

# INTRODUCTORY MACROECONOMICS (CC-III)

## GROUP-A

Fill in the blanks.

[1 mark]

1. Stock refers to a point of time whereas flow refers to \_\_\_\_\_.
2. The state of repetitive action where opposite forces neutralize is called \_\_\_\_\_.
3.  $GNP$  \_\_\_\_\_  $=GDP$ .
4. National income at constant price is called \_\_\_\_\_.
5. Personal income -- \_\_\_\_\_ = Disposable income.
6. Is old age Pension a part of national income under income method?
7. In a 3 sector circular flow, 3 sectors are household, firm and \_\_\_\_\_.
8. A 500 rupees note is an example of \_\_\_\_\_. (Token money/standard money).
9. Cash transaction approach of quantity theory of has been advocated by \_\_\_\_\_.
10. During inflation \_\_\_\_\_ (debtor/creditor) is the gainer.
11. Inflation with stagnation is called \_\_\_\_\_.
12. Supply creates its own demand has been propounded by \_\_\_\_\_.
13. MPC and multiplier are \_\_\_\_\_ (direct/inversely) related.
14. At breakeven point saving is equal to \_\_\_\_\_.
15. The point of intersection between ADF and ASF is called \_\_\_\_\_.

Ans. 1. Period of time, 2. equilibrium, 3. Minus NFIA, 4. Real national income, 5. direct taxes and fines and penalties, 6. No, Because it is a transfer payment, 7. Govt. 8. Token Money, 9. Irving Fisher, 10. Debtor, 11. Stagflation, 12. J B Say, 13. Inversely, 14. Zero, 15. Effective demand.

## GROUP-B

Very short answer questions.

[2 marks]

1. Write two limitations of macro economics.
2. Differentiate between micro and macro economics.
3. Write two precautions the estimation of national income.
4. Write two limitations of Say's law of market.
5. What are the components of aggregate demand?

### GROUP-C

1. Differentiate between inflation and deflation.
2. Differentiate between aggregate demand and aggregate supply.
3. GDP and GNP.
4. Equilibrium and disequilibrium.
5. National income and economic welfare

### GROUP-D

1. Analyze the simple investment multiplier.
2. Discuss Keynesian income determination in a 2 sector model.
3. Suggest anti-inflationary measures.
4. Discuss income method of measuring national income.
5. 'Inflation is unjust, deflation is inexpedient "out of the two deflation is the worst discuss.

MATHEMATICAL METHODS FOR ECONOMICS II (CC-IV)

GROUP-A

Fill in the blanks.

[1 mark]

1. What is the area bounded by  $x=e^y$ .
2. Using integration, the area of the region bounded between the lines  $x=2$  and  $x=1$ ,  
The curve  $y=x^2$  is?
3. If  $y= e^{2x}$  then  $dy/dx$  is \_\_\_\_\_.
4. Integrate  $xe^x dx$  is given by \_\_\_\_\_.
5. Find the first order partial derivatives for  $z=(x+y)^2$ .
6. Which condition is satisfying for economic viability and technological feasibility of Leontief static system?
7. The linearly homogeneous function is satisfying which theorem\_\_\_\_\_.
8. When total product will get exhausted if each factor is paid according to its marginal product this well known property is called\_\_\_\_\_.
9. For obtaining extreme values of functions involving two or more variables we use \_\_\_\_\_.
10. Let  $f(x) = x+x^{-1}$  then: find out  $f(x)$  is maximum or minimum.

Ans:(1) (2)  $7/3$ (3)  $2e^{2x}$ (4)  $e^x(x-1)$  (5)  $2x+2y$  (6) Hawkins-Simon condition (7) Eulers theorem (8) Product exhaustive theorem (9) Boarder Hessian determinant (10)

GROUP-B

Very short questions.

[2 marks]

1. A seller fixed the demand curve,  $p(x) = 200-3x$  where  $x$  is quantity and  $p$  is price. The fixed cost is 25 Rs. and the variable cost is Rs 2 per unit. What is the profit maximizing level of output?
2. Find out the derivative for the inverse of the function  $Q=20-2P$ .
3. Find out the derivative of the following implicit function.

$$7x^2-y=0$$

4. Find the determinant of  $|A|$  matrix.

$$A = \begin{pmatrix} 9 & 13 \\ 15 & 18 \end{pmatrix}$$

5. Integrate the following function with respect to x.  
 $1+x/x^{1/2}$
6. Find the partial derivative of 2<sup>nd</sup> order of  $u=2x^2+4xy+5y^2$ .
7. If  $z=\log(x^2+y^2)$ , show that  $\partial^2z/\partial x^2+\partial^2z/\partial y^2=0$ .
8. If  $u=x^2+2xy+y^2$ , show that  $\partial^2u/\partial y\partial x=\partial^2u/\partial x\partial y$ .
9. The demand function for two commodities are given as  $x_1 = -p_1/p_2^2$  and  $x_2 = p_1^2/p_2$  where  $p_1$  and  $p_2$  are prices and  $x_1$  and  $x_2$  denote the quantities of the two commodities respectively. Show that two commodities are substitute for one another.
10. Find the partial elasticities  $z=x^2e^y$ .

### GROUP-C

Short questions

[3 marks]

1. Obtain the differential of  $z=(x+y)(x-y)$  by logarithmic differentiation and check by differentiating  $z=x^2-y^2$ .
2.  $\int (ax^2+bx+c) dx$ .
3. The area under the curve between ordinates at  $x=0$  and  $x=3$  is  $\int (x^2+3x+2)dx$ .
4. Find out the  $MP_L$  and  $MP_K$  of the given Coob Douglas production function.

$$Q=AL^\alpha K^\beta$$

5. Solve the pair linear equation  $2x-y=2, 3y=2z=16$  and  $3z=5x=21$  by graphical methods.
6. Find the differential  $dy$  for the function  $y=7x^3-5x^2+6x-3$ .
7. Find the total differential of:  $z=x/x+y$
8. Find the total differential of:  $z=x/\sqrt{1+x}$ .
9. Solve the equation:  $y(1-x)-x dy/dx=0$ .
10. Find the value of integration.

$$\int e^x \log x dx$$

11. Given the demand function  $p=42-5q-q^2$ . Assuming that the equilibrium price is 6, then what will be the consumer surplus.
12. Given  $MR = 60-2Q-2Q^2$ . Find the TR function and demand function  $P=f(Q)$ .
13. With  $C=f(Y)$ , given  $MC=0.8$  and consumption is 40 when income is zero find the consumption function.

- 14.20. Find the integral for  $y=f(\tan x^2-3)dx$ , given the boundary condition  $y=21$  when  $x= 1$ .
15. Show that the curve  $y= (a/x-b)-c$  is downward sloping and convex from below.

GROUP-D

Long questions

[7 marks]

1. Given the demand function  $p= (9-q)^{1/2}$ , find the level of output at which total revenue is maximum and also find the maximum revenue.
2. Determine  $x$  and  $y$  which maximizes the utility function:  $U=x^2y^2$  subject to the budget constraint  $x+4y=10$
3. Discuss the conditions for maximum and minimum values of a function and find the extreme value of the following function:

$$y=x^4-14x^2+24x+9$$

4. Find the first and second order total differentials of  $Z=3x^2+xy-2y^2$   $u=\log(x^2-2y)$
5. What do you mean by concave and convex functions? Is the curve  $y=12-24x-15x^2-2x^3$  concave downward at  $x=1$