PUMDET-2019

Subject : APPLIED ECONOMICS

(Booklet Number)

Duration : 90 Minutes **Full Marks : 100**

INSTRUCTIONS

1. All questions are of objective type having four answer options for each. Only one option is correct. Correct answer will carry full marks 2. In case of incorrect answer or any combination of more than one answer, ½ mark will be deducted.
2. Questions must be answered on OMR sheet by darkening the appropriate bubble marked A, B, C or D.
3. Use only **Black/Blue ball point pen** to mark the answer by complete filling up of the respective bubbles.
4. Mark the answers only in the space provided. Do not make any stray mark on the OMR.
5. Write question booklet number and your roll number carefully in the specified locations of the **OMR**. Also fill appropriate bubbles.
6. Write your name (in block letter), name of the examination centre and put your full signature in appropriate boxes in the OMR.
7. The OMR is liable to become invalid if there is any mistake in filling the correct bubbles for question booklet number, roll number or if there is any discrepancy in the name/signature of the candidate, name of the examination centre. The OMR may also become invalid due to folding or putting stray marks on it or any damage to it. The consequence of such invalidation due to incorrect marking or careless handling by the candidate will be sole responsibility of candidate.
8. Candidates are not allowed to carry any written or printed material, calculator, pen, docu-pen, log table, wristwatch, any communication device like mobile phones etc. inside the examination hall. Any candidate found with such items will be **reported against** and his/her candidature will be summarily cancelled.
9. Rough work must be done on the question paper itself. Additional blank pages are given in the question paper for rough work.
10. Hand over the OMR to the invigilator before leaving the Examination Hall.

APPLIED ECONOMICS

1. Does the law of diminishing marginal utility hold for both the goods X and Y in the utility function, $U = X^{0.6} Y^{0.8}$?

   (A) Yes (B) No

   (C) Holds partially (D) Cannot be ascertained.

2. A firm produces 220 units of an item which costs an average of $ 8.25 each to produce and sells them at a price of $ 9.95. What is the profit ?

   (A) $ 375 (B) $ 84

   (C) $ 374 (D) $ 394

3. For the non-linear demand function, $P = 194.4 - 0.2\ Q^2$, what will be the value of quantity demanded when TR is maximum ?

   (A) 16 (B) 17

   (C) 18 (D) 19

4. A firm operates with the production function, $Q = 4K^{0.5}L^{0.5}$ and can buy K at ₹ 15 a unit and L at ₹ 8 a unit. What input combination will minimise the cost of producing 200 units of output ?

   (A) K = 28.6, L = 44.7 (B) K = 25.5, L = 30.5

   (C) K = 26.5, L = 31.5 (D) K = 28.6, L = 44.5

5. A firm uses three inputs K, L and R to manufacture its final product. Their prices per unit are $ 20, $ 4 and $ 2 respectively. If the other two inputs are held fixed, then the marginal product functions are

   $MP_K = 200 - 5K$

   $MP_L = 60 - 2L$

   $MP_R = 80 - R$

   What combination of inputs should the firm use to maximize the output if it has fixed budget of $ 390 ?

   (A) K = 10, L = 15, R = 65 (B) K = 12, L = 15, R = 65

   (C) K = 10, L = 12, R = 60 (D) K = 12, L = 15, R = 60

11. The consumption of natural mineral resource M has risen from 38 million tons per annum to 68.4 million tons per annum over the last 12 years. If it is assumed that the growth in the consumption has been continuous, what is the annual (percentage) rate of growth ?

(A) 4.7
(B) 4.8
(C) 4.9
(D) 5.0

12. When the demand curve is linear and downward sloping, for all positive quantities, the marginal revenue is

(A) equal to price
(B) greater than price
(C) less than price
(D) non-linear

13. Assuming fixed prices, which of the following statements are true ?

i. Monetary policy is more effective, flatter the IS curve.
ii. Fiscal policy is less effective, flatter the LM curve.
iii. Fiscal policy is more effective, flatter the LM curve.
iv. Monetary policy is ineffective and fiscal policy is fully effective in liquidity trap.

Choose the correct option :

(A) i, ii and iv
(B) i, iii and iv
(C) ii, iii and iv
(D) Only ii

14. Fiscal deficit less interest payment is called

(A) net fiscal deficit
(B) monetised deficit
(C) primary deficit
(D) budgetary deficit

15. The present value of a payment of £1 due in 8 years' time is given by the formula $PV = 1/(1+i)^8$, where 'i' is the given interest rate. What is the ratio of change of PV with respect to 'i' ?

(A) $-8/(1+i)^8$
(B) $-8/(1-i)^8$
(C) $-8/(1+i)^9$
(D) $-8/(1-i)^9$

16. There are 12 white balls, 8 red balls and 5 green balls in a basket. What is the probability that a ball drawn randomly is either red or white ?

(A) 12/25
(B) 8/25
(C) 20/25
(D) 15/25

23. For the demand function $P = 10 - 3x - x^2$, what is the consumers' surplus at $x = 3$?

(A) 16.25
(B) 20.50
(C) 7.50
(D) 12.50

24. The optimum capital stock is achieved when the user cost of capital is equal to

(A) the interest rate
(B) the depreciation rate
(C) the marginal product of capital
(D) Tobin's Q

25. A bag contains 8 white and 6 black balls. If 5 balls are drawn at random, what is the probability that 3 are white and 2 are black ?

(A) 6/143
(B) 60/143
(C) 6/286
(D) 60/286

26. If 'X' is distributed normally, then Σx^2 follows

(A) 't' distribution
(B) X^2 distribution
(C) F distribution
(D) Poisson distribution

27. A simple random sample of size 5 is drawn without replacement from a finite population consisting of 41 units. If the population is 6.25, what is the standard error of sample mean ?

(A) 2.85
(B) 3.85
(C) 2.65
(D) 3.80

28. It has been found that 2% of the tools produced by a certain machine are defective. What is the probability that in a shipment of 400 such tools, 3% or more will be defective ? (The probability that normal deviate lies between 0 and 1.43 is 0.4236)

(A) 0.0764
(B) 0.00764
(C) 0.764
(D) 0.467

35. To draw a Lorenz curve showing the distribution on income by households, one should first rank all households according to

(A) household size
(B) age of the head of household
(C) wage level
(D) income per capita

36. An irrigation project pays ₹ 60 per month to unskilled workers who otherwise would be earning ₹ 35 per month. The opportunity cost of labour (per worker on the project) is

(A) ₹ 60
(B) ₹ 95
(C) ₹ 25
(D) ₹ 35

37. If everyone in a country had the same level of income, then the value of the Gini concentration ratio would be

(A) 1.0
(B) 0.0
(C) 0.5
(D) infinity

38. In general, a perfectly competitive firm's short-run supply curve is the rising portion of the

(A) MC curve
(B) AVC curve
(C) ATC curve
(D) MC curve above the minimum point of AVC curve

39. In long-run equilibrium, a perfectly competitive firm

(A) earns economic profit
(B) produces at rising portion of average cost
(C) produces where price is not equal to MC
(D) produces where price is equal to MC

40. An investor puts ₹ 20,000 into a deposit account and has the annual interest paid directly into a separate current account and then spends it. The deposit account pays 8.5% interest. How much interest is earned in the fifth year ?

(A) ₹ 1,000
(B) ₹ 1,200
(C) ₹ 1,500
(D) ₹ 1,700

46. If the mean and variance of a given distribution is 8 and 0.25, then the coefficient of variation will be

(A) 4%
(B) 8%
(C) 12%
(D) 16%

47. Which of the following assumptions are required to show the consistency, unbiasedness and efficiency of the OLS estimates ?

(i) $E(v_t) = 0$

(ii) $Var\ (v_t) = \sigma^2$

(iii) $Cov(v_t, v_{t-j}) = 0$ for all values of $j \neq 0$

(iv) $v_t \sim N(0, \sigma^2)$

Choose the correct option :

(A) (ii) and (iv)
(B) (i) and (iii)
(C) (i), (ii) and (iii)
(D) (i), (ii), (iii) and (iv)

48. What will be the consequences for the OLS estimator if heteroscedasticity is present in a regression model, but ignored ?

(A) It will be biased.
(B) It will be inconsistent.
(C) It will be inefficient.
(D) It will be different.

49. The Government of India has established NITI Aayog to replace the

(A) Human Rights Commission
(B) Finance Committee
(C) Law Commission
(D) Planning Commission

50. Which of the Five Year Plans has laid emphasis on 'faster sustainable and inclusive growth' ?

(A) Eleventh Five Year Plan
(B) Twelfth Five Year Plan
(C) Tenth Five Year Plan
(D) Ninth Five Year Plan