2023

ECONOMICS — HONOURS

Paper : CC-6

(Intermediate Macroeconomics - I)

Full Marks : 65

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

Group - A

1. Answer *any ten* questions :   2×10

    (a) Do you think that the value of the Balanced Budget Multiplier may be unity in IS – LM framework?

    (b) Discuss the effectiveness of monetary policy if interest elasticity of demand is high.

    (c) What is involuntary unemployment?

    (d) Discuss any two tenets of monetarism.

    (e) What is budget deficit?

    (f) What is mark up inflation?

    (g) What do points off the IS curve imply?

    (h) What do you understand by the concept of 'Crowding out'?

    (i) Define the concept of 'M_3' in money supply.

    (j) Discuss in brief the concept of 'Disinflation'.

    (k) What is the difference between Statutory liquidity ratio and Variable reserve ratio?

    (l) What is stagflation?

    (m) State two major differences between the Keynesian system and Classical system.

    (n) What is wage rigidity?

    (o) Explain briefly what you understand by the concept of 'Balance Sheet of Reserve Bank of India'.

Group - B

2. Answer *any three* questions :   5×3

    (a) Obtain the equilibrium values of Y and r for the following economy :

    $C = 60 + 0.8\ Y_d$

    $I = 150 - 10\ r$ $G = 250$ $T = 200$

    $P = 1$, $M^s = 100$

    $$\frac{M^d}{P} = 40 + 0.1\ Y - 10\ r.$$

Please Turn Over

(b) Do you think Friedman's version of Quantity Theory is an improvement over the classical one?

(c) What is the effect of interest sensitivity of money supply on slope of LM curve?

(d) Do you think an increase in Government expenditure has a smaller effect on income in ISLM model than in SKM?

(e) Distinguish between demand pull and cost push inflation.

Group - C

Answer *any three* questions.

3. Derive the money multiplier and explain what happens when there is a rise in high powered money.

7+3

4. What is unemployment equilibrium? Explain briefly the possible causes of unemployment equilibrium. In this context do you think that Real Balance Effect is a possible solution to the problem of unemployment equilibrium? Explain with reasons.

3+3+4

5. What is the difference between 'adaptive expectations' and 'national expectation'? What is the role of the Central Bank in controlling inflation and for it what policy measures can the Central Bank of a country undertake?

5+5

6. Explain with reasons if each of the following statements is true or false :

(a) If investment does not depend on the interest rate, IS curve is vertical.

(b) If money demand does not depend on the interest rate, LM curve is vertical.

(c) If money demand does not depend on income, LM curve is vertical.

(d) If money demand is extremely sensitive to interest rate, LM curve is vertical.

2+2+3+3

7. How is the Phillips curve related to aggregate supply? Define the concept of M_1, M_2, M_4 with special reference to India.

6+4

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2023

ECONOMICS — HONOURS

Paper : CC-5

(Intermediate Microeconomics-I)

Full Marks : 65

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words
as far as practicable.

Group - A

1. Answer *any ten* questions :

    (a) What do you mean by fair gamble? 2

    (b) What does it mean to say that a person is risk averse? 2

    (c) In the short-run if the price of the fixed factor of a competitive firm rises, what will happen to (i) Price of the good, (ii) Profit? 1+1

    (d) If a firm has Increasing Returns to Scale, what would happen to its profit if price of its product remains fixed and if doubles its scale of operation? Justify your answer. 2

    (e) Graph the total revenue curve of a competitive firm, price being ₹ 5. 2

    (f) Show that for a competitive firm $P = AR = MR$. 2

    (g) What does the rectangle under Average Fixed Cost curve represent at any level of output? Does the area increase with the level of output? Justify your answer. 1+1

    (h) State whether the following statements are true or false :

        (i) Average fixed cost increases with output.

        (ii) Average cost can never rise while marginal cost is declining. 1+1

    (i) The Technical Rate of Substitution between factors x_1 and x_2 is (–4). If you desire to produce the same amount of output but cut your use of x_1 by 3 units, how many more units of x_2 will you need? 2

    (j) In a competitive market establish the relationship between MRP_L and VMP_L. 2

    (k) Suppose that a cost minimising firm uses two inputs K and L which are perfect substitutes. If the wage is twice that of the rental rate, find the optimal input combination. 2

    (l) If the elasticity of supply is zero, what will be the amount of economic rent? 2

    (m) Suppose the expenditure of a family in period-1 is ₹ 8,00,000 and that in period-2 is ₹ 9,80,000. If the Pasche price index is 1.415, what is the consumer better-off or worse-off in period-2? 2

Please Turn Over

(n) A small cookie company, whose only variable input is labour, finds that the average worker can produce 50 cookies per day. The cost of average worker is ₹ 150 per day and the price of the cookie is ₹ 2.50. Is the company maximising its profit? Justify your answer. 2

(o) Let the labour supply function is given by $L^s = -10 + 2W$, if wage = 45 units, find the economic rent. 2

Group - B

2. Answer *any three* questions : 5×3

(a) Discuss the implications of the violation of Weak Axiom of Revealed Preference in terms of indifference curves.

(b) Under what conditions will the long-run industry supply curve be negatively sloped, though every firm in the industry has a rising marginal cost curve?

(c) Is there any compatibility of increasing returns to scale and a competitive firm?

(d) How does the shape of a Total Variable Cost curve (TVC) depend on the Law of Variable Proportion?

(e) Show that when labour is the only variable input the condition that the marginal revenue product of labour equals wages follows from profit maximization in a competitive market.

Group - C

Answer *any three* questions.

3. (a) The utility obtained by an individual from a certain wealth of ₹ 50,000 is same as his expected utility from investing the wealth in the capital market. If there is 50% probability of getting a return of ₹ 75,000 and 50% probability of getting a return of ₹ 30,000 from the investment project, what is his risk premium? Comment on the attitude towards risk of this person.

(b) A person's utility from wealth is given by : $U(w) = \sqrt{w}$. The person holds an initial asset of ₹ 50. She can accept a gamble where she wins ₹ 31 with probability $\frac{2}{3}$ and lose ₹ 14 with probability $\frac{1}{3}$.

(i) What is her expected utility from the gamble?

(ii) What is her expected pay-off from the gamble?

(iii) Will she accept the gamble?

4. (a) Suppose a consumer survives of just two time periods 1 and 2. She earns income M_1 and M_2 in (4+1)+(3+1+1) the two periods and consumes C_1 and C_2. The consumer can reallocate consumption between the two periods by saving or borrowing and the market rate of interest is r.

(i) What is the present value of her lifetime income?

(ii) Draw the intertemporal budget line of the consumer.

(b) A person faces two income streams A and B which generates income according to the following income schedule :

	Today	First Year	Second Year
Payment Stream A	₹ 100	₹ 100	₹ 0
Payment Stream B	₹ 20	₹ 100	₹ 100

Which income stream will he prefer if the interest rate is 15 percent per annum and why?

(2+3)+(1+4)

5. (a) The production function for a gadget is $Q = 100.L^{\frac{1}{2}}.K^{\frac{1}{2}}$, where Q is the total output, L is the quantity of labour employed and K is the quantity of capital in place.
Calculate the Total, Average and Marginal productivity for fourth and ninth unit of labour if the capital is fixed at 3600 units.

(b) Explain why a profit maximising firm producing with just one variable factor will produce only in stage II.   6+4

6. (a) A cost function is given by : $C = Y^2 + 1$.

(i) Draw the Average Variable Cost curve and the Marginal Cost curves.

(ii) Determine the level of output where Average Cost is minimum.

(iii) Also find the minimum value of Average Cost.

(b) Is it better for a profit maximising firm to produce output even though it is losing money? If so, when?   (2+2+1)+5

7. (a) A perfectly competitive firm faces a price of ₹ 4 and its total cost function is given by

$$C = Q^3 - 7Q^2 + 12Q + 5$$

(i) Determine the profit maximising level of output.

(ii) Find the total profit of the firm at this level.

(b) If the long-run cost function is given by $C(Y) = 10Y^2 + 1000$,

(i) Determine the long-run equilibrium price.

(ii) Also derive the supply curve of the firm.   (2+3)+(2½+2½)

2023

ECONOMICS — HONOURS

Paper : CC-7

(Statistical Methods for Economics)

Full Marks : 65

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

Group - A

1. Answer *any ten* questions :   2×10

   (a) A discrete variable can take only integral values. — Is it a correct statement? Justify with the help of an example.

   (b) Show that HM can never be greater than AM.

   (c) For the following frequency distribution AM is 47.17. Find the missing frequency.

Class Internal	Frequency
31–40	2
41–50	?
51–60	4

   (d) A study on B.Sc. Economics (Hons.) Examination results of 1000 students in 2010 gave that average marks secured as 50% with a standard deviation of 3. A similar study in 2020 revealed average marks secured and standard deviation as 55% and 5 respectively. Have the results improved over the decade?

   (e) In a bivariate model if the two regression coefficients are (–1.6) and (–0.4), then find the correlation coefficient between the variables.

   (f) Let $A_1, A_2, ..., A_n$ be n mutually exclusive events. Consider another event B dependent on A_i's. Show that $A_1 \cap B, A_2 \cap B, ..., A_n \cap B$ are also mutually exclusive.

   (g) Set up a numerical problem where the Bayes' theorem will be applicable for solving.

   (h) The letters of the word TRIANGLE are arranged at random. Find the probability that the word so formed (i) starts with T (ii) starts with T and ends with E.

   (i) For a binomial distribution mean is 3 and standard deviation is $\sqrt{2}$. Find the values of n and p.

   (j) The probability that a Poisson variate X takes a positive value is $1 - e^{-2}$. Find mean and mode of X.

   (k) If a random variable X follows a normal distribution with a mean of 30 and variance of 25, then find the point(s) of inflection of X.

Please Turn Over

(l) If a simple random sample of size 4 is drawn without replacement from a population of size 40 where the variance of the population is 25, then find the standard error of sample mean.

(m) What do you mean by a maximum likelihood estimator?

(n) What is meant by power of a test?

(o) What do you mean by multi-stage sampling?

Group - B

2. Answer *any three* questions :

(a) Using an example clarify what you mean by a relative measure of dispersion. When is it used?

2+3

(b) Evaluate simple correlation coefficient as a measure of association between two variables.　5

(c) State and prove the theorem of total probability for three events.　5

(d) Find out the moment generating function about origin for binomial distribution. Also find the mean and standard deviation of the distribution.

2+3

(e) Argue whether the following statement is true or false :

If H_0 is accepted at $\alpha_1\%$ level of significance, then it will definitely be accepted at $\alpha_2\%$ level of significance, where $\alpha_1 < \alpha_2$.

5

Group - C

Answer *any three* questions.

3. (a) Examine the validity of the following statement :

The standard deviation of a variable measured in inches is less than the standard deviation of the variable measured in feet.

(b) Heights (X, in inches) and weights (Y, in kg) of 5 persons are given below :

X : 　64　60　67　59　69

Y : 　57　60　73　62　68

Determine the nature of relationship between height and weight. If, by a defect in weighing machine, weights are recorded by 2 kg more than the true weight, then indicate the change in the result.

4+(5+1)

4. (a) A variable takes only two distinct values a and b, each with equal frequency. Find second, third and fourth central moments.

(b) The SD of a symmetric distribution is 5. What must be the value of the fourth moment about the mean in order that the distribution to be leptokurtic, mesokurtic and platykurtic?　6+4

5. (a) Consider the sample space $S = \{e_1, e_2, e_3, e_4\}$. Define the events, $A = \{e_1, e_2\}$, $B = (e_2, e_3)$, $C = \{e_3, e_1\}$.

   (i) Are A, B, C pairwise independent?

   (ii) Are they mutually independent?

   (iii) What conclusion can you draw from the answers to (i) and (ii)?

   (b) If the standard error of the sample mean for SRSWR is twice that for SRSWOR, show that $4n = 3N + 1$; where n and N denote the sample size and population size respectively.

   (2+2+1)+5

6. (a) Show that the following function is a probability density function.

   $$f(x) = \left(5/\sqrt{\pi}\right)e^{-25x^2}, -\infty < x < \infty$$

   (b) The mean of a normal distribution is 60 and 6% of the values are greater than 70. Find the standard deviation of this distribution. [Given that the area under the standard normal curve between $Z = 0$ and $Z = 1.56$ is 0.44.]   5+5

7. (a) If $E(T_1) = \theta_1 + 3\theta_2$ and $E(T_2) = 3\theta_1 - \theta_2$, then find an unbiased estimator of θ_1.

   (b) A random sample of 10 students of a college who are engaged in WhatsApp is selected and the hours per day that each of them is engaged is determined. The data are as follows :

   9, 8, 7, 4, 8, 6, 8, 8, 7, 10.

   Is it reasonable to accept that on average the students of the college are engaged in WhatsApp for more than 7 hours per day at 5 per cent level of significance? [Assume that the data follow normal distribution. Given that $t_{0.05,9} = 1.833$, $t_{0.025,9} = 2.262$, $t_{0.05,10} = 1.812$, $t_{0.025,10} = 2.228$]

   4+6

2023

ECONOMICS — HONOURS

Paper : SEC-A-1 and SEC-A-2

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

Paper : SEC-A-1

(Data Analysis)

Full Marks : 80

Group - A

Answer *any ten* questions. 2×10

1. What do you mean by Population?

2. What do you mean by Attribute?

3. What is the difference between Observed Value and True Value?

4. Mention two primary features of a good Questionnaire.

5. Briefly explain the concept of Complex Tabulation.

6. What do you mean by Unbiased Sample Survey?

7. Mention two basic advantages of a Sample Survey over Complete Enumeration.

8. Write the primary objective of Post Enumeration Survey.

9. What do you mean by Coverage Error in Census? What is the amount of Coverage Error in 2011 Census?

10. What is Modified Mixed Reference Period MPCE in NSS data?

11. Define Gram Products according to NSS.

12. What do you mean by Consistent Estimator?

13. Write the formula of Mode for Group Data.

14. Write down the formula of Bowley's Coefficient of Skewness.

15. Mention the name of two popular Statistical Packages. Give a reason for the popularity of each package.

Please Turn Over

Group - B

Answer *any four* questions.

16. Describe the classification of Statistical Data on the bases of their sources. 5

17. What is Ratio Chart? Briefly point out its advantages over a simple Line Diagram. 2½+2½

18. Describe step by step the method of calculation of Summary Statistics of a variable in any one of the packages given below.

    STATA, R, SPSS, Eviews, MS-Excel. 5

19. Discuss something about the Law of Statistical Regularity. 5

20. Examine whether the following variables are Discrete or Continuous : 5

    (a) Monthly Income Data of a Ola Driver

    (b) Size of Land Holding

    (c) Size of Family

    (d) Temperature of a Car Radiator

    (e) Ex-factory Output of a Production Unit.

21. What are the components of Capital Account under the External Transaction Account Categories? 5

Group - C

Answer *any four* questions.

22. Describe the different methods of collection of Numerical Data and state their relative merits and defects. 5+5

23. Explain clearly the distinction between the Natural Scale and the Logarithmic Scale used in graphical presentation of data. 10

24. What is meant by Stratified Random Sampling? Explain the procedure and advantages of Stratification. 5+5

25. What are the objectives of Consumer Expenditure Survey of NSS? Briefly discuss about Sample Size at First Stage and Second Stage Units of NSS 68th Round Data. 6+4

26. Discuss something about New Consumer Price Index (Combined) which is adopted by Central Bank as the Key Measures of Inflation. Do you think this New Consumer Price Index (Combined) is more suitable for measuring inflation in terms of all policy purposes than Wholesale Price Index (WPI)? 7+3

27. Write short notes on *any two* : 5×2

    (a) Panel Data

    (b) Use of Box Plot

    (c) Sample Design of NSS 68th Round

    (d) Cost of Living Index.

Paper : SEC-A-2

(Rural Development)

Full Marks : 80

Group - A

1. Answer *any ten* questions : 2×10
   (a) What are non-governmental organizations (NGOs)?
   (b) State two major functions of the National Bank for Agriculture and Rural Development (NABARD).
   (c) What are Self-Help Groups (SHGs)?
   (d) What is subsistence farming?
   (e) What is Participatory Rural Appraisal (PRA)?
   (f) What is decentralized planning?
   (g) When was the Pradhan Mantri Gram Sadak Yojana (PMGSY) launched?
   (h) Mention two important factors contributing to the persistence of child labour in India.
   (i) What are the main functions of Land Development Banks?
   (j) What are Regional Rural Banks (RRBs)?
   (k) What are rural micro-enterprises?
   (l) Mention two important components of the plan of action under National Rural Health Mission (NRHM).
   (m) State the core values of rural development.
   (n) What are the two criteria on the basis of which demarcation between rural and urban areas is generally made?
   (o) Mention two major objectives of the Mid-day Meal Scheme (MDMS) in India.

Group - B

2. Write short notes on *any four* of the following : 5×4
   (a) School dropouts of rural India.
   (b) Lending policy of the Grameen Bank
   (c) Role of rural districts in rural development
   (d) Difference between Rural Development and Agricultural development
   (e) Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)
   (f) NGOs as agents of rural development.

Please Turn Over

Group - C

Answer *any four* questions.

3. Analyse the role of the rural non-farm sector in the generation of employment in rural India. What important changes have taken place in the pattern of rural non-farm employment in India?   6+4

4. Discuss some of the major problems of rural industrialization in India.   10

5. Explain the role played by Self-Help Groups (SHGs) in promoting rural development in India.   10

6. Discuss the role of Panchayats in fostering rural development in West Bengal.   10

7. Critically evaluate the following rural development programmes :   5+5

   (a) Swarnajayanti Gram Swarojgar Yojana (SGSY)

   (b) National Rural Livelihood Mission (NRLM).

8. Analyse the major constraints faced by microenterpises in rural India.   10

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