# UNIVERSITY OF CALICUT

## SCHOOL OF DISTANCE EDUCATION

## BA ECONOMICS

Complimentary Course

## III SEMESTER

# *MATHEMATICAL TOOLS FOR ECONOMICS-II*

ECO4(3) C04

**Multiple Choice Questions**

1. Regression analysis is concerned with ----------relationship among variables

    A Statistical    B Functional

    B Deterministic    D None of the above

2. Statistical relationships assumes that variables are

    A Random    B Stochastic

    C All of the above    D None of the above

3. Stochastic variables are those having

    A Probability distribution    B Indexation

    C Correlation    C Causation

4. A statistical relationship per say cannot logically imply

    A Regression    B Causation

    C Error    D Random

5. If marginal revenue is Rs.25/- and elasticity of demand w.r.t price is 2, then the average revenue is

    A. 50    B. 25

    C. 75    D. 100

6. Cost is a function of ___________

    A. price    B. revenue

    C. quantity    D. none of these

7. An example of fixed inputs of production is __________

   A. land    B. organisation

   C. both a and b    D. none of these

8. Total variable cost plus total fixed cost gives

   A. total cost    B. average cost

   C. marginal cost    D. none of these

9. Marginal cost of a function c = f(g) is _____________

   A. dc/dq    B. f'(q)

   C. both a and b    D. none of these

10. The ratio of total cost to the quantity produced is called

   A. average cost    B. marginal cost

   C. total variable cost    D. None

11. The elasticity of demand $_d$ in terms of AR and MR is

   A. $\frac{AR-MR}{AR}$    B. $\frac{AR-MR}{MR}$

   C. $\frac{MR}{AR-MR}$    D. $\frac{AR}{AR-MR}$

12. When demand is unitary elastic, then

   A. $_d$ = 1,MR = 0    B. $_d$ = 0,MR = 1

   C. $_d$ = -1,MR = 0    D. $_d$ = 0,MR = -1

13. Sum of explicit cost and implicit cost gives:

   A. total cost    B. average cost

   C. marginal cost    D. none of these

14. For a unitary elastic supply curve, $_p^s$ is

   A. less than 1    B. more than 1

   C. equal to 1    D. zero

15. When $|e_p| < 1$, the demand is

   A. elastic    B. inelastic

   C. unitarily elastic    D. none

16. Cross price elasticity may not always be

   A. symmetrical    B. asymmetrical

   C. both a and b    D. none

17. Luxury goods are:

   A. price inelastic    B. price elastic

   C. both a and b    D. none

18. If close substitutes are available, then the elasticity of demand will be
    - A. low  B. moderate
    - C. high  D. optimum
19. The relationship between supply and price is
    - A. negative  B. Perfect
    - C. positive  D. None
20. The relationship between demand and price is
    - A. positive  B. negative
    - C. perfect  D. none
21. A given percentage change in price results in an equal percentage change in sales, indicates:
    - A. unitary price elasticity  B. inelastic price elasticity
    - C. elastic price elasticity  D. none
22. What is the order of differential equation $= 10x + 5$
    - A. First  B. Second
    - C. third  D. Fourth
23. A line for linear equation should begin from
    - A. Origin  B. X axis  C. Y axis  D. Any of the above
24. Iso quants are downward sloping and________ to the origin
    - A. Convex  B. Concave
    - C. Vertical  D. Horizontal
25. Functional relationship between input and output is called
    - A. Isoquants
    - B. Isocost
    - C. Input function
    - D. Production function
26. Law of variable proportion explains for
    - A. Short run  B. long run  C. medium run  D. none
27. In CES production function, the elasticity of substitution is
    - A. Unity  C. Negative
    - B. Zero  D. Constant
28. The highest power to which the derivative of highest order is raised in differential equation is called.
    - A. Trace  B. Order  C. Degree  D. Transpose
29. TR – TC is also known as
    - A. Revenue  C. cost
    - B. Profit  D. none

30. Demand function Q = f(P), the variable P denotes

A. Product C. price
B. Production D. profit

31. What is the order of differential equation $\frac{dy}{dt} = 10x + 5$

A.First C. third
B.Second D. fourth

32. The order of differential equation is the order of …….

A. Derivative C. exponent
B. Highest derivative D. factors

33. MRTS is the slope of

A. Production function B. Priceline

C. isocostline D. isoquant

34. Second stage in return to scale is called

A. Increasing returns
B. Diminishing returns
C. Constant returns
D. Negative returns

35. Slope of Total product Curve is called

A.MP B.AP C.TC D.MC

36. For a function y=f(x), $x_1 \geq x_2$ $f(x_1) \geq f(x_2)$ says that the function is

A. increasing B. decreasing

C. constant D. None of these

37. The points at which a curve is neither increasing not decreasing is called

A. turning point B. stationery points
C. both a and b D. None of these

38. The ratio of capital to labour is called

A. average product of labour B. average product of capital

C. factor intensity D. None of these

39. For profit maxmisation we must have

A. MR = MC B. MC Curve cut MR curve from below
C. both a and b D. None of these

40. For the function one condition for getting points of inflexion is a

a. $f^1(d) = 0 / x$ b. $f''(x) = 0$
c. $f'''(x) = 0$ d. None of these

41. For the function $y = 10 + 2x_1^2x_2 + 3x_2^2x_3^3$, the value of $f_{22}$ is

A. $6x_2^3$ B. $6x_3^3$
C. $2x_1^2 + 6x_2$ D. None

42. For a function $y = f(x_1,x_2)$, the total differential is given by

A. $dy = f_1dx_1 + f_2dx_2$ B. $dy = f_1dx_2 + f_2dx_1$
C. both a and b D. None of these

43. The nature of tax multiplier is

A. positive B. zero
C. negative D. None

44. In the function $V=f(q_1, q_{2'}\ \ )$, is called

A. Income multiplier B. Lagrange's multiplier
C. Impact multiplier D. None of these

45. The inflexion points of the function $y = x^3 – 3x^2 + 5$ is at

A. 3 B. 6
C. 1 D. 0

46. If marginal revenue is Rs.25/- and elasticity of demand w.r.t price is 2, then the average revenue is

A. 50 B. 25
C. 75 D. 100

47. The output of a firm, with given prices of factors of production is decided so that the total cost is

A. Maximum B. Balanced
C. Minimum D. Positive

48. The minimal value of the function $y = x^4 – 4x^3 + 16x$ is at

A. -1 B. 2
C. -2 D. 1

49. For two goods 1 and 2, if $E_{12} > 0$ implies that the two goods are

A. Complementary B. Substitutes
C. Supplementary D. Giffen goods

50. If $f_{xx}f_{yy} < (f_{xy})^2$ when $f_{xx}$ and $f_{yy}$ are of the same sign, then the function is at

A. Minimum point B. Maximum point
C. Inflexion point D. Saddle point

## ANSWER KEY

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | C | 11 | D | 21 | A | 31 | A | 41 | B |
| 2 | D | 12 | C | 22 | A | 32 | B | 42 | A |
| 3 | A | 13 | A | 23 | D | 33 | D | 43 | B |
| 4 | C | 14 | C | 24 | A | 34 | C | 44 | B |
| 5 | A | 15 | B | 25 | D | 35 | A | 45 | C |
| 6 | C | 16 | A | 26 | A | 36 | A | 46 | A |
| 7 | C | 17 | B | 27 | D | 37 | C | 47 | D |
| 8 | A | 18 | C | 28 | C | 38 | C | 48 | B |
| 9 | C | 19 | C | 29 | B | 39 | C | 49 | A |
| 10 | A | 20 | B | 30 | C | 40 | B | 50 | B |