200
(iii)	Subsidies	70
(iv)	Factor Income from Abroad	110
(v)	Indirect Taxes	180
(vi)	Factor Income to Abroad	50

Solution: GDPMP = NNPFC + Depreciation - NIFA + NIT = 2,000+ 200 - (110-50) + (180-70) = 2,250 crores.

QUESTION NO.3 Calculate Domestic Income or NDP at FC.

	Particulars	Rs. in crores
(i)	GNP at MP	6,000
(ii)	Subsidies	200
(iii)	Depreciation	100
(iv)	Net Factor income from abroad	400
(v)	Indirect tax	300

Solution: NDP at FC =GNP at MP – Depreciation – Net Factor income from abroad – {Indirect tax – Subsidies} = 6,000 – 100 – 400 – {300 – 200} = 5,400 crores

QUESTION NO.4 Calculate National Income or NNP at FC.

	Particulars	Rs. in crores
(i)	GDP at MP	5,500
(ii)	Consumption of Fixed Capital(Depreciation)	300
(iii)	Goods and Services Tax (Indirect Tax)	120
(iv)	Factor income from abroad	150
(v)	Subsidies	70
(vi)	Factor income to abroad	250

Solution: National Income or NNP at FC= GDP at MP–Consumption of Fixed Capital + (Factor income from abroad

– Factor income to abroad) – (Goods and Services Tax – Subsidies)
= 5,500 – 300 + (150 – 250) – (120 -70) = 5,050 crores

QUESTION NO.5 **Calculate GNP at FC.**

	Particulars	Rs. in crores
(i)	NDP at MP	25,000
(ii)	Depreciation	5,000
(iii)	Subsidies	30
(iv)	Factor income from abroad	400
(v)	Factor income to the rest of the world	600

Solution: GNP at FC= NDP at MP + Depreciation + (Factor income from abroad – Factor income to the rest of the world) + Subsidies = 25,000 + 5,000 + (400 – 600) + 30 = 29,830 cr.

QUESTION NO.6 **Calculate GNP at MP.**

	Particulars	Rs. in crores
(i)	Domestic Income or NDP at FC	3,200
(ii)	Depreciation	400
(iii)	Indirect Taxes	70
(iv)	Net Factor income to abroad	50

Solution: GNP at MP = NDP at FC + Depreciation – Net Factor income to abroad + Indirect Taxes
= 3,200 + 400 – 50 + 70 = 3,620 crores

Note: Net factor income to abroad means that the paid amount is more than received amount.

QUESTION NO.7 **Calculate Consumption of Fixed Capital.**

	Particulars	Rs. in crores
(i)	National Income or NNP at FC	4,000
(ii)	GDP at MP	5,000
(iii)	Net Indirect Tax	300
(iv)	Net Factor income from abroad	200

Solution: GDP at MP =NNP at FC+Consumption of Fixed Capital–NetFactor income from abroad+Net Indirect Tax= GDP at MP – Net Indirect Tax + Net Factor income from abroad - NNP at FC= 5,000 – 300 + 200 – 4,000 = 900 cr

QUESTION NO.8 **Calculate Net Indirect Tax.**

	Particulars	Rs. in crores
(i)	GNP at MP	7,000
(ii)	Domestic Income or NDP at FC	6,200
(iii)	Depreciation	600
(iv)	Net Factor income from abroad	(-)400

Solution: GNP at MP = NDP at FC + Depreciation + Net Factor income from Abroad + Net Indirect Tax.It means: Net Indirect Tax = GNP at MP – Depreciation – Net Factor income from abroad – NDP at FC = 7,000 – 600 – (-) 400 – 6,200 = 600 crores

QUESTION NO.9 **Calculate Subsidies.**

	Particulars	Rs. in crores
(i)	GNP at FC	27,710
(ii)	Consum-ptio0n of Fixed Capital	4,000
(iii)	Indirect Taxes	120
(iv)	Factor income from abroad	400
(v)	NDP at MP	24,000

(vi)	Factor income to abroad	600

Solution: GNP at FC = NDP at MP + Consumption of Fixed Capital + (Factor Income from abroad – Factor income to abroad) – (Indirect Taxes – Subsidies)

It means: Subsidies = GNP at FC – Consumption of Fixed Capital – (Factor income from Abroad – Factor income to abroad) + Indirect Taxes – NDP at MP = 27,710 – 4,000 – (400 – 600) + 120 – 24,000 = 30 crores

QUESTION NO.10 Calculate Factor Income to abroad.

	Particulars	Rs. in crores
(i)	GNP at MP	4,500
(ii)	Replacement of Fixed Capital(Depreciation)	100
(iii)	Indirect Taxes	300
(iv)	Subsidies	200
(v)	Factor Income from abroad	700
(vi)	NDP at FC	3,900

Solution: GNP at MP = NDP at FC + Replacement of Fixed Capital + (Factor Income from abroad – Factor Income to abroad) + (Indirect Taxes – Subsidies)It means:Factor Income to abroad = NDP at FC + Replacement of Fixed Capital + Factor Income from Abroad + (Indirect Taxes – Subsidies) – GNP at MP= 3,900 + 100 + 700 + (300 – 200) – 4,500 = ` 300 crores

Note: Replacement of Fixed Capital is another name for Depreciation.

QUESTION NO.11 The net domestic product at market price of an economy is 4,500 crores. The capital stock is worth 4,000 crores and it depreciates at the rate of 10% per annum. Indirect taxes amount to 150 crores, subsidies amount to 20 crores, factor income from the rest of the world is 400 crores and to rest of the world is 600 crores. Find out the gross national product at factor cost.

Solution: Gross National Product at Factor Cost (GNPFC)= 4,500 + 10% of 4,000 – (150 – 20) + (400 – 600)= 4,500 + 400 – 130 – 200 = 4,570 crores

QUESTION NO.12 Calculate (a) Depreciation; (b) Subsidies; (c) NDP at FC.

	Particulars	Rs. in crores
(i)	GNP at FC	95,000
(ii)	Indirect Tax	14,000
(iii)	NDP at MP	1,00,422
(iv)	NNP at MP	1,00,000
(v)	GNP at MP	1,07,000

Solution: (a) Depreciation = GNP at MP – NNP at MP= 1,07,000 – 1,00,000 = 7,000 crores

(b) Subsidies= GNP at FC – GNP at MP + Indirect Tax= 95,00 – 1,07,000 + 14,000 = Rs. 2,000 crores

(c) NDP at FC= NDP at MP – (Indirect Tax – Subsidies)= 1,00,422 – (14,000 – 2,000) = Rs. 88,422 crores

QUESTION NO.13 Suppose the GDP at market price of a country in a particular year was Rs.1,100 crores. Net Factor Income from Abroad was Rs.100 crores. The value of (Indirect taxes – Subsidies) was Rs.150 crores and National Income was Rs. 850 crores. Calculate the aggregate value of depreciation.

Solution: GDP mp= NNP Fc + Depreciation – NFIA + NIT or 1,100 = 850 + Depreciation – 100 + 150 i.e Depreciation = Rs.200 crores.

QUESTION NO.14 In a single day, Raju, the barber, collects Rs.500 from haircuts; over this day, his equipment depreciates in value by Rs.50. Of the remaining Rs. 450, Raju pays indirect tax worth Rs. 30,takes home Rs.200 and retains Rs.220 for improvement and buying of new equipment. He further pays Rs.20 as income tax from his income. Based on this information, complete Raju's contribution to the following measures of income

(a) Gross Domestic Product (b) NNP at market price (c) NNP at factor cost.

Solution: In the given question, Depreciation = Rs.50; Indirect taxes = Rs.30; Retained earnings = Rs.220; Personal direct tax = Rs.20.

(a) Gross Domestic Product (GDP) = Rs. 500

(b) NNP mp = GDP – depreciation = 500 – 50 = Rs.450

(c) NNP Fc= NNP MP – Indirect Tax = 450 – 30 = Rs.420

QUESTION NO.15 From the following information, compute GNP mp. GDP Fc=Rs.3,000; Net factor income to abroad = Rs.200. Indirect Taxes = Rs.420, Subsidies = Rs.240.

(a)3380 **(b)**2980 **(c)**3020 **(d)**2620

Solution:(b)

QUESTION NO.16 If NDP Fc is Rs. 1,000 crores and NFIA is (-) Rs. 5 crores, how much will be the national income?

Solution: National Income = 1000 + (-5) = Rs. 995 crores

Practicals on Value Added Method

QUESTION NO.17. Calculate the value added by firm A and firm B.

	Particulars	Rs. in crores
(i)	Domestic Sales by firm A	4,000
(ii)	Exports by firm A	1,000
(iii)	Purchase by firm A	200
(iv)	Sales by firm B	2,940
(v)	Purchase by firm B	1,300

Solution: Value added by firm A = Domestic Sales by firm A + Exports by firm A – Purchase by firmA = 4,000 + 1,000 – 200 = Rs.4,800 crores

Note: Exports by firm A will be included as domestic sales are specifically mentioned.

Value added by firm B= Sales by firm B – Purchase by firm B = 2,940 – 1,300 = Rs. 1,640 crores

QUESTION NO.18 From the information given below, calculate: 1.Value added by firm A and firm B 2.Gross Domestic product at market price 3.Net value added at factor cost.

	Particulars	Rs. in crores
(i)	Sales by firm B to general government	100
(ii)	Sales by firm A	500
(iii)	Sales by firm B to households	350
(iv)	Change in stock of firm A	20
(v)	Closing stock of firm B	40
(vi)	Opening Stock of firm B	30
(vii)	Purchases by firm A	320
(viii)	Indirect Taxes paid by both the firms	75
(ix)	Consumption of fixed capital	120
(x)	Sales by firm A to B	200

Solution: Value added by firmA=Sales by firmA+Change in stock of firmA–Purchases by firmA=500 + 20–320 =Rs.200 crores

Note: Total sales of firm A are given. So, sales by firm A to firm B of Rs. 200 crores are not taken separately in value of output of firm A. However, it will be taken in Intermediate consumption of firm B.

Value added by firm B= Sales by firm B to general government + Sales by firm B to households + (Closing Stock of Firm B – Opening stock of firm B) – Purchases by firm B from firm A = 100 + 350 + (40-30) – 200= Rs.260 crores

Gross Domestic Product at market price= Value added by firm A+Value added by firm B= 200 + 260 = Rs.460

crores

Net value added at factor cost = Gross Domestic Product at market price – Consumption of fixed capital – Indirect taxes paid by both the firms= 460 – 120 – 75 = Rs.265 crores

QUESTION NO.19 From the following data about a firm Rs.X' for the year 2000-01, calculate the net value added at market price during that year:

	Particulars	Rs. in crores
(i)	Sales	90
(ii)	Closing stock	25
(iii)	Opening stock	15
(iv)	Indirect taxes	10
(v)	Depreciation	20
(vi)	Intermediate consumption	40
(vii)	Purchase of raw materials	15
(viii)	Rent	5

Solution: Net Value Added at Market Price = Sales + (Closing stock – Opening stock) – Intermediate consumption – Depreciation = 90 + (25 – 15) – 40 – 20 = Rs.40 crores

Note: Rs.Purchase of raw materials' is not included separately as it is already included in Intermediate Consumption.

QUESTION NO.20 From the following data about firm X calculate gross value added at factor cost by it:

	Particulars	Rs. in thousands
(i)	Sales	500
(ii)	Opening Stock	30
(iii)	Closing Stock	20
(iv)	Purchase of intermediate products	300
(v)	Purchase of machinery	150
(vi)	Subsidy	40

Solution: Gross Value Added at Factor Cost = Sales + (Closing Stock – Opening Stock) – Purchase of intermediate Products + Subsidy= 500 + (20-30) – 300 + 40= Rs. 230 thousands

Note: Purchase of machinery' is not considered as it is not a part of intermediate consumption.

QUESTION NO.21 From the following data, calculate "gross value added at factor cost".

	Particulars	Rs. in crores
(i)	Sales	180
(ii)	Rent	5
(iii)	Subsidies	10
(iv)	Change in Stock	15
(v)	Purchase of raw materials	100
(vi)	Profits	25

Solution: Gross Value Added at Factor Cost = Sales + Change in stock – Purchase of raw materials + Subsidies = 180 + 15 – 100 + 10 = Rs.105 crores

QUESTION NO.22 From the following data relating to a firm, calculate its net value added at factor cost:

	Particulars	Rs. in Lakhs
(i)	Subsidy	40
(ii)	Sales	800
(iii)	Depreciation	30
(iv)	Exports	100

(v)	**Closing Stock**	**20**
(vi)	**Opening Stock**	**50**
(vii)	**Intermediate Purchases**	**500**
(viii)	**Purchase of machinery for own use**	**200**
(ix)	**Import of raw material**	**60**

Solution: Net Value Added at Factor Cost = 800 + 20 – 50 – 30 + 40 - 500 = Rs.280 Lakhs

Note:. It is assumed that exports are already included in Sales.

Import of raw materials in not included separately as it is a part of Intermediate Purchases.

Subsidy is added as indirect taxes are not given.

QUESTION NO.23 **Calculate value of output from the following data:**

	Particulars	Rs. Lakhs
(i)	**Net value added at factor cost**	**100**
(ii)	**Intermediate consumption**	**75**
(iii)	**Goods and Services Tax (GST)***	**20**
(iv)	**Subsidy**	**5**
(v)	**Depreciation**	**10**

Solution: Value of Output = Net value added at factor cost + Intermediate consumption + Depreciation + (GST – Subsidy) = 100 + 75 + 10 + (20 – 5) = Rs. 200 lakhs

Note: Value of output' always means gross value of output at market price, unless stated otherwise.

QUESTION NO.24 **Calculate Rs.intermediate consumption' from the following data:**

	Particulars	Rs. Lakhs
(i)	**Value of output**	**200**
(ii)	**Net value added at factor cost**	**80**
(iii)	**Goods and Services Tax (GST)***	**15**
(iv)	**Subsidy**	**5**
(v)	**Depreciation**	**20**

Solution: Intermediate consumption = Value of Output – Net value added at factor cost – Depreciation – (GST – Subsidy)= 200 – 80 – 20 – (15 – 5) = Rs. 90 lakhs

QUESTION NO.25 **Find net value added at factor cost:**

	Particulars	Rs. lakhs
(i)	**Durable use producer goods with a life span of 10 years**	**10**
(ii)	**Single use producer goods**	**5**
(iii)	**Sales**	**20**
(iv)	**Unsold output produced during the year**	**2**
(v)	**Taxes on production**	**1**

Solution: Net Value Added at Factor Cost = Sales + Unsold Output – Single use producer goods – Depreciation – Taxes on production = 20 + 2 – 5 – 1- 1 = Rs.15 lakhs

QUESTION NO.26 **Calculate Gross Value Added at Factor Cost:**

	Particulars	Amount
(i)	**Units of Output sold (units)**	**1,000**
(ii)	**Price per unit of output (Rs.)**	**30**
(iii)	**Depreciation (Rs.)**	**1,000**
(iv)	**Intermediate cost (Rs.)**	**12,000**
(v)	**Closing stock (Rs.)**	**3,000**
(vi)	**Opening stock (Rs.)**	**2,000**

(vii)	**Goods and Services Tax or GST* (Rs.)**	**6,000**

Solution:

Gross Value Added at Factor Cost = (1,000 *30) + 3,000 – 2,000 – 12,000 – 6,000 = Rs. 13,000

QUESTION NO.27 From the following data, calculate Net value added at factor cost.

	Particulars	Rs. in Crores
(i)	Total Sales	1,000
(ii)	Decrease in Stock	70
(iii)	Production for Self Consumption	120
(iv)	Purchase of raw materials	300
(v)	Exports	150
(vi)	Electricity charges	50
(vii)	Income Tax	20
(viii)	Goods and Services Tax (GST)	70
(ix)	Subsidy	40

Solution: Net Value Added at Factor Cost = Total Sales + Production for Self Consumption– Decrease in Stock – Purchase or raw materials – Electricity Charges – (GST – Subsidy)= 1,000 + 120 – 70 – 300 -50 – (70 – 40) = Rs. 670 Crores

Note: . Exports will not be taken separately as it is a part of Total Sales.

l. Income Tax is not taken in calculations as it is a direct tax.

2.Production for self Consumption will be separately included in value of output as it also adds to current flow of goods and services and is not included in total sales.

3.Intermediate Consumption is calculated as sum of (iv) and (vi) item.

QUESTION NO.28 From the following data, calculate: (a) Value of output; (b) Intermediate Consumption; (c) Net value added at factor cost.

	Particulars	Rs. in Crores
(i)	Purchase of raw materials from domestic market	400
(ii)	Increase in the unsold stock	60
(iii)	Import of raw material	120
(iv)	Domestic Sales	1,200
(v)	Replacement of Fixed Capital	50
(vi)	Power Charges	20
(vii)	Exports	200
(viii)	Import of Machinery	40
(ix)	Goods and Services Tax (GST)	10
(x)	Subsidy	30
(xi)	Goods used for self Consumption	10

Solution:(a) Value of Output= Domestic Sales + Exports + Increase in the unsold stock + Goods used for self Consumption = 1,200 + 200 + 60 + 10 = Rs.1,470 Crores

Note: 1. Exports will be included as domestic sales are given.

2.Goods used for self Consumption will also be included as it adds to current flow of goods and services.

(b) Intermediate Consumption = Purchase of raw material from domestic market + Import of raw material + Power Charges = 400 + 120 + 20 = Rs. 540 Crores

(c) Net value added at factor cost = value of Output-Intermediate Consumption – (Goods and Services Tax – Subsidy) – Replacement of Fixed Capital = 1,470 – 540 - (10 – 30) – 50 = Rs.900 Crores

Note: Replacement of Fixed Capital is another name for depreciation.

Practicals on Income Method

QUESTION NO.29 Calculate NDP at FC.

	Particulars	Rs. in Crores
(i)	Rent	400
(ii)	Royalty	200
(iii)	Interest	500
(iv)	Compensation of Employees	1,000
(v)	Profit	500
(vi)	Mixed Income	1,000

Solution NDP at FC= Rent + Royalty + Interest + Compensation of Employees + Profit + Mixed income = 400 + 200 + 500 + 1,000 + 500 + 1,000 = Rs.3,600 crores

QUESTION NO.30 Calculate GNP at MP from the following data:

	Particulars	Rs. in Crores
(i)	Net indirect tax	900
(ii)	Depreciation	400
(iii)	Net Factor income from abroad	-20
(iv)	Rent	1,000
(v)	Dividend	500
(vi)	Mixed Income	200
(vii)	Saving of private corporate sector	400
(viii)	Interest	200
(ix)	Compensation of employees	100

Solution: GNP at MP = Rent + Dividend + Mixed income + Saving of private corporate sector + Interest + Compensation of employees + Net indirect tax + Depreciation + Net factor income from abroad=1,000+500+200+400+200 +100+900+400+(-)20= Rs.3,680cr

QUESTION NO.31 Calculate National Income.

	Particulars	Rs. in Crores
(i)	Compensation of employees	13,300
(ii)	Wages in kind	200
(iii)	Indirect taxes	3,800
(iv)	Gross domestic fixed capital formation	6,200
(v)	Operating surplus	5,000
(vi)	Mixed income of self employed	16,100
(vii)	Net factor income from abroad	300
(viii)	Net exports	(-) 100

Solution: National Income (NNPFC)= Compensation of employees + Operating surplus + Mixed income of self employed + Net factor income from abroad
= 13,300 + 5,000 + 16,100 + 300 = Rs.34,700 crores

Note: Wages in kind are not included separately as they are already included in compensation of employees.

1. Gross domestic fixed capital formation is given just to create confusion.

2. Operating surplus is the sum total of income from property (rent + royalty + interest) and income from entrepreneurship (profit).

QUESTION NO.32 From the following data, calculate National Income.

	Particulars	Rs. in Crores
(i)	Compensation of employees	800
(ii)	Rent	200

(iii)	Wages and salaries	750
(iv)	Net exports	(-)30
(v)	Net Factor income from abroad	(-)20
(vi)	Profit	300
(vii)	Interest	100
(viii)	Depreciation	50

Solution: National Income (NNPFC)= Compensation of Employees + Rent + Profit + Interest + Net factor Income from Abroad =800+200+300 +100+(-20)=1,400–20 = Rs. 1,380 crores

Practicals on Value Added and Income Method

QUESTION NO.33 From the following information, estimate: (i) Value of output; (ii) Net value added at factor cost; (iii) Prove that income generated is equal to net value added at factor cost.

	Particulars	Rs. in Crores
(i)	Increase in unsold stock	600
(ii)	Sales	10,625
(iii)	Purchase of raw materials	2,625
(iv)	Indirect Taxes	1,200
(v)	Subsidies	400
(vi)	Operating Surplus	3,740
(vii)	Mixed incomes	100
(viii)	Wages and Salaries	3,460
(ix)	Depreciation	500

Solution:(i) Value of output= Sales + Increase in unsold stock = 10,625 + 600 = Rs.11,225 Crores

(ii) Net Value Added at Factor Cost = Sales + Increase in unsold stock – Purchase of raw materials – Depreciation – (Indirect taxes – Subsidies) = 10,625 + 600 – 2,625 – 500 – (1,200 – 400) = Rs.7,300 Crores

Practicals on Operating Surplus

QUESTION NO.34 Calculate the Operating Surplus.

	Particulars	Rs. in Crores
(i)	Sales	4,000
(ii)	Compensation of employees	800
(iii)	Intermediate consumption	600
(iv)	Rent	400
(v)	Interest	300
(vi)	Net indirect taxes	500
(vii)	Consumption of fixed capital	200
(viii)	Mixed income	400

Solution: Operating Surplus= Sales – Intermediate consumption – Compensation of employees – Net indirect taxes – Consumption of fixed capital – Mixed income = 4,000 – 600 – 800 – 500 – 200 – 400 = Rs.1,500 crores

QUESTION NO.35 Calculate the Operating Surplus.

	Particulars	Rs. in Crores
(i)	Value of output	70,000
(ii)	Purchase of raw material	18,000
(iii)	Net indirect tax	3,000
(iv)	Wages and salaries	25,000

Solution: Operating Surplus= Value of output – Purchase of raw material – Net indirect tax – Wages and Salaries = 70,000 – 18,000 – 3,000 – 25,000 = Rs.24,000 crores

QUESTION NO.36 Calculate GDP at MP

	Particulars	Rs. in Crores
(i)	Private Final Consumption Expenditure	1,200
(ii)	Government Final Consumption Expenditure	200
(iii)	Gross Fixed Capital formation	300
(iv)	Change in Stock	400
(v)	Imports	500
(vi)	Exports	600

Solution: GDP at MP= Private final Consumption Expenditure + Government Final Consumption Expenditure + Gross Fixed Capital formation + Change in stock + (Exports – Imports)= 1,200 + 200 + 300 + 400 + (600 – 500) = Rs.2,200 crores

QUESTION NO.37 Calculate GNP at FC:

	Particulars	Rs. in Crores
(i)	Net domestic fixed capital formation	350
(ii)	Closing stock	100
(iii)	Government final consumption expenditure	200
(iv)	Net indirect taxes	40
(v)	Opening stock	60
(vi)	Consumption f fixed capital	50
(vii)	Net exports	(-)10
(viii)	Private final consumption expenditure	1,500
(ix)	Imports	20
(x)	Net factor income from abroad	(-) 30

Solution: GNP at FC= 350 + {100 – 60} + 200 + 1,500 +(-) 10 + 50 – 40 + (-) 30 = Rs. 2,060crores

QUESTION NO.38 Calculate Rs.Gross Domestic Product of Factor Cost' from the following data:

	Particulars	Rs. in Crores
(i)	Private final consumption expenditure	800
(ii)	Net domestic capital formation	150
(iii)	Change in stock	30
(iv)	Net factor income from abroad	(-)20
(v)	Net indirect tax	120
(vi)	Government final consumption expenditure	450
(vii)	Net Exports	(-)30
(viii)	Consumption of fixed capital	50

Solution: Gross Domestic Product at Factor Cost (GDPFC) = 800 + 450 + 150 + (-30) + 50 – 120 = Rs.1,300 crores

QUESTION NO.39 Calculate Gross Fixed Capital Formation from the following data:

	Particulars	Rs. in Crores
(i)	Private final consumption expenditure	1,000
(ii)	Government final consumption expenditure	500
(iii)	Net exports	(-) 50
(iv)	Net factor income from abroad	20
(v)	Gross domestic product at market price	2,500
(vi)	Opening stock	300
(vii)	Closing stock	200

Solution: Gross Fixed Capital Formation = 2,500 – 1,000 – 500 – (-) 50 – {200 – 300}= Rs. 1,150 crores

QUESTION NO.40 Calculate National Income by Income and Expenditure method.

	Particulars	Rs. in Crores
(i)	Final Consumption Expenditure	
-	Private Sector	350
-	Government Sector	100
(ii)	Mixed income of self employed	35
(iii)	Gross domestic fixed capital formation	70
(iv)	Opening Stock	15
(v)	Compensation of employees	250
(vi)	Closing Stock	25
(vii)	Imports	20
(viii)	Rent	75
(ix)	Consumption of fixed capital	10
(x)	Net indirect taxes	25
(xi)	Interest	25
(xii)	Net factor income from abroad	-5
(xiii)	Exports	10
(xiv)	Profit	100

Solution: National Income by Income method = Mixed income of self employed + Compensation of employees + Rent + Interest + Profit + Net factor income from abroad = 35 + 250 + 75 + 25 + 100 + (-5) = Rs. 480 crores

National Income by Expenditure method = Final consumption expenditure of Private Sector + Final consumption expenditure of Government sector + Gross domestic fixed capital formation + (Closing stock – Opening stock) + Net Exports – Consumption of fixed capital + Net factor Income from abroad – Net Indirect tax = 350 + 100 + 70 + (25 – 15) + (10 – 20) -10+ (-5) – 25 = Rs.480 crores

QUESTION NO.41 Calculate National Income by Income and Expenditure method.

	Particulars	Rs. in Crores
(i)	Compensation of employees	250
(ii)	Imports	20
(iii)	Mixed income of self employed	50
(iv)	Gross fixed capital formation	120
(v)	Private final consumption expenditure	550
(vi)	Consumption of fixed capital	10
(vii)	Net factor income from abroad	20
(viii)	Indirect taxes	100
(ix)	Change in Stock	20
(x)	Subsidies	20
(xi)	Rent	100
(xii)	Interest	200
(xiii)	Profit	50
(xiv)	Exports	10
(xv)	Government final consumption expenditure	60

Solution: National Income by Income method = Compensation of employees + Mixed income of self employed + Rent + Interest + Profit + Net factor income from abroad = 250 + 50 + 100 + 200 + 50 + 20 = Rs. 670 crores.

National Income by Expenditure method = Gross fixed capital formation + Change in stock + Private Final Consumption expenditure + (Exports – Imports) + Government final consumption expenditure – Consumption of fixed capital + Net factor income from abroad – (Indirect taxes – Subsidies)

= 120 + 20 + 550 + (10 – 20) + 60 -10 + 20 – (100 – 20) = Rs. 670 crores.

QUESTION NO.42 From the following data, calculate National Income by (a) Income method and (b) Expenditure method:

	Particulars	Rs. in Crores
(i)	Private final consumption expenditure	2,000
(ii)	Net capital formation	400
(iii)	Change in Stock	50
(iv)	Compensation of employees	1,900
(v)	Rent	200
(vi)	Interest	150
(vii)	Operating surplus	720
(viii)	Net indirect tax	400
(ix)	Employers' Contribution to social security schemes	100
(x)	Net exports	20
(xi)	Net factor income from abroad	(-)20
(xii)	Government final consumption expenditure	600
(xiii)	Consumption of fixed capital	100

Solution: National Income (NNPFC) by Income method = 1,900 + 720 + (-) 20 = Rs. 2,600 crores

QUESTION NO.43 From the following data, calculate National Income by Income and Expenditure methods:

	Particulars	Rs. in Crores
(i)	Government final consumption expenditure	100
(ii)	Subsidies	10
(iii)	Rent	200
(iv)	Wages and salaries	600
(v)	Indirect taxes	60
(vi)	Private final consumption expenditure	800
(vii)	Gross domestic capital formation	120
(viii)	Social security contribution by employer	55
(ix)	Royalty	25
(x)	Net factor income paid to abroad	30
(xi)	Interest	20
(xii)	Consumption of fixed capital	10
(xiii)	Profit	130
(xiv)	Net exports	70
(xv)	Change in Stock	50

Solution: National income by Income method =600+55+200+25+20+130–30=Rs.1,000 crores.
National Income by Expenditure method=800+100+120+70–{60–10}–10–30= Rs.1,000 cr.

QUESTION NO.44 Calculate national income by Income and Expenditure method from the following data:

	Particulars	Rs. in Crores
(i)	Salaries and wages in cash	1,997
(ii)	Transfer payments by government	25
(iii)	Rent	132
(iv)	Indirect taxes	200
(v)	Subsidies	89
(vi)	Compensation of workers in kind	95
(vii)	Depreciation	81
(viii)	Net increase in factor income from rest of the world	52
(ix)	Interest	92

(x)	Government expenditure on good and services	574
(xi)	Personal consumption expenditure on goods And services	1,805
(xii)	Corporate profit tax	10
(xiii)	Income of the self employed	264
(xiv)	Undistributed corporate profit	26
(xv)	Dividends	201
(xvi)	Export of goods and services	900
(xvii)	Addition to stock	7
(xviii)	Social security contributions by employer	54
(xix)	Import of goods and services	323
(xx)	Gross fixed investment	100

Solution: National Income(NNPFC) by Income method=1,997 +132 +95 +52 +92 + 10 + 264 + 26 + 201 + 54=Rs.2,923 crores

National Income(NNPFC) by Expenditure method=574+1,805+{100+7}+{900–323}-81-{200–89} + 52=Rs.2,923 crores

Note: Government expenditure on good and services is another name for Government final consumption expenditure.

Note: Personal consumption expenditure on goods and services is another name for private final consumption expenditure.

QUESTION NO.45 Calculate GNP at FC by Income and Expenditure method.

	Particulars	Rs. in Crores
(i)	Compensation of employees	1,000
(ii)	Operating surplus	500
(iii)	Employers' contribution to social security schemes	120
(iv)	Net exports	(-) 30
(v)	Net indirect taxes	40
(vi)	Mixed income of the self employed	600
(vii)	Net factor income to abroad	20
(viii)	Consumption of fixed capital	40
(ix)	Private final consumption expenditure	1,440
(x)	Govt. final consumption expenditure	490
(xi)	Gross fixed capital formation	250
(xii)	Change in stock	30
(xiii)	Interest on national debt	25

Solution: GNP at FC by Income method = 1,000 + 500 + 600 – 20 + 40 = Rs. 2,120

GNP at FC by Expenditure method=1,440+490+250+30+(-30)-40–20= Rs.2,120 crores

QUESTION NO.46 Calculate NDP at FC by expenditure method and GDP at MP by income method.

	Particulars	Rs. in Crores
(i)	Gross fixed capital formation	130
(ii)	Private final consumption expenditure	510
(iii)	Mixed income of the self employed	280
(iv)	Net factor income from ROW	(-) 5
(v)	Exports	50
(vi)	Imports	60
(vii)	Compensation of employees	240
(viii)	Government final consumption expenditure	70
(ix)	Consumption of fixed capital	40

(x)	Indirect tax	90
(xi)	Subsidies	10
(xii)	Rent, interest and profit	90
(xiii)	Change in stock	30
(xiv)	Interest on national debt	10

Solution:

NDP at FC by Expenditure method = 130 + 30 + 510 + {50 – 60} + 70 – 40 – {90 – 10}= Rs. 610 crores

GDP at MP by Income method = 280 + 240 + 90 + 40 + {90 – 10}= Rs.730 crores

QUESTION NO.47 **From the following data, calculate National Income:**

	Particulars	Rs. in Crores
(i)	Net exports	(-)70
(ii)	Compensation of employees	800
(iii)	Mixed income of self-employed	900
(iv)	Net factor income from ROW	(-)50
(v)	Net retained earnings of private enterprises	600
(vi)	Rent	350
(vii)	Profit	600
(viii)	Consumption of fixed capital	200
(ix)	Interest	450
(x)	Corporation tax	350
(xi)	Net indirect taxes	250

Solution:

National Income = 800 + 900 + 350 + 600 + 450 + (-) 50 = Rs.3,050 crores

QUESTION NO.48 **From the following data, calculate Gross National Product at market Prices by (a) Income method and (b) Expenditure method.**

	Particulars	Rs. in crores
(i)	Government final consumption expenditure	250
(ii)	Change in stock	65
(iii)	Net domestic capital formation	150
(iv)	Interest	90
(v)	Profits	210
(vi)	Corporation tax	50
(vii)	Rent	100
(viii)	Factor income from abroad	20
(ix)	Indirect taxes	55
(x)	Factor income to abroad	40
(xi)	Exports	60
(xii)	Subsidies	25
(xiii)	Imports	80
(xiv)	Consumption of fixed capital	20
(xv)	Private final consumption expenditure	500
(xvi)	Compensation of employees	450
(xvii)	Value of rent for free accommodation to Employees	40

Solution:GNP at Market price by Income method = 90 + 210 + 100 + 450 +{20 – 40} + 20 + {55 -25}= Rs. 880 crores

GNP at Market Price by Expenditure method = 250 + 150 + {60 – 80} + 500 + {20 – 40} + 20 = Rs. 880 crores

Note: Value of rent for free accommodation to employees' is not included separately as it is already included in compensation of employees.

QUESTION NO.49 **Calculate: (a) Domestic Income; (b) Compensation of employees.**

	Particulars	Rs. in crores
(i)	Net factor income from abroad	-20
(ii)	Net exports	10
(iii)	Net indirect taxes	50
(iv)	Rent and royalty	20
(v)	Consumption of fixed capital	10
(vi)	Private final consumption expenditure	400
(vii)	Corporate tax	10
(viii)	Interest	30
	Net domestic capital formation	50
(x)	Dividends	22
(xi)	Government final consumption expenditure	100
(xii)	Undistributed profits	5
(xiii)	Mixed Income	23

Solution:(a) Domestic Income= 10 + 400 + 50 + 100 – 50 = Rs.510 crores.

(b) Compensation of employees = NDPFC – Rent and royalty – Interest – Corporate tax – Dividends – Undistributed profits – Mixed Income = 510 – 20 – 30 – 10 – 22 – 5 – 23 = Rs. 400 crores

Note: We know: NDPFC (by Income method) = Rent and royalty + Interest + Corporate tax + Dividends + Undistributed profits + Compensation of employees + Mixed Income.

It means: Compensation of employees = NDPFC – Rent and royalty – Interest – Corporate tax – Dividends – Undistributed profits – Mixed Income.

QUESTION NO.50 **From the following data, calculate GNP at MP by Income and Expenditure method**

	Particulars	Rs. in crores
(i)	Mixed income of self-employed	400
(ii)	Compensation of employees	500
(iii)	Private final consumption expenditure	900
(iv)	Net factor income from abroad	(-)20
(v)	Net indirect taxes	100
	Consumption of fixed capita	120
(vii)	Net domestic capital formation	280
(viii)	Net exports	(-)30
(ix)	Profits	350
(x)	Rent	100
(xi)	Interest	150
(xii)	Government final consumption expenditure	450

Solution: GNP at MP by Income method=400+500+350+100+150+120+(-)20+100=Rs.1,700 crores

GNP at MP by Expenditure method = 900+280+(-)30+450+(-)20 +120 = Rs.1,700 crores

QUESTION NO.51 **Calculate “Gross National Product at Factor Cost” from the following data by (a) Income method, and (b) Expenditure method:**

	Particulars	Rs. in crores
(i)	Private final consumption expenditure	1,000
(ii)	Net domestic capital formation	200
(iii)	Profits	400
(iv)	Compensation of employees	800

(v)	Rent	250
(vi)	Government final consumption expenditure	500
(vii)	Consumption of fixed capital	60
(viii)	Interest	150
(ix)	Net current transfers from rest of the world	(-)80
(x)	Net factor income from abroad	(-)10
(xi)	Net exports	(-)20
(xii)	Net indirect taxes	80

Solution: GNP at Factor Cost by Income Method = 250 + 150 + 400 + 800 + 60 + (-10) = Rs.1,650 crores
GNP at Factor Cost by Expenditure Method = 1,000 + 500 + 200 + 60 + (-20) + (-10) – 80 = Rs.1,650 crores

QUESTION NO.52 Calculate: (a) GDPMP by Income method; and (b) Closing stock.

	Particulars	Rs. in crores
(i)	Private final consumption expenditure	450
(ii)	Rent	120
(iii)	Government final consumption expenditure	50
(iv)	Indirect taxes	60
(v)	Interest	150
(vi)	Mixed income of self employed	20
(vii)	Consumption of fixed capital	30
(viii)	Opening stock	10
(ix)	Gross fixed capital formation	300
(x)	Compensation of employees	200
(xi)	Net exports	(-)10
(xii)	Net factor income from abroad	(-)10
(xiii)	Subsidies	10
(xiv)	Profit	250

Solution: (a) GDPMP by Income method=120+150+250+20+200+30+{60 – 10} = Rs. 820 crores
(b) Closing Stock = GDPMP – Private final consumption expenditure – Government final consumption expenditure – Gross fixed capital formation + Opening stock – Net exports= 820 – 450 – 50 – 300 + 10 – (-) 10 = Rs. 40 crores

QUESTION NO.53 Calculate National Income by output method and Income method.

	Particulars	Rs. in crores
(i)	Value of output	800
(ii)	Value of intermediate consumption	400
(iii)	Subsidies	10
(iv)	Indirect taxes	60
(v)	Factor income received from abroad	10
(vi)	Factor income paid abroad	20
(vii)	Mixed income of self employed	120
(viii)	Rent and royalty	40
(ix)	Interest and profit	20
(x)	Wages and salaries	110
(xi)	Consumption of fixed capital	50
(xii)	Employers' contribution to social security schemes	10

Solution: National Income by Output Method=800–400–{60–10}+ {10 – 20} – 50 = Rs.290 crores
National Income by Income Method=40+20+110+10 + 120 + {10 – 20} = Rs.290 crores

QUESTION NO.54 Calculate National Income (NNPFC) by income and output method.

	Particulars	Rs. in crores
(i)	Value of output of primary sector	1,000
(ii)	Value of output of other sectors	400
(iii)	Raw material or primary sector	500
(iv)	Raw material of other sectors	300
(v)	Factor income received from the rest Of the world	10
(vi)	Factor income paid to the rest of the world	15
(vii)	Depreciation	55
(viii)	Indirect taxes	100
(ix)	Subsides	20
(x)	Mixed income of the self employed	200
(xi)	Compensation of employees	170
(xii)	Rent	40
(xiii)	Interest	30
(xiv)	Profit	25

Solution: National Income (NNPFC) by Income Method = 200 + 170 + 40 + 30 + 25 + {10 – 15}= Rs.460 crores
National Income (NNPFC) by Output Method ={1,000 –500} + {400 –300} + {10 –15} -55- {100 –20} = Rs.460 crores

QUESTION NO.55 **Calculate National Income by expenditure and output method.**

	Particulars	Rs. in crores
(i)	Gross domestic capital formation	250
(ii)	Net exports	-50
(iii)	Private final consumption expenditure	1,000
(iv)	Value of output of primary sector	900
(v)	Value of output of secondary sector	800
(vi)	Value of output of tertiary sector	400
(vii)	Intermediate consumption of primary sector	400
(viii)	Intermediate consumption of secondary sector	300
(ix)	Intermediate consumption of tertiary sector	100
(x)	Consumption of fixed capital	80
(xi)	Indirect taxes	100
(xii)	Government final consumption expenditure	100
(xiii)	Subsidies	10
(xiv)	Net factor income from abroad	-20

Solution: National Income by Output Method={900 – 400} + {800 –300} +{400–100} – 80 – {100-10} + (-20)= Rs.1,110 crores
National Income by Expenditure method = 250 + (-50) + 1,000 + 100 – 80 – (100 – 10) + (-20) = Rs.1,110 crores

QUESTION NO.56 **Calculate National Income from the following data:**

	Particulars	Rs. in crores
(i)	Current transfers by government	15
(ii)	Private final consumption expenditure	400
(iii)	Net indirect taxes	60
(iv)	Government final consumption expenditure	100
(v)	Net factor income from abroad	(-)10
(vi)	Net domestic capital formation	80
(vii)	Consumption of fixed capital	50
(viii)	Net exports	40

Solution: National Income = 400 + 100 + 80 + 40 – 60 + (-) 10 = Rs. 550 crores

QUESTION NO.57 Calculate National Income and Depreciation from the following data:

	Particulars	Rs. in crores
(i)	Net indirect tax	5
(ii)	Net domestic fixed capital formation	100
(iii)	Net imports	(-)20
(iv)	Government final consumption expenditure	200
(v)	Gross domestic fixed capital formation	125
(vi)	Private final consumption expenditure	600
(vii)	Change in stocks	10
(viii)	Net factor income from abroad	5

Solution: National Income = 600 + 200 + {100 + 10} – (-20) + 5 – 5 = Rs. 930 crores
Depreciation= Gross domestic fixed capital formation–Net domestic fixed capital formation=125–100=Rs.25 crores
Note: Rs.Net imports of (-) 20 crores' signifies that exports are more than imports.

QUESTION NO.58 Calculate Gross National Product at Market Price from the following data:

	Particulars	Rs. in crores
(i)	Net factor income from abroad	(-)25
(ii)	Profits	70
(iii)	Consumption of fixed capital	30
(iv)	Rent	40
(v)	Indirect tax	20
(vi)	Interest	100
(vii)	Royalty	10
(viii)	Compensation of employees	600
(ix)	Subsidy	5

Solution: Gross National Product at Market Price (GNPMP)= 70 + 40 + 100 + 10 + 600 + 30 + (-) 25 + {20 – 5} = Rs. 840 crores

QUESTION NO.59. Calculate National Income from the following data:

	Particulars	Rs. in crores
(i)	Subsidy	5
(ii)	Net exports	(-)20
(iii)	Private final consumption expenditure	400
(iv)	Net factor income to abroad	10
(v)	Government final consumption expenditure	100
(vi)	Indirect tax	30
(vii)	Net domestic capital formation	50
(viii)	Change in stock	7

Solution: National Income=400+100+50+(-)20–10–{30–5}=Rs.495crores

QUESTION NO.60 Calculate Operating Surplus:

	Particulars	Rs. in crores
(i)	Compensation of employees	110
(ii)	Net indirect taxes	150
(iii)	Depreciation	50
(iv)	Net factor income from rest of the world	155
(v)	Income from entrepreneurship and property	

	From rest of the world	75
(vi)	Gross domestic product at market price	1,050
(vii)	Mixed income of self-employed	500

Solution: Operating Surplus= 1,050 – 50 – 150 – 110 – 500 = Rs. 240 crores

QUESTION NO.61 **Calculate National Income:**

	Particulars	Rs. in crores
(i)	Rent	60
(ii)	Interest	40
(iii)	Profits net of corporate profit tax	20
(iv)	Corporate profit tax	5
(v)	Net factor income received from abroad	(-)5
(vi)	Compensation of employees	600
(vii)	Indirect taxes	80
(viii)	Subsidies	10
(ix)	Dividend	7

Solution: National Income = 60 + 40 + 5 + 20 + 600 + (-) 5 = Rs.720 crores

Note: Profits are calculated as sum total of (iii) and (iv) items. Dividend will not be separately included as it is already included in (iii).

QUESTION NO.62 **From the following data, calculate (a) Gross Domestic Product at Market price; and (b) Subsidies.**

	Particulars	Rs. in crores
(i)	Government final consumption expenditure	7,000
(ii)	Indirect taxes	9,000
(iii)	NNPFC	61,700
(iv)	Mixed income of self employed	28,000
(v)	Gross fixed capital formation	13,000
(vi)	Net addition to stocks	10,000
(vii)	Compensation of employees	24,000
(viii)	Depreciation	4,000
(ix)	Private final consumption expenditure	44,000
(x)	Exports of goods and services	4,800
(xi)	Imports of goods and services	5,600
(xii)	NFIA	(-)300

Solution : **(a)** GDP at Market Price (GDPMP)= 7,000 + 13,000 + 10,000 + 44,000 + {4,800 – 5,600} = Rs. 73,200 crores

(b) Subsidies = NNPFC + Depreciation – NFIA + Indirect taxes – GDPMP= 61,700 + 4,000 – (-) 300 + 9,000 – 73,200 = Rs. 1,800 crores

QUESTION NO.63 **Calculate: (a) National Income; and (b) Consumption of fixed capital.**

	Particulars	Rs. in crores
(i)	Private final consumption expenditure	210
(ii)	Gross Domestic Product at Market price (GDPMP)	320
(iii)	Wages and salaries	170
(iv)	Employers' contribution to provident fund	10
(v)	Interest	20
(vi)	Indirect taxes	30
(vii)	Subsidies	5

(viii)	Rent	10
(ix)	Profit	45
(x)	Royalty	15
(xi)	Net factor income from abroad (NIFA)	3

Solution: (a) National Income (NNPFC)= 170 + 10 + 20 + 10 + 45 + 15 + 3 = Rs. 273 crores

(b) Consumption of fixed capital = GDPMP + NFIA – (Indirect taxes – Subsidies) – NNPFC= 320 + 3 – (30 – 5) – 273 = Rs.25 crores

Note: We know: NNPFC = GDPMP – Consumption of fixed capital + NFIA – (Indirect taxes – Subsidies)

It means: Consumption of fixed capital = GDPMP + NFIA – (Indirect taxes – Subsidies) – NNPFC

QUESTION NO.64 From the following data, calculate (a) Gross Domestic Product at-Factor Cost and (b) Factor Income To Abroad:

	Particulars	Rs. in crores
(i)	Compensation of employees	800
(ii)	Profits	200
(iii)	Dividends	50
(iv)	Gross national product at market price	1,400
(v)	Rent	150
(vi)	Interest	100
(vii)	Gross domestic capital formation	300
(viii)	Net fixed capital formation	200
(ix)	Change in stock	50
(x)	Factor income from abroad	60
(xi)	Net indirect taxes	120

Solution:(a) Gross Domestic Product at factor Cost]= Compensation of employees + Rent + Interest + Depreciation*= 800 + 200 + 150 + 100 + 50 = Rs.1,300 crores

Note: Depreciation* = Gross domestic capital formation – (Net fixed capital formation + Change in stock)= 300 – (200 +50) = Rs.50 crores

(b) Factor Income To Abroad = Factor income from abroad – {Gross national product at maket price – (Gross Domestic Product at Factor Cost + Net indirect taxes)}= 60 – {1,400 – (1,300 + 120)} = Rs.80crores

QUESTION NO.65 From the following data, calculate (a) Closing Stock; (b) National Income; (c) Government Final Consumption Expenditure.

	Particulars	Rs. in crores
(i)	Private Final Consumption Expenditure	900
(ii)	Net Domestic Fixed Capital Formation	2,100
(iii)	Net Factor Income to Abroad	40
(iv)	Net National Product at Market Price	5,230
(v)	Net Indirect Taxes	150
(vi)	Opening Stock	100
(vii)	Gross Domestic Capital Formation	2,800
(viii)	Consumption of Fixed Capital	550
(ix)	Net Exports	700

Solution: (a) Calculation of Closing Stock

Gross Domestic Capital Formation = (ii) + {Closing Stock – (vi)} + (viii)

Closing Stock = Gross Domestic Capital Formation – (ii) + (vi) – (viii) = 2,800 – 2,100 + 100 – 550 = Rs.250 Crores

(b) Calculation of National Income

National Income = (iv) – (v)= 5,230 – 150 = Rs.5,080 Crores

(c) Calculation of Government final Consumption Expenditure (GFCE)

National Income = (i) + GFCE + (vii) – (viii) + (ix) – (iii) - (v)
GFCE = 5,080 – 900 – 2,800 + 550 – 700 + 40 + 150 =Rs.1,420 Crores

QUESTION NO.66 Find out Gross National Product at Market Price:

	Particulars	Rs. Crore
(i)	Net indirect tax	35
(ii)	Private final consumption expenditure	500
(iii)	Depreciation	50
(iv)	Closing stock	10
(v)	Government final consumption expenditure	150
(vi)	Net domestic fixed capital formation	100
(vii)	Net factor income to abroad	(-) 15
(viii)	Net imports	20
(ix)	Opening Stock	10

Solution: Gross National Product at Market Price (GNPMP)= 500 + 150 + (100 + 10 – 10 + 50) – 20 – (-15) = Rs. 795 crore

QUESTION NO.67 Compute Domestic Income:

	Particulars	(Rs. Crores)
(i)	Rent	155
(ii)	Government final consumption expenditure	2,500
(iii)	Subsidies	120
(iv)	Gross domestic fixed capital formation	1,190
(v)	Net factor income to abroad	125
(vi)	Net decrease in inventories	100
(vii)	Net Exports	(-)420
(viii)	Net indirect Taxes	470
(ix)	Private final Consumption Expenditure	2,200
(x)	Current replacement cost	145

Solution: Domestic Income = 2,200 + 2,500 + 1,190 – 100 – 420 – 145 – 470 = Rs. 4,755 Crore

QUESTION NO.68 Calculate (a) National Income by Expenditure Method; and (b) National Income by Income Method.

	Particulars	Rs. in crores
(i)	Government final consumption expenditure	500
(ii)	Change in stock	350
(iii)	Consumption of fixed capital	50
(iv)	Exports of goods and services	200
(v)	Private final consumption expenditure	900
(vi)	Gross fixed capital formation	800
(vii)	Subsidies	50
(viii)	Imports of goods and services	350
(ix)	Net property and entrepreneurship income From rest of the world	(-) 60
(x)	Indirect taxes	200
(xi)	Saving of the private corporate sector	30
(xii)	Net compensation of employees from Rest of the world	(-) 10
(xiii)	Operating surplus	550

(xiv)	**Compensation of employees**	**800**
(xv)	**Corporation tax**	**20**
(xvi)	**Mixed Income of self Employee**	**850**

Solution: (a) National Income by Expenditure Method= 900 + 500 + 800 + 350 + {200 – 350} – 50 – {200 – 50} + {(-) 60 + (-) 10}= Rs.2,130 crores

(b) National Income by Income Method =500+800+850+{(-)60+(-) 10} = Rs.2,130 crores

Note: NFIA is calculated as sum total of (ix) and (xii) item.

QUESTION NO.69 Calculate (a) National Income by Income and Expenditure Method; (b) Gross Domestic Product at Market Price.

	Particulars	Rs. in crores
(i)	Private final consumption expenditure	7,000
(ii)	Compensation of employees	9,000
(iii)	Operating surplus	3,000
(iv)	Government final consumption expenditure	4,200
(v)	Net fixed capital formation	1,700
(vi)	Mixed income of the self-employed	1,000
(vii)	Change in stocks	500
(viii)	Indirect taxes	300
(ix)	Exports of goods and services	600
(x)	Subsidies	100
(xi)	Import of goods and services	800
(xii)	Consumption of fixed capital	1,100
(xiii)	Factor income from abroad	800
(xiv)	Factor income to abroad	700

Solution: (a) National Income by Income Method=9000+3000+1000+{800–700}=Rs.13,100 crores

National Income by Expenditure Method = 7,000 + 4,200 + 1,700 + 500 + {600 – 800} – {300 – 100}+ {800 – 700} = Rs. 13,100 crores

(b) Gross Domestic Product at Market Price= National Income = 13,100 + 1,100 + {300 – 100} – {800 – 700} = Rs. 14,300 crores

QUESTION NO.70 Suppose in and imaginary economy, GDP at market price in a particular fiscal year was Rs. 4,000 crores, National Income was Rs.2,500 crores, Net factor Income paid by the economy to Rest of the World was Rs. 400 crores and the value of Net Indirect Taxes is Rs.450 Crores. Estimate the value of consumption of fixed capital for the economy from the given data.

Solution:NNPFC= GDPMP-Consumption of Fixed Capital (CFC) – Net factor income to abroad – Net indirect taxes 2,500 = 4,000 – CFC – 450 – 4002,500 = 3,150 – CFC OR CFC = Rs. 650 Crores.

QUESTION NO.71The factor income earned by an economy amounted to Rs.5,000 crores during a year. The economy suffers a capital loss of Rs. 300 crores due to an earthquake. The resident producers pay indirect taxes of Rs. 70 crores and they were also offered subsidies of Rs. 30 crores. Calculate NNPMP of the economy.

SolutionNNPMP = National Income + Net Indirect Taxes=5,000*+(70–30) = Rs.5,040 crores.

*Factor income earned by and economy = National Income

QUESTION NO.72GDPmp = Rs 1,000 and Subsidies = Rs 50, then GDPfc will be :

(a) 1,050 **(b)** 950 **(c)** 1,000 **(d)** 900

QUESTION NO.73The value of intermedicate consumption will be ________, if purchase of raw material is Rs. 1,200, exports are of Rs. 600 and imports are of Rs. 200.

(a) 1,200 **(b)** 800 **(c)** 1,800 **(d)** 1,400

QUESTION NO.74 If a farmer sells wheat to miller for Rs. 500 and miller sells flour to baker for Rs. 700 and baker sells bread to consumers for Rs. 1,000, then total value added by 'miller and baker' is:
(a) 500 **(b)** 300 **(c)** 1700 **(d)** 1,200

QUESTION NO.75 Income form property, rent and entrepreneurial income are respectively Rs. 150, Rs. 75, Rs 50. How much is the operating surplus ?
Solution: 150 + 50 = Rs. 200. (Note : Rent is a part of income from property.)

QUESTION NO.76 If compensation of employes in a firm constitutes 55% of net value added at factor cost of a firm, find the proportion fo operating surplus.
Solution: 100% -55% = 45% (assuming mixed income is zero.)

QUESTION NO.77 If the nominal GDP is Rs. 1,200 and Price Index (with base = 100) is 120, calculate Real GDP.
Hint: Real GDP = Rs. 1,000.

QUESTION NO.78 If the Real GDP is Rs. 300 and Nominal GDP is Rs. 330, Calculate Price Index (base = 100).
Hint: Price Index = 110.

QUESTION NO.79. If the Real GDP is Rs. 500 and Price index (base = 100) is 125, calculate the Nominal GDP.
Hint: Nominal GDP = Rs. 625.

QUESTION NO.80 If nominal income is Rs. 500 and price index is 125, calculate real income.
Hint: Real income = Rs 400.

QUESTION NO.81 Given real income to be 400 and price index be 100, calculate nominal income .
Hint: Nominal income = Rs. 400.

QUESTION NO.82 Calculate M1, M2, M3 and M4:

(i) Currency with public	**84,000**
(ii) Demand deposits with banks	**68,000**
(iii) Other deposits with RBI	**3,612**
(iv) Total deposits with Post office	**22,500**
(v) Time deposits with banks	**2,00,555**
(vi) Post office saving bank deposits	**5,528**

Solution: M1 = Currency with public + Demand deposits + Other deposits with RBI
M1 = 84,000 + 68,00 + 3,612 = Rs. 1,55,612
M2 = M1 + Savings deposits with post office saving bank OR M2 = 1,55,612 + 5,528 = Rs. 1,61,140
M3 = M1 + Net time deposits with banks OR M3 = 1,55,612 + 2,00,555 = Rs. 3,56,167
M4 = M3 + Total deposits with Post office OR M4 = 3,56,167 + 22,500 = Rs. 3,78,667

QUESTION NO.83 Calculate the value of money multiplier and total deposit created if initial deposit is of Rs. 500 crores and LRR is 10%.
Solution: Given, LRR is 10% or 0.1 OR Money Multiplier = 1/LRR = 1/0.1 = 10
If initial deposit is of Rs. 500 crores, then:
Total Deposit = Initial Deposit x Money Multiplier = 500 x 10 = Rs. 5,000 crores.

QUESTION NO.84. If the total deposits created by commercial banks is Rs. 12,000 crores and legal reserve

requirements is 25%, then calcualate the amount of initial deposits.

Solution: Given, Legal Reserve Requirements (LRR) is 25% or 0.25

Money Multiplier = 1/LRR = 1/.25 = 4

If Total deposits created is of Rs. 12,000 crores then:

Inititial Deposits = Total Deposits/Money Multiplier = 12,000/4 = 3,000 crores

QUESTION NO.85Calculate the legal reserve requirements if initial deposit of Rs. 200 crores lead to creation of total deposits of Rs. 1,600 crores.

Solution: Total deposits = Rs. 1,600 crores; Initial deposit = Rs. 200 crores

Money Multiplier = Total Deposits/Initital Deposits = 1,600/ 200 = 8

We also know: Money Multiplier =1/LRR

It means, 8 = 1/LRR OR, LRR = 0.125 or 12.5%.

QUESTION NO.86Whether the following changes by the Reserve Bank will increase the money supply or decrease the money supply ?(i) Rise in Repo rate.(ii) Purchaase of securities in the open market.(iii) RBI increases the margin from 20% to 30%.(iv) RBI reduce the Cash reserve ratio.

Solution: Increase in Money Supply: (ii), (iv); Decrease in Money Supply: (i); (iii)

QUESTION NO.87 If the total deposits created by commercial banks is Rs. 10,000 crores and legal reserve requirements is 40%, then amounts of initial deposits will be _______.

(a) Rs. 2,000 **(b)** Rs. 3,000 **(c) Rs. 4,000** **(d)** Rs.14,000

QUESTION NO.88. Calculate APC and APS from the following schedule:

Income(Y)	**100**	**200**	**300**
Consumption(C)	**80**	**120**	**180**

Solution:

Income (Y) (Rs)	Consumption (c) (Rs)	Saving (s) S=Y–C(Rs)	APC C/Y=APC	APS S/Y=APS
100	80	20	80/100 = 0.80	20/100 =0.20
200	120	80	120/200 = 0.60	80/200=0.40
300	180	120	180/300 = 0.60	120/300=0.40

QUESTION NO.89 IF APC of an economy is 0.8, what should be saving at an income level of Rs. 2,000 crores?

Solution: We know, APC + APS =1

Given: APC = 0.8; So, APS =1 – 0.8 = 0.2 ; Also, APS = Saving (s)/Income (Y) i.e 0.2 = Saving (S)/ 2,000

Saving = Rs. 400 crores.

QUESTION NO.90 (i) The disposable income (Y) is Rs. 1200 crores and consumption expenditure (C) is Rs. 800 crores. Calculate the APC.(ii) If saving is Rs. 500, out of an income of Rs. 5,000, how much is the APS?(iii) If disposable income is Rs. 1,000 and consumption expenditure is Rs. 750, find out average propensity to save.(iv) If income is Rs. 500 and saving are Rs. 100, Calculate APC.(v) When income rises from Rs. 1,000 to Rs. 1,000, saving rise by Rs. 30. Find out MPS and MPC.

Solution:(i) APC = Consumption (C) /Income(Y) = 800/ 1,200 = 0.67

(ii) APS = Saving (s)/Income (y) = 500/5,000 = 0.10

(iii) APS = Saving (s)/Income (Y) = 1,000 – 750/1,000 = 0.25

(iv) MPS = Change in Saving (S) /Change in Income(Y) =30 /1,100 - 1,000= 0.30

MPC = 1-MPS = 1- 0.30 = 0.70

QUESTION NO.91. Calculate MPC from the following schedule:

Income (Y)	**0**	**100**	**200**	**300**	**400**
Consumption (C)	**60**	**110**	**150**	**180**	**200**

Solution:

Income (Y)	Consumption (C)	Change in Consumption(C)	Change in Income (Y)	MPC MPC =C/ y
0	60	—	—	—
100	110	50	100	0.50(=40/100)
200	150	40	100	0.40(=30/100)
300	180	30	100	0.30(=30/100)
400	200	20	100	0.20(=20/100).

QUESTION NO.92 **The level of income, in an economy ,increases from Rs 20,000 crores to Rs. 70,000 crores, and a result the level of consumption increases from Rs. 15,000 crores to Rs. 45,000 crores. Calculate the MPC.**

Solution:

Income (Y)	Consumption (C)	Change in Consumption(C)	Change in Income (Y)	MPC MPC =C/ y
20,000	15,000	—	—	—
70,000	45,000	30,000	50,000	0.60

QUESTION NO.93**Calculate the value of MPS from the given table:**

Income (Rs)	**100**	**200**	**300**	**400**	**500**
Saving (Rs)	**15**	**40**	**70**	**110**	**160**

Solution:

Income (Y)	Consumption (C)	Change in Saving(C)	Change in Income (Y)	MPC MPC =S/ y
100	15	—	—	—
200	40	25	100	0.25(=25/100)
300	70	30	100	0.30(=30/100)
400	110	40	100	0.40(=40/100)
500	160	50	100	0.50(=50/100)

QUESTION NO.94 **Complete the following table:**

Level of Income (Rs.)	**400**	**500**	**600**	**700**
Consumption Expenditure (Rs)	**240**	**320**	**395**	**465**
MPC	**—**	**—**	**—**	**—**
MPS	**—**	**—**	**—**	**—**

Solution:

Level of Income(Y)	Consumption Expenditure (C)	MPC MPC = C/y	MPS MPS = S/Y
400	240	—	—
500	320	0.85(=80/100)	0.20(=1-0.80)
600	395	0.75(=75/100)	0.25(=1-0.75)
700	465	0.70(=70/100)	0.30(=1-0.70)

QUESTION NO.95 **Complete the following table:**

Income	Saving	Marginal Propensity To consume	Average propensity to save
0	**-12**	**—**	**—**

20	**-6**	—	—
40	**0**	—	—
60	**6**	—	—

Solution:

Income(Y)	Saving(S)	Consumption(C)	Marginal Propensity To consume (MPC) MPC=C/Y	Average Propensity To save (APS) APS=s/Y
0	-12	12	—	—
20	-6	26	0.70	-0.30
40	0	40	0.70	0.00
60	6	54	0.70	0.10

QUESTION NO.96 **Complete the following table:**

Income	Consumption	Marginal Propensity To save	Average propensity to save
0	**40**	—	—
50	**70**	—	—
100	**100**	—	—
150	**120**	—	—

Solution:

Income(Y)	Consumption(C)	Saving(S)	Marginal Propensity To save MPS = S/Y	Average Propensity to save APS = S/Y
0	40	-40	—	—
50	70	-20	0.40	-0.40
100	100	0	0.40	0
300	120	30	0.60	0.20

QUESTION NO.97 **Complete the Following table:**

Income	Marginal Propensity To consume	Saving	Average Propensity to save
0	—	**-90**	—
100	**0.6**	—	—
200	**0.6**	—	—
300	**0.6**	—	—

Solution:

Income(Y)	MPC	MPS MPS =1-MPC	S S=MPSxY	Saving(S)	APS APS =S+Y
0	—	—	—	-90	—
100	0.6	0.4	40	-50	-0.50
200	0.6	0.4	40	-10	-0.05
300	0.6	0.4	40	30	0.10

QUESTION NO.98 **From the following schedule, compute APC, APS, MPC and MPS:**

Income(Rs)	**50**	**100**	**150**	**200**
Saving (Rs)	**10**	**40**	**75**	**120**

Solution:

Income(Y)	Saving(S)	Consumption(C)	APC	APS	MPC	MPS
50	10	40	0.80	0.20	—	—

100	40	60	0.60	0.40	0.40	0.60
150	75	75	0.50	0.50	0.30	0.70
200	120	80	0.40	0.60	0.10	0.90

Formula used : C=Y-S; APC = C/Y; APS = S/Y; MPC- C/ Y; MPS- S/ Y

QUESTION NO.99. Given that national income is Rs.80 crore and consumtion expenditure Rs.64 crore, Find out average propensity to save. When income rises to Rs. 100 crore and consumption expenditure to Rs. 78 crore, what will be the average propensity to consume and the marginal propensity to consume?

Solution: Average Propensity to Save = Saving(S)/Income(Y) = 80-64/80 = 16/80 =0.20

When income rises to Rs.100 crore and consumption expenditure to Rs.78 crore

Average Propensity to Consume = Consumption(C)/Income(Y) = 78/100 = 0.78

Marginal Propensity to Consume =Change in Consumtpion(C)/Change in Income (Y)=78–64/100-80 =14/20 = 0.70

QUESTION NO.100The consumtion expenditure and investment demand are Rs.600 crores and Rs.300 crores respectively, when income is Rs.1,000 crores.(i) AD , (ii) AS , (iii) Saving.

Solution:(i)AD= Consumption expenditure (C) + Investment demand(I)AD= 600 + 300 = Rs. 900

(ii) We know, aggregate supply (AS) and national income (Y) mean one and the same thing.So, AS = Rs. 1,000 crores

(iii) Given AS =1,000 and C =600 ; It means, Saving (S) = Y-C = Rs. 400 crores

QUESTION NO.101 Using the equation of consumption function: C =c +b(Y), calculate consumption expenditure at the income level of Rs. 500 crores, if autonomous consumption is Rs. 40 crores and 40% of additional income is saved.

Solution: Given: MPS =0.4 ;MPS or b =1-0.4 = 0.6

Given: Autonomous Consumption (c) = Rs.40 crores; Income (Y) = Rs.500 crores

Putting the values of b, c and Y in the consumption function, we get: C = 40 + 0.6 x 500 =Rs.340 crores

QUESTION NO.102The saving curve of an economy maker a negative intercept of Rs.50 crores and 20% of additional income is saved. Derive the saving and consumption function.

Solution: Given : Autonomous Consumption (c) = Rs. Crores

MPS = 0.2 ; Saving function is given as: S = -c+(1-b) Y

Putting the value of (1-b) or MPS and – c, we get: S = -50 + 0.2(Y)

Consumption Function is given as : C = c + b(Y) ; B or MPC =1 –MPS = 1 -0.2 = 0.8

Putting the value of b and (c) in the consumption function, we get: C = 50 + 0.8(Y).

QUESTION NO.103 With the help of saving fuction: S =-20+0.3 (Y), Calculate consumption expenditure at the income level of Rs. 1,000 crores.

Solution: We know, Saving function is expressed as: S = -c+(1-b)Y

It means: -20 indicates that autonomous consumption © = Rs.20 crores

0.3indicates(1-b), i.e. MPS = 0.3

We know, consumption function is given as : C = c + b(Y)

MPC or b =1- MPS = 1-0.30 = 0.70 ; Income or Y = Rs. 1,000 crores

Putting the value of b, (c) andY in the consumtion function, we get:

C = 20+0.7 x 1,000 = Rs.720 crores.;Therefore Consumption Expenditure (C) = Rs. 720 crores

QUESTION NO.104 On the basis of consumption function: C = 120 + 0.40 Y; answer the following questions: (i)Derive the saving function.(ii)Determine the saving at the income level of Rs. 500 crores.(iii)At what level of income, saving becomes zero?

Solution:(i) We know, Consumption function is expressed as: C = c + b(Y)

It means : 120 is the autonomous consumption ($\underline{c}$) and 0.40 indicates MPC or b MPS or b Saving function is given as S= - $\underline{c}$ + (1 – b)Y

MPS or (1-b) = 1 – MPC = 1 -0.04 = 0.60

Putting the values of (1-b) or MPS and – $\underline{c}$, we get: S= -120 +0.60(Y)

(ii) For saving at income (Y) of Rs. 500 crores, putting the values of (1 –b), $\underline{c}$ and Y in the saving function, we get:

S = -120 + 0.60 x 500 =Rs. 180 crores

(iii) Saving will become zero at break-even point, i.e. when Y =C.

Replacing C with Y in the consumption function to determine the break-even point.

Y = 120 + 0.40Y or,0.6Y = 120 or,Y = 200

Saving will become zero at income level of Rs. 200 crores

QUESTION NO.105. If MPC is one-third of MPS and consumption at zero level of national is Rs. 40 crores, derive the consumption and saving function.

SolutionGiven: MPC = 1/3 MPS ;We know: MPC + MPS = 1

Putting value of MPC from (1) in (2), we get:

1/3MPS + MPS =1 or,MPS = 3/4 = 0.75 or, MPC = 1/3 x0.75= 0.25

Consumption function is given as: C = $\underline{c}$ + b(Y)

Autonomous Consumption ($\underline{c}$) = Rs. 40 crores and b or MPC = 0.25

Putting the values of b and $\underline{c}$ in the consumption function,we get: C = 40 +0.25(Y)

Saving function is given as: S = -$\underline{c}$ +(1-b)Y,

Putting the values of (1-b) or MPS and –$\underline{c}$, we get : S = -40 +0.75(Y)

QUESTION NO.106The consumption function for an economy is : C = 20 + 0.8Y (assuming amount in Rs. Crores). Determine the level of income when average propernsity to consume will be one.

Solution: Average propensity to consume (APC) is 1 at break-even point, i.e. when consumption (C) = Income (Y)

Putting C = Y in the consumption function, we get:

Y = 20 + 0.8Y, or Y= 100

It means, APC will be 1 when the level of income is RS 100 crores.

Note: Proof: consumption of Rs. 100 crores will be: C = 20 + 0.8 x 100 = 100.

APC = Consumption (C)/Income(Y) = 100/100 = 1

QUESTION NO.107 The break-even level of income for an economy is given to be Rs. 10.000 crores. If the economy saves 20 percent of additional income. Then calculate the value of autonomous consumption.

Solution: Given: MPS = 0.2 MPC or b = 1-MPS = 0.8

Consumption (C) = Income(Y) at break-even of income

So, Consumption (C) = 10,000

Consumption function is expressed as: C = $\underline{c}$ + b(Y)

Putting the values of C,b and Y, We get: 10,000 = $\underline{c}$ + 0.8(10,000)

Autonomous Consumption ($\underline{c}$) = Rs. 2,000 crores

QUESTION NO.108Given Below is the consumption function of an economy :C = 100 + 0.5Y.
With the help of a numerical example, show that in this economy, as income increases, APC will decrease.

Solution: Given consumption function : C = 100 + 0.5Y

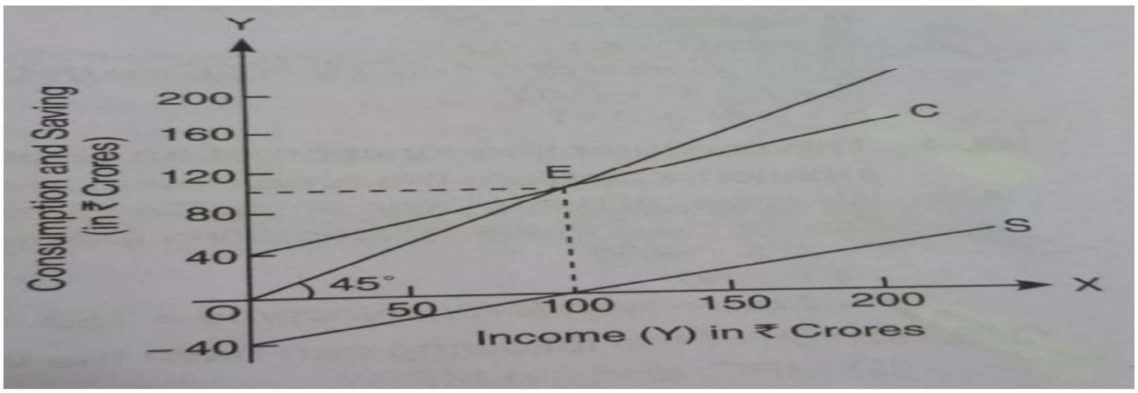
To Show that APC decreases with increase in income, consider the following hypothetical schedule:

Income(Y)	Consumption (C)	APC
	C = 100+0.5Y	APC =C/Y
100	150(=100+0.5 x 100)	1.50(=150/100)
200	200(=100+0.5 x 200)	1(=200/200)
300	300(=100+0.5 x 300)	0.83(=250/300)

400	400(=100+0.5 x 400)	0.75(=300/400)
500	500(=100+0.5 x 500)	0.70(=350/500)

As seen in the given schedule, when the income increases from Rs. 100 crores to Rs. 200 crores and then to Rs. 300 crores and so on. APC decreases from 1.5 to1 and then to 0.83 and keeps on decreasing with increase in income. Therefore, with an increase in income, APC decreases.

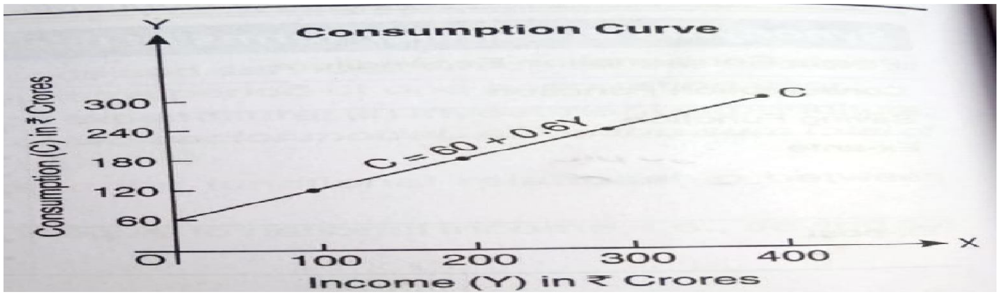
QUESTION NO.109On the basis of given diagram, answer the following questions:
(i)What is the value of autonomous consumption?
(ii)What is the break-even level of income or at what level of income saving is zero?
(iii)How much is APC corresponding to point E?
(iv)If MPC = 0.6, determine the consumption and saving function?



Solution:(i) Consumption curve makes an intercept of Rs. 40 crores on the y-axis. So, Autonomous Consumption (c) = Rs.40 crores.**(ii)**Break-even point occurs when Consumption = Income (or Saving =0) So, Break-even level of income = Rs. 100 crores.**(iii)** At point E, C=Y = Rs. 100 crores. So, APC = Consumption(C)/Income(Y) = 100/100 = 1
(iv) Consumption function is given as : C = c + b(Y)
Autonomous Consumption (c) = Rs. 40 crores and b or MPC = 0.6
Putting values of b and (c) in consumption function, we get: C = 40 + 0.6Y
Saving function is given as: S =- c + (1-b) Y or (1-b) or MPS = 1-MPC = 1- 0.6 =0.4
Putting values of (1-b) or MPS and – (c), we get: S= -40 + 0.4Y

QUESTION NO.110 The consumption function of an economy is given as: C= 60 +0.6Y. Draw a diagram showing consumption expenditure corresponding to income levels of 0, 100, 200, 300 and 400. (Values of income and autonomous consumption are in Rs. Crores).
Solution: Given: Autonomous Consumption (c) = Rs. 60 crores; MPC or b = 0.6.
To make the diagram, let us first calculate consumption expenditure corresponding to different income levels.

Income (Y) (Rs. Crores)	Consumption (C) (Rs. Crores)
	C = c + b(Y)
0	60 (=60 + 0.6 x 0)
100	120(=60+0.6 x 100)
200	180(=60+0.6 x 200)
300	240(=60+0.6 x 300)
400	300(=60+0.6 x 400)



QUESTION NO.111The consumption function is given as C = 40 + 0.6Y. Derive saving function.

Solution: We know, income (Y) = Consumption (C) + Saving (S).

It means, S = Y – C Given: C = 40 + 0.6Y ;Putting value of C, we get: S=Y –(40+0.6Y)

S = Y – 40 – 0.6 Y or,S = – 40 – 0.4 Y

QUESTION NO.112. The Consumption function of an economy is given as : C= 60 + 0.6Y. For the given consumption function, calculate the break-even level of income.

Solution: We know, at break-even point, Consumption (C) = Income(Y).

Y-0.6Y = 60 or,0.4 Y = 60 ;Y = Break- even level of Income = 150

QUESTION NO.113. Which of the following can have the value of more than one and less than zero: (i) APC; (ii) APS; (iii) MPC; (iv) MPS?

Solution:APC can be more than one as long as consumption I more than national income, i.e. before the break-even point, APC > 1·APC can be less than zero at income levels which are lower than the break-even point..Both MPC and MPS cannot be more than one or less than zero as change in consumption or saving cannot be more than change in income.

QUESTION NO.114. Draw on a diagram a straight line savings curve for an economy. From it derive the consumption curve, explaining the method of derivation. Show a point on the consumption curve at which average propensity to consume is equal to 1.

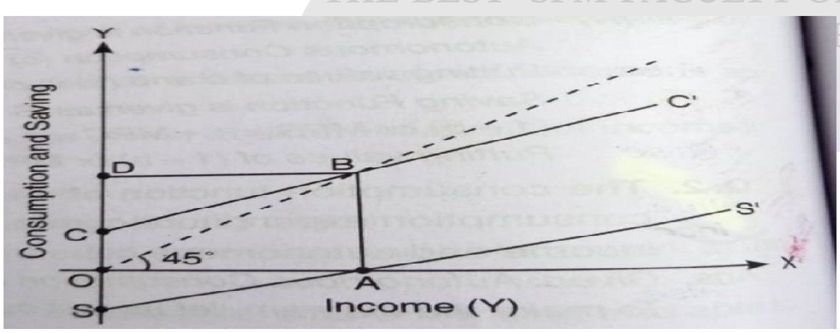
Solution: In the given diagram, SS' is the saving curve which shows negative savings equal to OS at zero level of income and zero saving at OA level of income.

·At zero level of income, consumption expenditure is equal to OC which is equal to negative saving of OS at that level of income. SO, C is the starting point of consumption curve.

·Saving are zero at OA level of income as the whole of income is spent. So, at OA level of income, consumption expenditure must be equal to OD=OA. This gives a point B on the consumption curve.

By joining C and B and extending it further, we get consumption curve.

At point B on the consumption curve, total consumption expenditure (C) is equal to total income(Y). So C/Y=1. Hence, at point B, on consumption curve, APC=1



QUESTION NO.115. Explain the relationship between average propensity to consume and average propensity to save. Can the value of average propensity to consume be greater than 1? Give reasons for your answer.

Solution: Average propensity to costume (APC) is the ratio of consumption expenditure (C) and income (Y) , i.e. APC =C/Y. Average propensity to save (APS) is the ratio of saving (S) and income, i.e. APS = S/Y . As the income is consumed or saved, the sum of APC and APS is always equal to 1. The higher (lower) the APC, the lower (higher) will be the APS.

The value of APC can be greater than one if C is greater than Y. At very low levels of income, savings are spent to meet the very basic necessities. SO, at these levels of income, C is greater than Y and thus, value of APC can be greater than 1.

QUESTION NO.116. Distinguish between voluntary unemployment and involuntary unemployment. What is the significance of this distinction?

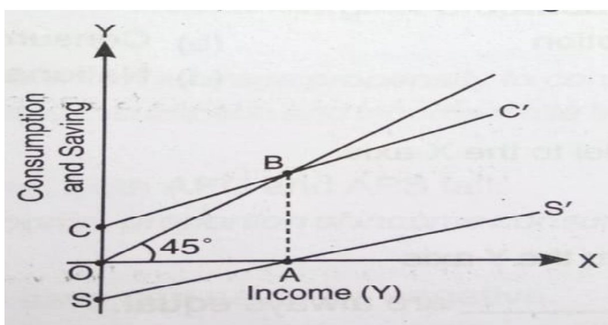
Solution: Voluntary unemployment refers to a situation when a person is unemployed because he is not willing to work at the existing wage rate. On the other hand, involuntary unemployment refers to an unemployment in which all those people, who are willing and able to work at the existing wage rate, do not get work.

The distinction is significant to determine the total unemployment in an economy. Voluntary unemployment is not counted while estimating the size of unemployment. While involuntary is considered while estimating the total unemployment in an economy.

QUESTION NO.117. Discuss the immediate effect on consumption expenditure in the economy due to demonetization?

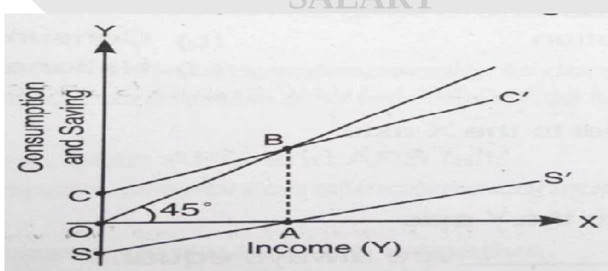
Solution: With people scrambling for cash to pay for goods and services, the consumption expenditure is likely to get reduced till the new currency gets circulated in the market.

QUESTION NO.118. Average propensity to consume is ——— at point B and average propensity to Save is ——— at point A. **(a)** 0, 1 **(b) 1, 0** **(c)** 1,1 **(d)** 0,0



QUESTION NO.119 The value of ——————— can server never be negative, while ———— can have a value equal to one. **(a)** APS, APC **(b)** MPC, APS **(c)** APC, APS **(d) MPS, APC**

QUESTIONNO.120 Break-even point in the following diagram is represented



(a) Point B **(b)** Point A **(c) Both (a) and (b)** **(d)** neither (a) not (b)

QUESTION NO.121If C = 100 + 0.75 Y, then saving function will be expressed as:
(a) S = 100 + 0.25Y **(b)** S = -100+0.75Y **(c) S= -100 + 0.25Y** **(d)** S = 75 + 0.25Y

QUESTION NO.122.What is the relationship between APC and APS?
Solution: The sum of APC and APS is equal to one, i.e., APC + APS = 1.

QUESTION NO.123What is the relationship between marginal propensity to save and marginal propensity to consume?
Solution: The sum total of MPC and MPS is equal to one, i.e., MPC + MPS =1.

QUESTION NO.124. If APS is 0.6, How much will be the APC?
Solution:APC =1-APS = 1 – 0.6= 0.4

QUESTION NO.125. If MPC is 0.75, what will be the MPS?
Solution:MPS=1- MPC =1-0.75=0.25

QUESTION NO.126.How much is the marginal propensity to consume in an economy in which MPS is 0.2?
Solution:MPC = 1 –MPC = 1-0.2 = 0.80

QUESTION NO.127If the saving function is S = -20 + 0.2Y, then what will be the value of MPC?
Solution:0.3 indicates that MPS = 0.3. So, MPC = 1-MPS =1-0.30 = 0.70

QUESTION NO.128Calculate Multiplier if MPC is: (i) 0.75; (ii) 0.90.
Solution:(i) Multiplier (k) = 1/1-MPC = 1/1-0.75 = 1/0.25 = 4
(ii) Multiplier (K) = 1/1-MPC = 1/1-0.90 = 1/0.10 = 10

QUESTION NO.129.Calculate the value of multiplier if the MPS is: (a) 0.40; (b) Equal to MPC
Solution:(a) Multiplier (K) = 1/MPS = 1/0.40 = 2.5 **(b)**IF MPS = MPC, then MPS = 0.5 ;Multiplier (k) = 1/MPS = 1/0.5 = 2

QUESTION NO.130. In an economy, income generated is four time the increase in investment expenditure. Calculate the values of MPS and MPC.
Solution: Multiplier = 4 ;Multiplier (k) = 1/1-MPC or,4 = 1/1-MPC or,1-MPC = 1/4 or,MPc = 0.75
or, MPS = 1- MPC = 1- 0.75 or,MPS =0.25

QUESTION NO.131.In an economy, the Marginal propensity to consume is 0.8. It the inventment increases by Rs. 1,000 crores, calculate the total increase in income.
Solution: Multiplier (k) = 1/1-MPC = 1/1-0.80 = 1/0.20 = 5
We also know k: = Change in Income(Y)/Change in Investment(I)
Given: Change in Investment (I) = Rs. 1,000 crores
i.e., 5 = Change in Income(Y)/1,000 ;So, Change in Income (Y) = Rs. 5000 crores

QUESTION NO.132In an economy , 60% of increased is spent on consumption . If Rs. 4 crores are invested in a project, find out the increases in income and saving.
Solution: Given: MPC = 0.6 Multiplier (k) = 1/1-MPC = 1/1-0.6 = 2.5
We know : k = Change in Investment(Y) / Change in Investment(I)
Given: Change in Investment(I) = Rs. 4 crores i.e. 2.5 = Change in Income (Y)/4

Change or Increase in Income (Y) = Rs. 10 crores
MPS = 1 -0.60 = 0.40 MPS = Change in Saving(S)/Change in Income(Y)
Change in Saving (S)= Y x MPS = 10 x 0.4 = Rs. 4 crores

QUESTION NO.133. In an economy, the actual level of income is Rs. 500 crores, whereas, the full employment level of income is Rs. 800 crores. If one –fourth of additional income is saved, calculate increase in investment required to achieve full employment level of income.
Solution: Given: MPS = 0.25 ;Multiplier (K) = 1/MPS = 1/0.25 = 4
We also known: k = Change in Income(Y)/Change in Investment (I)
Given: Change in Income (Y) = 800 – 500 = Rs 300 crores i.e., 4 = 300/Change in Investment (I) = Rs. 75 crores

QUESTION NO.134. In an economy, the equilibrium level of income falls short by Rs. 500 crores. Calculate the additional investment needed to achieve the equilibrium level of income, if 80% of increased income is spent on consumption.
Solution: Given: MPC=0.80 ;Multiplier (k) = 1/1-MPC = 1/1-0.80 = 1/0.20 = 5
We also known: k = Change in Income (Y)/ Change in Investment(I)
Given: Increase in Income (Y) required = Rs. 500 crores
i.e., 5 = 500/ Change in Investment(I)
Hence, Change in Investment (I) = Rs. 100 crores ;Additional investment required = Rs. 100 crores

QUESTION NO.135 Calculate MPS and Multiplier (k) from the following data :

Income(rs.)	**100**	**200**
Saving(Rs.)	**40**	**100**

Solution:

Income (Y)	Saving (S)	Change in Saving(s)	Change in Income (Y)	MPS (s/Y)	Multiplier (k) 1/MPS
100	40	—	—	—	—
200	100	60	100	0.60	1.67(=1/0.60)

Ans: MPS = 0.60; Multiplier (k) = 1.67

QUESTION NO.136. In an economy, marginal propensity to consume is 0.75. if investment expenditure is increased by Rs.500 crores, calculate the total increase in income and consumption expenditure.
Solution: Multiplier (K) = 1/1-MPC = 1/1-0.75 = 1/0.25= 4
We also known:K = Change in Income(y)/Change in investment(I)
4 = Change in Income (Y) / 500 So, change in Income (Y) = Rs. 2000 crores
MPC = Change in Consumption (c) / Change in Income (Y)
0.75 = Change in Consumption(c)/2,000 ;So, Change in Consumption (C) = Rs. 1500 crores

QUESTION NO.137. An increase of Rs. 200 crore in invenstment leads to a rise in national income by Rs. 1000 crores. Find out maraginal propensity to costume.
Solution: Multiplier (K) = Change in Income (Y)/Change in Investment(I)= 1,000/200 = 5
We know, Multiplier (k) = 1/1-MPC or,5 = 1/1-MPC or,1-MPC = 1/5
Hence, MPC = 1 – 0.20 = 0.80

QUESTION NO.138 AS a result of increase in investment by Rs. 125 crores, national increases by Rs. 500 crores. Calculate marginal propensity to consume/
Solution: Multiplier (k) = Change in Income(y)/Change in Investment(I) = 500/125 = 4
We know, Multiplier (K) = 1/1-MPC or,4 = 1/ 1-MPC or,1-MPC = ¼ or MPC = 1 – 0.25 = 0.75

QUESTION NO.139. In an economy, investment is increased by Rs. 300 crore. If marginal propensity to consume is 2/3, Calculate increase in national income.

Solution: Multyplier (K) = 1/1-MPC = 1/1-3 = 1/0.33 = 3

We also know: k =Change in Income(y)/ Change in Investment(I)

3 = Change in Income (Y)/300 ;Hence, Increase in National Income (Y) = Rs.900 crores

QUESTION NO.140. If marginal propensity to consume is 0.9, what is the value of multiplier? How much investment is needed, if national increases by Rs. 5,000 crores?

Solution: Multiplier (k) = 1/1-MPC = 1/1-0.90 = 1/0.10

We also know: k = Change in Income(Y)/Change in Investment(I)

10 = 5,000/Change in Investment(I) ;Hence, Change in Investment (I) = Rs. 500 crores

QUESTION NO.141. In an economy the entire increase in income is spent on consumption. What will be the value of multiplier?

Solution: When entire increase in income is spent on consumption, then: C=Y, i.e. MPC =1

We know: Multiplier (k) = 1/1-MPC ;When MPC = 1, then: k =1/1-1 = 1/0 = 0

QUESTION NO.142. In an economy 75% of the increase in income is spent on consumptions. Investment increased by Rs. 1,000 crore. Calculate: (A) total increase in income; (B) total increase in consumption expenditure.

Solution: Given: MPC = 0.75

Multiplier (K) = 1/1-MPC = 1/1-0.75 =1/0.25 = 4

When also know: k = Change in Income (Y)/ Change in Investment (I)

4 = Change in income (Y)/ 1,000 So, Change in Income (Y) = Rs.4000 crores

MPC = Change in Consumption(c)/Change in Income(Y)

0.75 = Change in consumtion(C)/4000 So, Change in Consumption (C) = Rs.3,000 crores

QUESTION NO.143. An increase of Rs. 250 crores in investment in an economy resulted in total increases in income of Rs. 1000. Calculate the following(A) Marginal propensity to consume (MPC),(B) Calculate in saving, (c)Change in consumption expenditure, (D) value of computer.

Solution Multiplier k = Change in Income (Y)/Change in Investment(I) = 1000/250 = 4

We know, Multiplier (K) = 1/1-MPC or,4 = 1/1-MPC or,1-MPC = ¼

Hence, MPC= 1–0.25 =0.75 or,MPC=Change in Consumption(C)/Change in Income (Y)

or,0.75 = Change in Consumption (C)/1000

So, Change in Consumption Expenditure (C) = Rs.750 crores.

Change in Saving = Change in Income – Change in Consumption Expenditure

So, Change in Saving = Rs. 1,000 crores – Rs. 750 = Rs. 250 crores

QUESTION NO.144 In an economy, income increases by 10,000 as a result of a rise in investment expenditure by 1,000. Calculate: (a) Investment Multiplier; (b) Marginal Propensity to Consume.

Solution: (a) Investment Multiplier (k) = Change in Income (Y)/ Change in Investment (I) = 10,000/1,000 = 10

(b) We know, k = 1/1-MPC or,10 = 1/1-MPC or,MPC = 1-0.10 = 0.9

QUESTION NO.145. In an economy, an increase in investment leads to increase in national income which is three time more than the increase in investment. Calculate marginal propensity to consume.

Solution: Let increase in Investment = I

Then, Increase in national income = Increase in Income/Increase in Investment = 4 I/ I = 4

We know, k = 1/1-MPC or,4 = 1/1-MPC or,1-MPC = 1/4

Hence, MPC = 1 – 0.25 = 0.75

QUESTION NO.146 In an economy, with every increase in income, 10 per cent of the rise in income is saved. Suppose a fresh investment of Rs. 120 crores takes place in the economy. Calculate the following: (i) Change in the income; (ii) Change in consumption.

Solution: Given: MPS = 0.10 ;Multiplier (k) = 1/MPS = 1/0.10 = 10
We also know: k = Change in Income(Y)/ Change in Investment (I)
10 = Change in Income(Y)/120 So, Change in INCome (Y) = Rs. 1200 crores
MPC = Change in Consumption (C)/ Change in Income (Y)
0.90 = Change in Consumption (C)/1,200 ;So, Change in Consumption (C) = 1,200 x 0.90 = Rs. 1,080 crores

QUESTION NO.147 If an additional investment of Rs. 500 crores increases the income by Rs. 500 crores in the first round of the multiplier process, by Rs. 450 crores in the second round, by Rs.405 Crores in the third round and so on. Determine the total increase in income.

Solution: Increase of Rs. 450 crores in the second round and of Rs. 405 crores in the third round indicates that 90% of additional income is spent on consumption i.e MPC = 0.90.
Multiplier (k) = 1/1-MPC = 1/1-0.90 = 1/0.10 = 10
We also known: k = Change in Income (Y)/ Change in Investment(I)
10 = Change in Income(Y)/500 or Change in Income (y) = Rs.5,000 crores

QUESTION NO.148. Given consumption function C = 100+0.75Y (where C = consumption expenditure and Y = National Income) and investment expenditure Rs. 1,000, Calculate: (i) Equiliblrim level of national income: (ii) Consumption expenditure at equilibrium level of national income.

Solution:(i) Equilibrim level of National Income(Y) :At Equilibrim, Y = C+I Or, Y = 100 + 0.75Y + 1,000 or,Y = Rs. 4,400

(ii) Consumption expenditure at equilibrium level of national income.
Putting value of National Income of 4,400 in consumption function, we get:C = 100+0.75 x 4,400 or,C = Rs. 3,400

QUESTION NO.149.In an economy, the consumption function is C = 500+0.75Y, where C is consumption expenditure and Y is income. Calculate the equilibrium level of income and consumption expenditure, when investment expenditure is 5,000.

Solution :(i)Equilibrium level of National Income (Y):
At Equilibrium, Y = C+I Or, Y = 500 + 0.75 + 5,000 or,0.25Y = 5,500 or,Y = 22,000

(ii)Consumption expenditure at equilibrium level of national income:
Putting value of National income of 22,000 in consumption function, we get:C = 500 + 0.75 x 22,000 or,C = 17,000

QUESTION NO.150.The saving function of an economy is S= -200 + 0.25Y. The economy is in equilibrium when income is equal to 2,000. Calculate: (a) Investment expenditure at equilibrium level of income; (b) Autonomous consumption; (c) Investment multiplier.

Solution:(a)Investment expenditure at equilibrium level of income:
Given. Equilibrium level of income(Y) = 2,000. Putting value of Y in saving function, we get: S = -200 + 0.25 x 2,000 = 300
At equilibrium Planned Saving (S) = Planned Investment (I). It means:
Investment expenditure (I) at equilibrium level of income = 300

(b)Autonomous consumption:
We know, Consumption (C) + Saving (S) = Income (Y)
Autonomous consumption means the level of consumption expenditure when income is zero.
When Y = O; Saving = -200; So, autonomous consumption = 200
{Alternately, autonomous consumption can also be calculated from the saving function. We know, Saving function is expressed as: S = -© + Y(1-b). It means, -200 indicates that autonomous consumption(C) = 200}

(c)Investment Multiplier:

From the saving function, we know that MPS = 0.25 ;Investment Multiplier (k) = 1/MPS = 1/0.25 = 4

QUESTION NO.151. If saving function for an economy is given as: S= -500+0.2Y and investment expenditure is Rs. 100 crores, then determine; (i) Level of income when saving will become zero; (ii) level of income when saving is equal to investment.

Solution:(i) Given Saving function: S = -500 + 0.2Y ;Putting value of S = 0 in the Saving function, we get: or, 0 = -500+0.2Y or,Y = 3,000 ;Saving will become zero when the level of income Rs. 2,500 crores.

(ii) Saving is equal to investment at equilibrium level of Rs. 3,000 crores.

QUESTION NO.152.The Equilibrium level of income in an economy is Rs. 5,000 crores. The autonomous consumption expenditure is equal to Rs. 250 crores and investment expenditure Rs. 1,000 crores. Calculate: (i) Consumption expenditure at equilibrium level of national income; (ii) Marginal Propensity to save; (iii) Saving function; (iv) Investment Multiplier; (v) Break-even level of Income.

Solution:(i)Consumption expenditure at equilibrium level of national income.

C + I = Y ;Putting value of investment Expenditure (I) of Rs. 1,000 and income (Y) of Rs. 5,000, we get:C = 5,000 – 1,000 or,C = Rs. 4,000 crores

(ii)Marginal Propensity to save (MPS)

Consumption function is given as : C = $\underline{c}$ and Y in the consumption function, we get:

or,4,000 = 250 + 5,000b or,5,000b = 3,750 or,B or MPC = 0.75 ;MPS = 1- MPC = 1- 0.75 = 0.25

(iii)Saving function :Saving function is given as: S = -$\underline{c}$ + (1-b) Y

Putting the values of (1-b) or MPS and –$\underline{c}$, we get: S = -250 + 0.25 (Y)

(iv)Investment Multiplier: Investment Multuplier (k) = 1/1-MPS = 1/0.25 = 4

(v)Break-even level of Income:At break-even point, C = Y

Putting Y = C in the consumption function. We get: Y = 250 + 0.75Y or,0.25Y = 250 or,Y = 1,000

QUESTION NO.153 In an economy, the investment expenditure is Rs. 70 crores and consumption function is C = 60 + 0.80Y. (i) Determine the equilibrium level of income; (ii) Find the equilibrium income when planned investment expenditure is increased by Rs. 10 crores; (iii) Value of multiplier due to increase in investment expenditure.

Solution:(i)Equilibrium level of Income (Y)

At equilibrium, Y = C+I Or, Y = 60 + 0.80Y + 70 or,0.20Y = 130 or,Y = RS. 650 crores

(ii) Equilibrium income when planned investment expenditure is increased by RS. 10 crores, i.e. I = RS. 80 crores. At Equilibrium, Y = C+ I Or, Y = 60 + 0.80Y + 80 or,0.20Y = 140 or,Y = RS. 700 crores

(iii)Value of Multiplier (k): As a result of Rs. 10 crores increase in investment, income increases by RS. 50 crores. K = Change in Income/ Change in Investment or, K = 50/10 = 5

QUESTION NO.154. Find national income from the following:

Autonomous consumption =Rs. 100;Marginal propensity to consume = 0.80;Investment = RS.50

SolutionWe know : National Income (Y) = Consumption (C) + Investment (I)

Consumption function is given as :C = $\underline{c}$ + b(Y) So, Y = $\underline{c}$ + b(Y) +1

Putting the values of $\underline{c}$, b and I, we get:Y = 100+0.8Y + 50 or,0.2Y = 150 or,National Income (Y) = RS. 750

QUESTION NO.155.When MPC is equal to MPS , increase in income will be two time the increase in investment". Comment.

Solution: The given statement is correct. Equality between MPC and MPS signifies that both of then equal to 0.5(as MPC + MPS = 1). It means, Multiplier (k) = 1/MPS = 1/0.5 = 2. Ask k =2 , it proves that increase in income will be two times the increase in investment.

QUESTION NO.156.The saving function of an economy is given as: S = -40 + 0.4 (Y). Calculate the total

increase in income if investment expenditure increases by RS. 700 crores.

Solution: We know, Saving function is expressed as: S = -c+(1-b), i.e.MPS. So, MPS = 0.4. Multiplier (k) = 1/MPS = 1/0.4 = 2.5.

We also know: Multiplier (k) = Change in Income/Change in Investment

Given: Increase in investment expenditure = Rs. 700 crores

2.5 = Change in Income/700 or Change in income = RS. 1750crores

QUESTION NO.157. In a two sector economy, the saving function is given as: S = -10+0.2Y and investment function is expressed as: I = -3 +0.1Y. Calculate the equilibrium level of income?

Solution: Equilibrium level of income is attained when S = I. it means:

-10+0.2 = -3+0.1Y or,0.2Y – 0.1Y = -3+10 or,0.1Y =7 or,Y = 70

QUESTION NO.158. Calculate the additional investment needed it the equilibrium level of income falls short by Rs. 1,000 crores. It is given that consumption function is given as: C = 120 + 0.8 Y.

Solution: We know, consumption function is expressed as: C = c +B(Y). It means 0.8 indicates MPC, i.e. MPC = 0.8. or,Multiplier (k) = 1/1-MPC = 1/1-0.8 = 5

We know: Multiplier (K) = Change in income/Change in Investment

Given: Change in Income = Rs. 1,000 crores or,5 = 1,000/Change in Investment

Additional Investment Needed = Rs. 200 crores

QUESTION NO.159. In a two-sector economy, the income function is: Y = C and consumption function is given as: C =40 +0.75Y. If investments are Rs. 60 crores, Calculate: (a) Equilibrium level of income; (b) level of consumption at equilibrium; (c) Saving at equilibrium.

Solution: **(a)** At equilibrium level, AD = AS = National Income (Y) So, AD = Y = C+I

Given: C = 40 + 0.75Y. Putting this value of C in the equation Y =C + I , we get:

Y = (40 + 0.75 Y) + 60 or,Y = Equilibrium level of income = Rs. 400 crores

(b) Putting the value of Y = 400 in the consumption function (C = 40 +0.75Y), we get:

C = 40+ 0.75 x 400 = 340 in the consumption at equilibrium = Rs. 340 crores

(c) Saving (S) = Income (Y) – Consumption (C) or,Saving = 400 – 340 = RS. 60 crores

Level of Savingat equilibrium = Rs. 60 crores

QUESTION NO.160. The value of marginal propensity to consume is double the value of marginal propensity to save. Find the value of multiplier.

Solution: Ratio of MPC is 2/3 and MPS is 1/3 Multiplier = 1/MPS = 1/ 1/3 = 3 or 1/1-MPC = 1/1-2/3 = 3

QUESTION NO.161. If in an economy, Saving function is given by S = (-) 50 + 0.2Y and Y =RS. 2,000 crores; consumption expenditure for the economy would be Rs. 1,650 crores and the autonomous investment is Rs. 50 crores and the marginal propensity to consum is 0.8. True or false? Justify your answer with proper calculations.

Solution: Yes, all the given values are correct.

S = -50 +0.2Y or,S = -50 + .02(2,000) = -50 + 400 = Rs. 350 crores

At equilibrium level of income:Y = C or,2,000 = C + 350 or,C= 2,000-350 = 1,350 (in RS. Crores)

MPC + MPS = 1 or,MPC + 0.2 = 1 or,MPC = 1 – 0.2 = 0.8

QUESTION NO.162 Economists are generally concerned about the rising Marginal Propensity to Save (MPS) in an economy". Why?

Solution: Since the sum of MPC and MPS is unity. Any increase in Marginal propensity to Save (MPS) would directly lead to decreases in Marginal propensity to Consume (MPC). This means that lesser proportion of additional income is going to consumption, whichis a vital factor of Aggressive Demand/ Expenditure. This may further lead to fall in equilibrium level of income in the economy.

QUESTION NO.163. Assuming that 'increase' in investment in Rs. 900 crore and marginal propensity to consume is 0.6, explain the working of multiplier.

Solution: Given that I = 900 and MPC = 0.6, increase in income in the following sequence:

Increase in investment raises income of those who supply investment goods by Rs. 900. This is first round.

·Since MPC = 0.6, income earners spent Rs.540 on consumption. This raises income by Rs.540 = 900 x 0.6 in the second round.

·In the similar way, third round increase in income is 324 = 540 x 0.6.

·In this way, income goes on increasing round by round with each round increase in income equal to 60 percent of the previous round increase.

·The total increase in income is:Y = I 1/1-MPC= 900 x 1/1-0.6 = RS. 2,250 crore.

QUESTION NO.164. What is the range of value of investment multiplier? Clarify the relation of investment multiplier with marginal propensity to consume (MPC) and with marginal propensity to save (MPS).

Solution: Range of investment Multiplier = one of infinity.

Relation : if MPC rises, investment multiplier also rises, i.e. there is positive relation. However, if MPS rises, investment multiplier falls, i.e. there is inverse relation.

QUESTION NO.165 Measure the level of ex-ante aggregate demand when autonomous investment and consumption expenditure (A) is Rs.50 crores, and MPS is 0.2 and level of income (Y) is RS. 4000 crores. State whether the economy is in equilibrium or not (cite reason).

Hint: The aggregate demand (AD) function is given as : AD = A + b(Y)

Given A =50; b or MPC = 1 –MPS = 1 – 0.2 = 0.

Putting the values of A and B in AD function, we get: AD=50+0.8x4,000=RS.3250 crores

Economy is not at equilibrium as AD of RS.3250 crores is less thanY (or AS) of RS. 4000 crores.

QUESTION NO.166. If MPC is 0.6, the investment multiplier will be: **Solution:** 2.5

QUESTION NO.167. The maximum value of multiplier is —— when the value of MPC is — **Solution:** Infinity, one

QUESTION NO.168. If MPC = MPS, then value of multiplier is: **Solution:** Two

QUESTION NO.169. When economy decides to save the whole of its additional income, then value of investment multiplier will be: **Solution:** 1

QUESTION NO.170. If MPC = 1, the value of multiplier is: **Solution:** Infinity

QUESTION NO.171. If MPC = 0, the value of multiplier is: **Solution:** 1

QUESTION NO.172. MPC = 0.75 and as a result of Multiplier effect, National Income increased By Rs.300 crores by an additional investment of ———— **Solution:** Rs. 75 crores

QUESTION NO.173. If C = 20 + 0.80Y and investment Expenditure is Rs.50 crores. Then Equilibriem income is: **Solution:** Rs.350 crores

QUESTION NO.174. If MPS = 0.30, Autonomous Consumption = Rs.50 crores and investment = Rs. 100, then Equilibrium income will be: **Solution:** Rs,500crores

QUESTION NO.175. An increase of Rs. 100 Crores in investment leads to a rise of Rs. 500 crores in the national income. Calculate the value of multiplier.

Solution: Multiplie (K) = Change in income/ Change in Investment = 500 /100 = 5

QUESTION NO.176. If investment multiplier is 1, what will be the value of marginal propensity to consume?

Solution: Marginal Propensity to Consume = 0

QUESTION NO.177. What can be the minimum value of investment multiplier?

Solution: The minimum value of investment multiplier can be one. It is possible when MPc = 0

QUESTION NO.178. if Marginal propensity to save is 0.1, calculate value of multiplier.

Solution: Multiplier (k) = 1/MPS = 1/01 =10

QUESTION NO.179. What is the value of multiplier when Marginal propensity to save is zero?

Solution: Multiplier (k) = 1/MPS = 1/0 = 0

QUESTION NO.180. In a Government budget, revenue deficit is Rs.35 crores. If revenue receipts are Rs. 70 crores and capital expenditure Rs. 120 crores, then how much is the revenue expenditure.]

Solution: Revenue Deficit=Revenue Expentiture – Revenue Receipts or Rs. 35 Crores =Revenue Expenditure – Rs. 70 crores

Revenue Expenditure = Rs. 35 crores + RS.70 crores = Rs.105 crores.

QUESTION NO.181. The interest payments as per the government budget during a year are Rs.1,40,000crore. If total borrowing requirements of the government are estimated at Rs. 2,70,000crores,then how much in primary deficit.

Solution: Total borrowing requiremens of the government are estimated at Rs. 2,70,000crores. It means. Fiscal Deficit = Rs.2,70,000crores

Primary Deficit = Fiscal Deficit – Interest Payment

Primary Deficit = Rs. 2,700,000crores – Rs. 1,40,000crores = Rs. 1,30,000 crores.

QUESTION NO.182 In a government budget, primary deficit is Rs. 12,000 crores and interest payment is Rs. 7,000 crores. How much is the fiscal deficit?

Solution: Primary Deficit = Fiscal Deficit – Interest Payment or Rs. 12,000 crores = fiscal Deficit – Rs. 7,000 crores

Fiscal Deficit = Rs. 12,000 crores + Rs. 7,000 crores = Rs. 19,000 crores.

QUESTION NO.183. As per the Government budget, the interest payments are estimated at Rs. 10,000 crores, which is 40% of primary deficit. Calculate fiscal deficit?

Solution: Let, Primary Deficit = x

Interest Payment = 40% of x = 0.40x or,Rs. 10,000 crores = 0.40x

x = Rs. 10,000 crores / 0.40 = Rs, 25,000 crores

Primary Deficit = fiscal Deficit – Interest Payment

Rs. 25,000 crores = fiscal Deficit – Rs.10,000 or fiscal Deficit = Rs. 35000 crores.

QUESTION NO.184. From the following data about a Government budget, find out (a) Revenue deficit (b) fiscal deficit and (c) primary deficit:

Particulars		(Rs.Arab)
(i)	**Capital receipts net of Borrowings**	**95**
(ii)	**Revenue Expenditure**	**100**
(iii)	**Interest Payments**	**10**

(iv)	**Revenue Receipts**	**80**
(v)	**Capital Expenditure**	**110**

Solution:(a) Revenue Deficit = Revenue Expenditure – Revenue Receipts= Rs. 100 Arab – Rs. 80 Arab= Rs. 20 Arab

(b) Fiscal Deficit=(Revenue Expenditure+Capital Expentiture)–(Revenue Receipts+ Capital Receipts net of Borrowings)=(Rs.100 Arab+Rs.110 arab)-(Rs.80Arab+Rs.95 Arab)

(c) Primary Deficit = fiscal Deficit–Interest Payment =Rs. 35arab–Rs.10Arab= Rs.25 Arab

QUESTION NO.185.Find (a) fiscal Deficit and (b) Primary Deficit from the following:

Particulars	(Rs. In Crore)
(i)Revenue Expenditure	**70,000**
(ii)Borrowings	**15,000**
(iii)Revenue Receipts	**50,000**
(iv)Interest Payments	**25% of Revnue Deficit**

Solution: Revenue Deficit=Revenue Expenditure–Revenue Receipt or Revenue Deficit=Rs. 70,000 crores – Rs. 20,000 crores

Interest Payments=25% of Revenue Deficit =Rs.20,000Crores x 25/100 = Rs.5,000 crores

(a) Fiscal Deficit = Borrowings = Rs. 15,000 crores

(b) Primary Deficit = Fiscal Deficit – Interest Payment

Primary Deficit = Rs.15,000crores – 5,000 crores = Rs. 10,000 crores

QUESTION NO.186. From the given information, calculate; (a) Revenue Receipts (b) fiscal Deficit and (c) Primary Deficit:

Particulars	(Rs. In crore)
(i)Non-debt creating capital receipts	**25,000**
(ii)Revenue Deficit	**12,000**
(iii)Interest Payments	**7,000**
(iv)Revenue Expenditure	**20,000**
(v)Capital Expenditure	**35,000**

Solution:(a) Revenue Deficit = Revenue Expenditure – Revenue Receipts

or,Rs. 12,000 crores = Rs.20,000 – Rs. 12,000 crores = Rs. 8,000 crores

(b)fiscal Deficit=Revenue Deficit+(capital Expenditure–Non-dept Creating Capital Receipts)= RS. 12,000 crores + (Rs. 35,000 – Rs. 25,000 crores)= Rs. 22,000 crores

(c) Primary Deficit = fiscal Deficit – Interest Payments= Rs. 22,000 – Rs. 7,000 crores=Rs. 15,000 crores

QUESTION NO.187. In a government budget, revenue deficit is Rs.50,000crores and borrowings are Rs. 75,000 crores. The fiscal deficit will be:

Solution: Rs. 75,000 crores

QUESTION NO.188. If the value of exports of a country is Rs. 1,000 crores and the value of imports is Rs 600 crores, howmuch will be the trade balance?

Solution: Trade balance = Export – Import = 1,000 – 600 = Rs. 400 crores

QUESTION NO.189. Calculatae the value of imports when balance of trade is Rs(-)400 crores and the value of exports is Rs. 300 crores.

Solution: Balance of trade = Exports – Imports;So, Imports = Exports – Balance of trade = 300-(-)400 = 700 crores

QUESTION NO.190. An economy is in equilibrium from the following data about an economy, Calculate autonomous consumption.

(i)Income = 5,000 (ii)Marginal Propensity to save = 0.2 (iii)Investment expenditure = 800

Solution: $Y=\underline{C}+MPX(Y)+1$ or, $5{,}000=\underline{C}+(1-0.2)(5{,}000)+800$ or, $\underline{C}=5{,}000-4{,}000-800=200$

QUESTION NO.191. **Calculate (a) net domestic product at factor cost and (b) gross national disposable income.**

		(Rs. Crores)
(i)	Private final consumption expenditure	8,000
(ii)	Government final consumption expenditure	1,000
(iii)	Exports	70
(iv)	Imports	120
(v)	Consumption of fixed capital	60
(vi)	Gross domestic fixed capital formation	500
(vii)	Change in stock	100
(viii)	Factor income to abroad	40
(ix)	Factor income from abroad	90
(x)	Indirect taxes	700
(xi)	Net current transfers to abroad	(-)30
(xii)	Subsidies	50

Solution: **(a)** NDPFC = 8,000 + 1,000 + 500 + 100 + 70 – 120 – 60 -700 + 50= Rs.8,840crore

(b)GNDI = 8,840 + 60+ 700 – 50 + 90 – 40 (-30) = RS. 9,630 crore.

QUESTION NO.192. **Assuming that increase in investment is Rs.1,000crore and marginal propensity to conume is 0.9, explain the working of multiplier.**

Solution: 10000 crores

QUESTION NO.193. **An economy is in equilibrium , from the following data about an economy, calculate investment expenditure:**

(i) Income = 10,000

(ii) Marginal propensity to consume = 0.9

(iii)Autonomous consumption = 100

Solution: $Y=\underline{C}+MPC(Y)+1$ or, $10{,}000=100+.9(10{,}000)+1$ or, $1=10{,}000-100-9.000=900$

QUESTION NO.194. **Assuming that increase in investment is Rs 800 and marginal propensity to consume is 0.8, Explainthe world of multiplier.**

Solution: 4000 crores

QUESTION NO.195. **An economy is in equilibrium. From the following data, calculate autonomous consumption.(i) Income = 10,000(ii) Marginal propensity to save = 0.2(iii)Investment = 1,500**

Solution: $Y=\underline{C}+MPC(Y)+I$ or, $10{,}000=\underline{C}+(1-0.2)(10{,}000)+1{,}500$ or, $\underline{C}=10{,}000-8{,}000-1{,}500=500$

QUESTION NO.196. **Assuming that 'increase' in investment is Rs.900 crore and marginal propensity to consume is 0.6, Explain the working of multiplier.** **Solution:** 2250

QUESTION NO.197. **Calculate (a) net national product at market price and (b)gross national disposable income.**

		(Rs. Crore)
(i)	Gross domestic fixed capital formation	400
(ii)	Private final consumption expenditure	8,000
(iii)	Government final consumption expenditure	3,000
(iv)	Change in stock	50
(v)	Consumption of fixed capital	40

(vi)	**Net indirect taxes**	**100**
(vii)	**Net exports**	**-60**
(viii)	**Net factor income to abroad**	**-80**
(ix)	**Net current transfers from abroad**	**100**
(x)	**Dividend**	**100**

Solution:(a) NNPMP = 8,000 + 3,000 + 400 + 50 – 60 – 40 – (-80)= Rs. 11,430 crore
(b)GNDI = 11,430 + 40 + 100 = Rs. 11,570 crore.

QUESTION NO.198.Calculate Multiplier when MPC is 4/5 abd 1/2. From the calculations, establish the relation between size of Multiplier and size of MPC.

Solution:MPC = 1 – MPS or, MPC = 1 – 0.2 or, MPC = 0.8 or, AD = C + I or, AD = A + By
or,AD = 50 + 0.8 (300) or,AS = RS. 290 Crores
Multiplier = 1/1-MPC
When MPC = 4/5; K = 1 /1-0.8 = 1/ 0.2 = 5
When MPC = 1/2 K = 1/ 1-0.5 = 1/0.5 = 2

QUESTION NO.199. Use following information of an imaginary country:

Year	**2014 –2015**	**2015-2016**	**2016-2017**
Nominal GDP	**6.5**	**8.4**	**9**
GDP Deflator	**100**	**140**	**125**

(i)For which year is real GDP and nominal GDP same and Why?
(ii)Calculate Real GDP for the given years. Is there any year for which Real GDP falls?

Solution:(a) for the year 2014-15 as it is the base year.
(b) The Real GDP declined in the year 2015 – 2016. It could be due to high rate of inflation or price levels.

Year	**2014-2015**	**2015-2016**	**2016-2017**
Nominal GDP	6.5	8.4	9
GDP Deflator	100	140	125
Real GDP = Nominal GDP/GDP Deflaotor x 100	6.5	6	7.2