



This question paper contains 50 multiple choice questions. Each question has 4 options (A), (2), (3) and (4) for its answer, out of which **ONLY ONE** option can be correct.

Marking scheme: **+2** for correct answer, 0 if not attempted and 0 if not correct (no negative marking).

### MATHEMATICS & APTITUDE

1. Value of  $\sqrt{32 + \sqrt{960}}$  is
  1.  $\sqrt{5} + \sqrt{3}$
  2.  $\sqrt{20} + 2\sqrt{3}$
  3.  $\sqrt{20} - \sqrt{3}$
  4.  $\sqrt{5} + 2\sqrt{3}$
2. If  $x_1 < x_2$  and  $x_1, x_2$  are the roots of  $x^2 - 26x + 120 = 0$  then the value of  $\sqrt{x_1} + \sqrt{x_2} =$ 
  1.  $\sqrt{5} + 1$
  2.  $\sqrt{5} + 2$
  3.  $\sqrt{3} + \sqrt{2}$
  4.  $\sqrt{5} + \sqrt{3}$
3. If  $x = \sqrt[3]{9}, y = \sqrt[4]{11}, z = \sqrt[6]{17}$  then
  1.  $x > y > z$
  2.  $y > z > x$
  3.  $z > y > x$
  4.  $x < y < z$
4. Smallest among  $\sqrt[3]{4}, \sqrt[4]{5}, \sqrt[4]{6}, \sqrt[3]{8}$  is
  1.  $\sqrt[3]{4}$
  2.  $\sqrt[4]{5}$
  3.  $\sqrt[4]{6}$
  4.  $\sqrt[3]{8}$
5. If  $a = \sqrt{14} + \sqrt{18}, b = \sqrt{15} + \sqrt{17}$  then
  1.  $a > b$
  2.  $a < b$
  3.  $a = b$
  4. None of these
6. Rationalizing factor of  $\sqrt[3]{16} + \sqrt[3]{4} + 1$  is
  1.  $\sqrt[3]{4} + 1$
  2.  $\sqrt[3]{4} - 1$
  3.  $\sqrt[3]{2} + 1$
  4.  $\sqrt[3]{2} - 1$
7. If  $1 \leq a \leq 2$ , then the value of  $\sqrt{a+2\sqrt{a-1}} - \sqrt{a-2\sqrt{a-1}}$  is
  1.  $2\sqrt{a-1}$
  2.  $\sqrt{a-1}$
  3.  $\sqrt{a+1}$
  4.  $1/2\sqrt{a-1}$
8. If  $x = 3 + 3^{1/3} + 3^{2/3}$  then the value of  $x^3 - 9x^2 + 18x - 12 =$ 
  1. 1
  2. 0
  3. 8
  4.  $3\sqrt{3}$
9. Value of  $\sqrt{6 + \sqrt{6 + \sqrt{6 + \dots + t\infty}}}$  is
  1. 3
  2. 2
  3. 1
  4.  $\pm 3$
10. Fourth root of  $17 + 12\sqrt{2}$  is
  1.  $3 + \sqrt{2}$
  2.  $\sqrt{2} + 1$
  3.  $1 + \sqrt{3}$
  4.  $2 + \sqrt{3}$
11. Positive square root of  $6 - \sqrt{12} - \sqrt{24} - \sqrt{8}$  is
  1.  $-1 + \sqrt{3} + \sqrt{2}$
  2.  $1 - \sqrt{3} + \sqrt{2}$
  3.  $1 + \sqrt{3} - \sqrt{2}$
  4.  $1 + \sqrt{3} + \sqrt{2}$
12. If  $x = \frac{\sqrt{2}+1}{\sqrt{2}-1}, y = \frac{\sqrt{2}-1}{\sqrt{2}+1}$  then the value of  $x^2 - xy + y^2 =$ 
  1. 35
  2. 34
  3. 33
  4. 36
13. If  $x = 2 + \sqrt{3}, y = 2 - \sqrt{3}$  then the value of  $7x^2 + 11xy + 7y^2 =$ 
  1.  $11 + 56\sqrt{3}$
  2.  $-11 + 56\sqrt{3}$
  3.  $-11 - 56\sqrt{3}$
  4.  $11 - 56\sqrt{3}$
14. Value of  $\frac{1}{\sqrt{15+4\sqrt{14}}} + \frac{2}{\sqrt{12-2\sqrt{35}}} - \frac{3}{\sqrt{13-4\sqrt{10}}}$  is
  1. 0
  2. 1
  3.  $2\sqrt{5}$
  4.  $2\sqrt{7}$

15. Value of  $\frac{1}{1+\sqrt{2}} + \frac{1}{\sqrt{2}+\sqrt{3}} + \frac{1}{\sqrt{3}+\sqrt{4}} + \dots$  to 99 terms =  
 1. 9                                      2. 10                                      3.  $1 + \sqrt{99}$                                       4.  $\sqrt{99} - 1$
16. In a given code SISTER is coded as 535301. UNCLE as 84670 and BOY as 129. How is RUSTIC written in that code?  
 1) 633185                                      2) 185336                                      3) 363815                                      4) 581363
17. In a certain code BODE is written as @ \$ \* ? and EAT is written as ? • £  
 How can DEBATE be written in that code?  
 1) ? \* @ \* £ •                                      2) \* ? @ • £ ?                                      3) \* ? @ \* £ ?                                      4) Cannot be determined  
 5) None of these
18. In a game played by two people there were initially N match sticks kept on the table. A move in the game consists of a player removing either one or two matchsticks from the table. The one who takes the last matchstick loses. Players make moves alternately. The player who will make the first move is A. The other player is B.  
 The largest value of N (less than 50) that ensures a win for B is?  
 1) 48                                      2) 49                                      3) 47                                      4) 46
19. In a game played by two people there were initially N match sticks kept on the table. A move in the game consists of a player removing minimum one and maximum 5 matchsticks from the table. The one who takes the last matchstick wins. Players make moves alternately. The player who will make the first move is A. The other player is B.  
 The largest value of N (less than 50) that ensures a win for B is?  
 1) 48                                      2) 45                                      3) 47                                      4) 46
20. 82, 249, 1250, ?  
 1) 7456                                      2) 6583                                      3) 8757                                      4) 3423

### ECONOMICS

#### **Syllabus: Demand and supply**

21. Business economics is  
 a) Abstract and applies the tools of micro economics  
 b) Involves practical application of economic theory in business decision making  
 c) Incorporates tools from multiple disciplines  
 d) (b) and (c) above
22. In economics we use the term scarcity to mean  
 a) Absolute scarcity and lack of resources in less developed countries  
 b) relative scarcity i.e. scarcity in reaction to the wants of the society  
 c) Scarcity during times of business  
 d) scarcity caused on account of excessive consumption
23. Macroeconomics is also called \_\_\_\_\_ economics  
 a) applied                                      b) aggregate                                      c) experimental                                      d) none of the above
24. A study of how increase in the corporate income tax rate will affect the national unemployment rate is an example of  
 a) macro – economics    b) descriptive economics    c) micro-economics    d) normative economics
25. The branch of economics theory that deals with problem of allocation of resources is  
 a) micro-economic theory                                      b) macro-economic theory  
 c) economics                                      d) none of the above
26. Economics goods are considered scarce resources because they  
 a) cannot be increased in quantity  
 b) do not exist in adequate quantity to satisfy the requirements of the society  
 c) are of primary importance in satisfying social requirements  
 d) are limited to man made goods

- 27. In a mixed economy**  
 a) all economic decisions are taken by the central authority  
 b) all economic decisions are taken by private entrepreneurs  
 c) economic decisions are partly taken by the state and partly by the private entrepreneurs  
 d) none of the above
- 28. Large production of \_\_\_ goods would lead to high production in future**  
 a) consumer goods      b) capital goods      c) agricultural goods      d) public goods
- 29. Demand means**  
 a) Desire      b) purchasing ability  
 c) desire with purchasing ability      d) none of these
- 30. The law of demand states**  
 a) positive relation between P & Q      b) negative relation between P and Q  
 c) Spurious relation between P & Q      d) none of these
- 31. Demand depends on**  
 a) price of goods and related commodities  
 b) size of population  
 c) income, tastes and other factors      d) all are true
- 32. Demand curve is downward sloping due to**  
 a) income effect      b) substitution effect  
 c) law of diminishing marginal utility      d) all are true
- 33. Who is the main exponent of marginal utility analysis?**  
 a) Paul Samuelson      b) Hicks      c) Keynes      d) Marshall
- 34. Utility may be defined as**  
 a) level of satisfaction      b) want satisfying power  
 c) both (a) & (b)      d) none of these
- 35. Marginal utility approach to demand was given by**  
 a) J.R. Hicks      b) Alfred Marshall      c) Robbins      d) A.C. Pigou

### COMMERCE

#### Syllabus: Types of Industry, Commerce and trade, Auxiliaries to trade

- 36. The industry which plays an important role in development of nation is**  
 a) Primary Industry      b) Genetic Industry  
 c) Extractive Industry      d) Service Industry
- 37. The goods which are finally used by manufacturers are called as**  
 a) Producer goods      b) Consumer goods  
 c) Luxury goods      d) None of the above
- 38. The industries which undertake the construction work is known as**  
 a) Primary Industry      b) Genetic Industry  
 c) Constructive Industry      d) Service Industry
- 39. The term Commerce includes**  
 a) Trade      b) Aids to trade  
 c) Both a&b      d) None of the above
- 40. The trade in which large quantities are purchased is known as**  
 a) Retail trade      b) Wholesale trade  
 c) Small trade      d) None of the above
- 41. The medium which moves men and material from one place to another is**  
 a) Warehousing      b) Transport  
 c) Insurance      d) Banking
- 42. Communicating all the information about the goods to consumers and create in them a strong desire to buy is**  
 a) Warehousing      b) Transport  
 c) Advertising      d) None of the above

