

**C. GENERAL ECONOMICS**

1. Marginal Revenue is equal to  
a. The change in price divided by the change in output b. The change in quantity divided by the change in price  
**c. The change in  $P \times Q$  due to a one unit change in output** d. Price, but only if the firm is a price searcher
2. All of the following are characteristics of a monopoly except  
a. There is single firm b. **The firm is price taker** c. The firm produces a unique product d. The existence of some advertising
3. Under which of the following forms of market structure does a firm have no control over the price of its product?  
a. Monopoly b. Monopolistic competition c. Oligopoly d. **Perfect competition**
4. According to \_\_\_\_\_ measure, a person is said to be employed for the week even if he is employed only for a day during week  
a. Usual status b. **Current weekly status** c. Current daily status d. Current yearly status
5. The kinked demand hypothesis is designed to explain in the context of oligopoly  
a. Price and output determination b. **Price rigidity** c. Price leadership d. Collusion among rivals
6. The structure of the cold drink industry in India is best described as  
a. Perfectly competitive b. Monopolistic c. Monopolistically competitive d. **Oligopolistic**
7. When \_\_\_\_\_, we know that the firms are earning just normal profits  
a. **AC=AR** b. MC=MR c. MC=AC d. AR=MR
8. Agricultural goods market depict characteristics close to  
a. **Perfect competition** b. Oligopoly c. Monopoly d. Monopolistic competition
9. Which of the following markets would most closely satisfy the requirements for a perfectly competitive market?  
a. Electricity b. Cable television c. Cola d. **Milk**
10. Time element was conceived by  
a. Adam Smith b. **Alfred Marshall** c. Pigou d. Lionel Robinson
11. AR can be symbolically written as  
a. MR/Q b. PRICE \* QUANTITY c. **TR/Q** d. None of the above
12. When  $e < 1$  then MR is  
a. **Negative** b. Zero c. Positive d. One
13. Secular period is also known as  
a. Very short period b. Short period c. **Very long period** d. Long period
14. Pure oligopoly is based on the \_\_\_\_\_ products  
a. Differentiated b. **Homogeneous** c. Unrelated d. None of the above
15. Which of the following considered production in Economics?  
a. **Tiling of soil** b. Singing a song before friends  
c. Preventing a child from falling into a manhole on the road d. Painting a picture for pleasure
16. Diminishing marginal returns implies  
a. decreasing average variable costs b. Decreasing marginal costs  
c. **Increasing marginal costs** d. Decreasing average fixed costs
17. Which cost increases continuously with the increase in production?  
a. Average cost b. Marginal cost c. Fixed cost d. **Variable cost**
18. Total cost in the short run is classified into fixed costs and variable cost. Which one of the following is variable cost?  
a. **Cost of raw materials** b. Cost of equipment c. Interest payment on past borrowing d. Payment of rent on building
19. The cost of one thing in terms of the alternative given up is known as:  
a. Production cost b. Physical cost c. Real cost d. **Opportunity cost**
20. A firm's average fixed cost is Rs 20 at 6 units of output. What will it be at 4 units of output?  
a. Rs 60 b. **Rs 30** c. Rs 40 d. Rs 20
21. Law of production does not include \_\_\_\_\_  
a. Returns to scale b. Law of diminishing returns to a factor  
c. Law of variable proportions d. **Least cost combinations of factors**
22. Marginal product, mathematically is the slope of the  
a. **Total product curve** b. Average product curve c. Marginal product curve d. Implicit product curve
23. Labour is defined as \_\_\_\_\_  
a. Any work done without remuneration b. **Any exertion of mind or body to get some reward**  
c. Helping the mother d. Helping the friends
24. If a good is a luxury, its income elasticity of demand is  
a. Positive and less than 1 b. Negative but greater than -1 c. **Positive and greater than 1** d. Zero
25. Given the following four possibilities, which one results in an increase in total consumer expenditures?  
a. Demand is unitary elastic and price falls b. Demand is elastic and price rises  
c. Demand is inelastic and price falls d. **Demand is inelastic and price rises**
26. The consumer is in equilibrium at a point where the budget line  
a. Is above an indifference curve b. Is below an indifference curve  
c. **Is tangent to an indifference curve** d. Cuts an indifference curve
27. A horizontal supply curve parallel to the quantity axis implies that the elasticity of supply is  
a. Zero b. **Infinite** c. Equal to one d. Greater than zero but less than one
28. The quantity purchased will remain constant irrespective of the change in income. This is known as  
a. Negative income elasticity of demand b. Income elasticity of demand less than one  
c. **Zero income elasticity of demand** d. Income elasticity of demand is greater than one
29. When income increases, money spent on necessities of life may not increase in the same proportion, this means

- a. Income elasticity of demand is zero b. Income elasticity of demand is one  
c. Income elasticity of demand is greater than one d. **Income elasticity of demand is less than one**
30. Supply is a \_\_\_\_ concept  
a. Stock b. Flow and stock c. **Flow** d. None of the above
31. The supply curve shifts to the right because of \_\_\_\_  
**a. Improved technology** b. Increased price of factors of production c. Increased excise duty d. All of the above
32. The way in which rational consumers allocate their expenditure on goods and services is best described by \_\_\_\_  
**a. The law of diminishing marginal utility** b. The law of demand  
c. The theory of value d. The marginal rate of substitution
33. Production possibilities curve is also known as  
a. Demand curve b. Supply curve c. Indifference curve d. **Transformation curve**
34. Economic choices can be summarized in five big questions. They are \_\_\_\_  
a. What, how, who, where, and would you please b. Why not, what, how, when and where  
c. What, how, when, where, and why d. **What, how, when, where, and who**
35. If the marginal (additional) opportunity cost is a constant then the PPC would be  
a. Convex b. **Straight line** c. Backward bending d. Concave
36. Which of the following illustrates a decrease in unemployment using the PPF?  
a. A movement down along the PPF b. . A movement from a point on the PPF to a point inside the PPF  
c. b. A rightward shift of the PPF d. **A movement from a point inside the PPF to a point on the PPF**
37. All of the following developments were noticed during 1991 (when economic reforms were enforced) except one Identify  
a. National debt was nearly 60 percent of the GNP of India b. Inflation crossed double digits  
c. **Foreign reserves were maintained at a very high level** d. None of the above
38. At present only \_\_\_\_ industries are reserved for the public sector  
a. 5 b. 7 c. 8 d. **3**
39. At present, 100 percent FDI is allowed now  
a. Defense b. **Drugs and pharmaceuticals** c. Banks d. Insurance
40. DFEC stands for  
a. Direct Foreign Exchange control b. Direct Finance Exchange Control  
c. **Duty Free Export Credit** d. Duty Free Exchange Credit
41. The FRBMA stands for  
a. Foreign Regulation and Budget Management Act b. **Fiscal Responsibility and Budget Management Act**  
c. Finance Regulations and Bonds Management Association d. Funds Reallocation and Budget Management Act
42. Which of the following statements regarding privatization is correct?  
a. Privatization is panacea for all economic problems b. Privatization always leads to attaining social & economic efficiency  
c. **Privatization may result in lopsided development of industries in the country** d. None of the above
43. SEZ Act came into effect in \_\_\_\_  
a. 2002 b. **2003** c. 2006 d. 2007
44. Which is the soft lending arm of the world bank?  
a. **IDA** b. IFC c. MIGA d. ICSID
45. Money includes :  
a. Currencies and demand deposits b. Bonds, government securities c. Equity shares d. **All of the above**
46. Commercial banks in India were nationalized in 1969 because  
a. There was urban bias b. Agriculture sector was neglected  
c. There was concentration for economic power d. **All of the above**
47. In 2008-09 \_\_\_\_ continued to be the major source of India's imports  
a. Asia and ASEAN b. EU c. **North America** d. South America
48. Rural bank branches constitute \_\_\_\_ percent of total bank branches in India  
a. 14 b. 60 c. **38** d. 82
49. \_\_\_\_ refers to that portion of total deposits of a commercial bank which it has to keep with RBI in the form of cash reserves  
a. **CRR** b. SLR c. Bank rate d. Repo rate
50. who is the custodian of national reserves of international currency?  
a. SBI b. IDBI c. **RBI** d. ICICI
51. Population per bank in India is  
a. Around 5000 b. Around 20000 c. **Around 15000** d. Around 45000
52. India's passing through \_\_\_\_ stage of demographic transition.  
a. Fourth b. Third c. First d. **Second**
53. In the theory of demographic transition in the last stage  
a. Birth date rises, death rate rises b. Birth date rises, death rate falls  
c. Birth date falls, death rate rises d. **Birth date falls, death rate falls**
54. India accommodates nearly \_\_\_\_ percent of world's population  
a. 10 b. 50 c. **16.7** d. 45
55. Over the years, birth rate in india has \_\_\_\_ and death rate has \_\_\_\_  
a. **Fallen, fallen** b. Risen, fallen c. Risen, risen d. Fallen, risen
56. Price discrimination will be profitable only if elasticity of demand in different markets in which total market has been divided is  
a. Uniform b. **Different** c. Less d. Zero

57. Every \_\_\_\_\_ person in the world in an Indian  
a. Second b. Third c. **Sixth** d. Tenth
58. According to planning commission, using Mixed Recall Period (MRP) \_\_\_\_\_ percent people were below poverty line 2004-05  
a. Rs 26.2 b. Rs 25.2 c. Rs 27.8 d. **Rs 21.8**
59. At present nearly \_\_\_\_\_ per cent of the energy consumed is obtained from non-commercial traditional sources  
a. 45 b. 51 c. **27** d. 10
60. Electricity generated from radioactive elements is called  
a. Thermal electricity b. **Atomic energy** c. Hydel electricity d. Tidal energy
61. NLM stands for  
a. National Leprosy mission b. National Logistic Mission c. **National Literacy Mission** d. National Law Mission
62. The combined phenomenon of stagnation and inflation is called \_\_\_\_\_  
a. Demand-pull inflation b. Cost-push inflation c. Money inflation d. **Stagflation**
63. When the government tries to meet the gap of public expenditure and public revenue through borrowing from the banking system it is called \_\_\_\_\_  
a. **Deficit financing** b. Debt financing c. Credit financing d. None of the above
64. \_\_\_\_\_ is a systematic record of all the economic transactions between one country and rest of the world  
a. Balance of trade b. Balance of transactions c. Budget d. **Balance of payments**
65. Which state has the lowest life expectancy at birth?  
a. Kerala b. Bihar c. **Madhya Pradesh** d. Uttar Pradesh
66. Almost \_\_\_\_\_ percent of India's global merchandise trade is carried through the sea route  
a. **95** b. 65 c. 80 d. 55
67. In the Tenth plan, total exports grew at about \_\_\_\_\_ percent per annum  
a. 10 b. 15 c. **24** d. 5
68. Nationalization of banks aimed at all of the following except  
a. Removal of control by a few b. Provision of adequate credit for agriculture, small industry and export units  
c. **Provision of credit to big industries only** d. Encouragement of new class of entrepreneur
69. In terms of indebtedness classification, the world's bank has categorized India as a \_\_\_\_\_ country since 1999  
a. Highly indebted b. **Less indebted** c. Severely highly indebted d. Zero indebted
70. Among the top 15 debtor countries of the world, India is ranked at \_\_\_\_\_ (2008).  
a. 10 b. 15 c. 12 d. **18**
71. India's debt service ratio is \_\_\_\_\_. (2009-10)  
a. 11.5 b. **5.5** c. 30.5 d. 10
72. Which of the statements is correct?  
a. **The tertiary sector contributes the maximum to the GDP** b. India is basically a socialist economy  
c. The distribution of income and wealth is quite equitable d. None of the above
73. The green revolution is also known as  
a. **Wheat revolution** b. Rice revolution c. Maize revolution d. Forest revolution
74. Mahalanobis model stressed upon the establishment of  
a. Consumer goods industries b. Export oriented industries  
c. Agro-based industries d. **Capital & basic goods industries**
75. Three steel plants in Bhilai, Rourkela and Durgapur were set up in the  
a. First plan b. **Second plan** c. third plan d. fourth plan
76. The industrial sector faced the process of retrogression and deceleration during  
a. 1950-1965 b. 1990-2005 c. 1980-1995 d. **1965-1980**
77. About \_\_\_\_\_ per cent of the sick units in India are small units  
a. 10 b. 5 c. 30 d. **96**
78. The Eleventh Plan aimed at achieving a growth rate of \_\_\_\_\_ percent in the industrial sector  
a. 5 b. 8 c. **10** d. 6
79. Per capita national income means  
a. **NNP / population** b. Total capital / population c. Population / NNP d. None of the above
80. Among the following types of taxes find the one which is indirect?  
a. Gift tax b. Corporate income tax c. **VAT** d. Wealth tax
81. In order to control credit  
a. CRR should be increased & Bank Rate should be decreased  
b. CRR should be reduced & Bank Rate should be reduced  
c. **CRR should be increased & Bank Rate should be increased**  
d. CRR should be reduced & Bank Rate should be increased
82. During depression, it is advisable to  
a. **Lower Bank Rate and purchase securities in the market**  
b. Increase Bank Rate and purchase securities in the open market  
c. Decrease Bank Rate and sell securities in the open market  
d. Increase Bank Rate and sell securities in the open market
83. Which of the following statements is correct?  
a. **Gini coefficients are often used for measuring poverty in relative sense**  
b. When poverty is related to the distribution of income or consumption expenditure, it is absolute poverty  
c. In India, we mainly use the concept of relative poverty for measuring poverty d. None of the above
84. SJSRY stands for

- a. **Swaran Jayanti Shahari Rozgar Yojana** b. Shahari Jeewan Sudhar Rashtriya Yojana  
 c. Sampoorna Jeewan Shahari Rozgar Yojana d. None of the above
85. The Indian industry faced the process of retrogression and deceleration because of  
 a. Unsatisfactory performance of agriculture b. Slackening of real investment in public sector  
 c. Narrow market for industrial goods, especially in rural areas d. **All of the above**
86. Mixed income of the self employed means  
 a. Gross profits received by proprietors b. Rent, interest and profit of an enterprise  
 c. **Combined factor payments which are not distinguishable** d. Wages due to family workers
87. Demand for intermediate consumption arises in  
 a. Consumer households b. Government enterprises only  
 c. Corporate enterprises only d. **All producing sectors of an economy**
88. Net value added is equal to  
 a. **Payments accruing to factors of production** b. Compensation to employees  
 c. Wages plus rent plus rent d. Value of output minus depreciation
89. Suppose that supply of camera increases due to an increase in foreign imports. Which of the following will most likely occur?  
 a. The equilibrium price of cameras will increase b. The equilibrium quantity of cameras exchanged will decrease  
 c. The equilibrium price of camera film will decrease  
 d. **The equilibrium quantity of camera film exchanged will increase**
90. Price-taking firms, i.e. firms that operate in a perfectly competitive market are said to be small relative to the market which of the following best describes this smallness?  
 a. The individual firm must have fewer than 10 employees b. The individual firm has assets of less than Rs 20 lakhs  
 c. The individual firm faces a downward sloping demand curve  
 d. **The individual firm is unable to affect market price through its output decisions**
91. The long run equilibrium outcomes in monopolistic competition and perfect competition are similar because in both market structures  
 a. The efficient output level will be produced in the long run b. Firms will be producing at minimum average cost  
 c. **Firms will only earn a normal profit** d. Firms realize all economies of scale
92. The firm in a perfectly competitive market is a price taker. This designation as a price taker is based on assumption that  
 a. The firm has some but not complete control over its product price  
 b. **There are so many buyers and sellers in the market that any individual firm cannot affect the market**  
 c. Each firm produces a homogenous product d. There is easy entry into or exit from the market place
93. A firm encounters its "shutdown point" when  
 a. Average total cost equals price at the profit-maximizing level of output  
 b. **Average variable cost equals price at the profit-maximizing level of output**  
 c. Average fixed cost equals price at the profit-maximizing level of output  
 d. Marginal cost equals price at the profit-maximizing level of output
94. Which of the following statements is incorrect?  
 a. Even monopolistic can earn losses b. Firms in a perfectly competitive market are price takers  
 c. **It is always beneficial for a firm in a perfectly competitive market to discriminate prices**  
 d. Kinked demand curve is related to an oligopolistic market
95. When \_\_\_\_\_, we know that the firms must be producing at the minimum point of the average cost curve and so there will be productive efficiency  
 a.  $AC=AR$  b.  **$MC=AC$**  c.  $MC=MR$  d.  $AR=MR$
96. The marginal, average and total product curves encountered by the firm producing in the short run exhibit all of the following relationships except  
 a. When total product is rising, average and marginal product may be either rising or falling  
 b. When marginal product is negative, total product and average product are falling  
 c. When average product is at a maximum, marginal product equals average product, & total product is rising  
 d. **When marginal product is at a maximum, average product equals marginal product & total product is rising.**
97. Which of the following is an example of an explicit cost?  
 a. The wages a proprietor could have made by working as an employee of a large firm  
 b. The income that could have been earned in alternative uses by the resources owned by the firm  
 c. **The payment of wages by the firm** d. The normal profit earned by a firm
98. Which of the following statement is incorrect?  
 a. The LAC curve is also called the planning curve of a firm b. Total revenue = price per unit \* number of units sold  
 c. Opportunity cost is also called alternative cost  
 d. **If total revenue is divided by the number of units sold we get marginal revenue.**
99. An economy achieves "productive efficiency" when  
 a. Resources are employed in their most highly valued uses b. The best resources are employed  
 c. The total number of goods produced is greatest  
 d. **Goods and services are produced at least cost and no resources are wasted**
100. The law of scarcity  
 a. does not apply to rich developed countries b. **implies that consumers wants will never be completely satisfied**  
 c. implies that consumers wants will be satisfied in a socialistic system d. applies only to the less developed countries

**D. QUANTITATIVE APTITUDE**

- The equation of a line passing through (2,3) and perpendicular to the line joining (-5,6) and (-6,5) is  
a.  $x+y+5=0$       b.  $x-y+5=0$       c.  $x-y-5=0$       d.  **$x+y-5=0$**
- The equation of the line perpendicular to the line  $x=3$  and passing through (-4,2) is  
a.  **$y=2$**       b.  $4x+5y-38=0$       c.  $x=-4$       d.  $3x+2y+4=0$
- Product of the intercepts of a st.line is 1 and the line passes through (-12,1) then its equation is  
a.  $2x+25y=1$       b.  $x+13y=1$       c.  **$x+16y=4$**       d.  $16x+y=4$
- $\lim_{x \rightarrow -1/3} \frac{9x^2-1}{3x+1}$   
a)  $\infty$       b) 1      c) 2      d) **-2**
- Let a function be defined as follows :  $f(x) = \begin{cases} 4x & \text{when } 0 < x < 1 \\ 5-x & \text{when } x \geq 0 \end{cases}$   
a) **Continuous at  $x=1$**       b) Continuous at  $x=0$       c) continuous no where      d) Continuous for all, except  $x=1$
- Arrange the letters of the word "PHONE" in all possible ways and arrange the words so formed in the order of dictionary and find the rank of the given word  
a. 107      b. 109      c. **108**      d. 106
- Priyansh borrowed Rs.5000 from Sudhakar at simple interest. After 3 years Sudhakar got Rs.300 more than what he had given to Priyansh . The rate of interest per annum is  
a. **2%**      b. 5%      c. 8%      d. 10%
- $\lim_{x \rightarrow 1} \frac{e^x - e^{-1}}{x-1}$  is equal to  
a) e      b) **-1/e**      c) 1/e      d) 0
- The normal rate of compound interest is 10% per annum, but interest is compounded with the principal at the end of every six months. The effective rate of interest per annum is  
a. 10%      b. **10.25%**      c. 10.5%      d. 11%
- The population of a village is 1,00,000. If it decreases 5% per annum, what will be its population after 2 years?  
a. **90250**      b. 95750      c. 95000      d. 97250
- A code word is to consist of two English alphabets followed by two distinct numbers between 1 and 9. How many such code words are there?  
a. 615,800      b. **46,800**      c. 719,500      d. 410,800
- If  $^{1000}C_{98} = ^{999}C_{97} + ^xC_{98}$ , find x:  
a. **999**      b. 998      c. 997      d. 1000
- 7 books are to be arranged in such a way so that two particular books are always at first and last place. Final the number of arrangements.  
a. 60      b. 120      c. **240**      d. 480
- Six points are on a circle. The number of quadrilaterals that can be formed are  
a. 30      b. 360      c. **15**      d. None
- If  $x = y \log(xy)$ , then  $\frac{dy}{dx}$  is equal to  
a)  $\frac{x+y}{x(1+\log xy)}$       b)  $\frac{x-y}{x(1+\log xy)}$       c)  $\frac{x+y}{x(\log x + \log y)}$       d)  $\frac{x-y}{x(\log x + \log y)}$
- How many six digit telephone numbers can be formed by using 10 distinct digits?  
a.  $^{10}C_6$       b.  $^{10}P_6$       c.  **$10^6$**       d.  $6^{10}$
- $\lim_{x \rightarrow 2} \frac{x^n - 2^n}{x-2} = 80$ ,  $n \in \mathbb{N}$ , then  $n =$   
a. **5**      b. 0      c. 4      d. None
- $\lim_{n \rightarrow \infty} \left( \frac{1}{3} + \frac{1}{3^2} + \frac{1}{3^3} + \dots \dots \dots + \frac{1}{3^n} \right) =$   
a.  $\frac{1}{2}$       b.  $\frac{1}{3}$       c. 2      d. 1
- Insert 4 AM's between 3 and 18:  
a) 12,15,9,6      b) **6,9,12,15**      c) 9,6,12,15      d) 15,12,9,6
- $\lim_{y \rightarrow 0} \frac{3y+|y|}{7y-5|y|} =$   
a. 2      b. 1/6      c. 3/7      d. **does not exist**
- Evaluate:  $\int \frac{dx}{\sqrt{x^2+a^2}} =$   
a.  $\frac{1}{2} \log(x+\sqrt{x^2+a^2})+C$       b.  $\log(x+\sqrt{x^2+a^2})+C$       c.  $\log(x\sqrt{x^2+a^2})+c$       d.  $\frac{1}{2} \log(x\sqrt{x^2+a^2})+C$
- $\int \frac{8x^2}{(x^3+2)^3} dx$  is equal to :  
a)  $-4/3(x^3+2)^2+C$       b)  **$-4/3(x^3+2)^{-2}+C$**       c)  $4/3(x^3+2)^2+C$       d) none of these
- If  $y=(x+\sqrt{x^2+m^2})^n$  then  $\frac{dy}{dx} =$   
a)  $\frac{ny}{\sqrt{x^2+m^2}}$       b)  $ny$       c)  $-\frac{ny}{\sqrt{x^2+m^2}}$       d) none
- Evaluate:  $\int \frac{dx}{\sqrt{x^2+a^2}} :$   
a)  $\frac{1}{2} \log(x+\sqrt{x^2+a^2})+C$       b)  **$\log(x+\sqrt{x^2+a^2})+C$**       c)  $\log(x\sqrt{x^2+a^2})+C$       d)  $\frac{1}{2} \log(x\sqrt{x^2+a^2})+C$
- Given  $x=2t+5$ ;  $y=t^2-2$ , then  $\frac{dy}{dx}$  is calculated as  
a. t      b. 1/t      c. -1/t      d. -t

26.  $\int_1^2 \frac{2x}{1+x^2} dx$  is :

- a)  $\log_e \frac{5}{2}$       b)  $\log_e 5 - \log_e 2 + 1$       c)  $\log_e \frac{2}{5}$       d) none of these

27. Given the function  $f(x) = (2x+3)$ , then the value of  $f(2x) - 2f(x) + 3$  will be

- a. -3      b. 2      c. 1      d. 0

28. If  $f: \mathbb{R} \rightarrow \mathbb{R}$ ,  $f(x) = 2x+7$ , then the inverse of 'f' is:

- a.  $(x-7)/2$       b.  $(x+7)/2$       c.  $(x-3)/2$       d. None

29. If  $A = \{1, 2, 3, 4\}$ ,  $B = \{2, 4, 6, 8\}$ ,  $f(1)=2$ ,  $f(2)=4$ ,  $f(3)=6$  and  $f(4)=8$  and  $f: A \rightarrow B$  then  $f^{-1}$  is:

- a.  $\{(2,1), (4,2), (6,3), (8,4)\}$       b.  $\{(1,2), (2,4), (3,6), (4,8)\}$       c.  $\{(1,4), (2,2), (3,6), (4,8)\}$       d. none

30. If  $A \subset B$  then which one of the following is true

- a.  $A \cap B = B$       b.  $A \cup B = B$       c.  $A \cap B = A'$       d.  $A \cap B = \phi$

31. An alloy is to contain copper and zinc in the ratio 9:4. The zinc required to melt with 24kg of copper is

- a.  $10\frac{2}{3}\text{kg}$       b.  $10\frac{1}{3}\text{kg}$       c.  $9\frac{2}{3}\text{kg}$       d. 9Kg

32. Two numbers are in the ratio 7:8. If 3 is added to each of them, their ratio becomes 8:9. The numbers are

- a. 14, 16      b. 24, 27      c. **21, 24**      d. 16, 18

33. Eight people are planning to share equally the cost of a rental car. If one person withdraws from the arrangement and the others share equally entire cost of the car, then the new share of each of the remaining persons is

- a.  $1/9$       b.  $1/8$       c.  **$1/7$**       d.  $7/8$

34.  $\log 144$  is equal to

- a.  $2\log 4 + 2\log 2$       b.  **$4\log 2 + 2\log 3$**       c.  $3\log 2 + 4\log 3$       d.  $3\log 2 - 4\log 3$

35. A box contains Rs. 56 in the form of coins of one rupee, 50 paise and 25 paise. The number of 50-paise coins is double the number of 25-paise coin & four times the number of one rupee coin. The number of 50-paise coins in box is

- a. **64**      b. 32      c. 16      d. 14

36. A man starts his job with a certain monthly salary & earns a fixed increment every year. If his salary was Rs. 1,500 after 4 years of service & Rs. 1,800 after 10 years of service, what was his starting salary & what is annual increment in rupees?

- a. **Rs. 1,300 & Rs. 50**      b. Rs. 1,100 & Rs. 50      c. Rs. 1,500 & Rs. 30      d. None

37. How many ways a team of 11 players can be made out of 15 players if one particular player is not to be selected in team

- a) **364**      b) 728      c) 1,001      d) 1,234

38. One root of the equation  $x^2 - 2(5+m)x + (3(7+m)+1) = 0$  is reciprocal of the other. Find the value of M

- a. -7      b. 7      c.  $1/7$       d.  $-1/7$

39. Find the equation of the line joining the point P (3,5) with the point of intersection of  $2x+3y-5=0$  and  $3x+5y-7=0$ .

- a.  $6x+y+23=0$       b.  **$6x+y-23=0$**       c.  $6x+2y+14=0$       d.  $2x+5y+5=0$

40. Anand prepares a chart for his diet in order to regain his fitness. The dietitian asked him to have at least 8 units of vitamin A, 6 units of vitamin B, 10 units of vitamin C and a maximum of 7 units of vitamin D. The vitamin content per kg. of his food is as follows:

|           | A | B | C | D   |
|-----------|---|---|---|-----|
| Food – I  | 2 | 3 | 1 | 0.5 |
| Food – II | 1 | 2 | 5 | 3   |

Assuming 'x' quantity of Food – I and 'y' quantity of Food – II is mixed, express the situation in form of inequalities.

- a.  $2x + y \geq 8$   
 $3x + 2y \geq 6$   
 $x + 5y \geq 10$   
 $0.5x + 3y \leq 7$
- b.  $2x + y \leq 8$   
 $3x + 2y \leq 6$   
 $x + 5y \leq 10$   
 $0.5x + 3y \geq 7$
- c.  **$2x + y \geq 8$**   
 **$3x + 2y \geq 6$**   
 **$x + 5y \geq 10$**   
 **$0.5x + 3y \leq 7$**   
 **$x \geq 0, y \geq 0$**
- d.  $2x + y \leq 8$   
 $3x + 2y \geq 6$   
 $x + 5y \leq 10$   
 $0.5x + 3y \geq 7$   
 $x \leq 0, y \leq 0$

41. If nth term of the series 3, 6, 12... is 1536. Then 'n' =

- a. 10      b. 8      c. **9**      d. 11

42. Rohit borrows Rs. 86,000 from Arun for 2yrs at 5% p.a simple Interest. He immediately lends the money to Akshay at 5% Compound interest compounded annually for the same period. Calculate Rohit's profit in the transaction at end of 2yrs.

- a. **215**      b. 8600      c. 8815      d. None of these

43. If 7 times of the 7<sup>th</sup> term of an AP is equal to 11 times of its 11<sup>th</sup> term, then 18<sup>th</sup> term of the AP is equal to

- a. **0**      b. 10      c. 12      d. 8

44. If  $x = 1 + \log_a bc$ ,  $y = 1 + \log_b ca$ ,  $z = 1 + \log_c ab$ , then  $xy + yz + zx =$

- a. 1      b. 0      c. **xyz**      d.  $(xyz)^2$

45. The eight term from the last of the series  $101 + 99 + 97 + \dots + 47$  is

- a. 87      b. 63      c. **61**      d. 85

46. There are three blue balls, four red balls and five green balls. In how many ways can they be arranged in a row ?

- a. 26720      b. **27720**      c. 27820      d. 26620

47. The first, second and seventh term of AP are in GP and the common difference is 2, the 2<sup>nd</sup> term of AP is:

- a)  **$5/2$**       b) 2      c)  $3/2$       d)  $1/2$

48. A machine can be purchased for Rs. 50,000. Machine will contribute Rs. 12,000 per year for the next five years. Assume borrowing cost is 10% p.a (SI). Determine whether machine should be purchased or not:

- a. Should be purchased      b. **shouldn't be purchased**      c. It's their wish      d. Insufficient data

49. The students of two classes are in the ratio 5:7, if 10 students left from each class, the remaining students are in the ratio of 4:6 then the number of students in each class is:

- (a) 30, 40      (b) 25, 24      (c) **40, 60**      (d) 50, 70

50. If  $A:B=2:5$  then  $(10A+3B):(5A+2B)$  is equal to

- a. **7:4**      (b) 7:3      (c) 6:5      (d) 7:9

51. Which of the following statement is true?

- a) Statistics is derived from the french word "Statistik"      b) Italian word "statista"  
c) Latin-Statistique      d) None of these

52. The quickest method to collect primary data is:

- A) Personal Interview      B) Indirect Interview      C) Mailed Questionnaire      **D) Telephonic Interview**

53. Cost of sugar in a month under the heads raw materials, labour, direct production and others were 12, 20, 35 & 23 units respectively. What is the difference between the central angles for the largest & smallest components of the cost of sugar?

- A)  $72^\circ$       B)  $48^\circ$       C)  $56^\circ$       **D)  $92^\circ$**

54. Mode can be obtained from ...

- A) Frequency polygon      **B) Histogram**      C) Ogive      D) All of the above

55. Arrange dimensions of Bar diagram, cube diagram, pie diagram in sequence

- A) 1, 2, 3      B) 2, 1, 3      **C) 2, 3, 1**      D) 3, 2, 1

56. Relative frequency for a particular class lies between:

- A) 0 and 1**      B) 0 and 1, both exclusive      C) -1 and 0      D) -1 and 1

57. In tabulation, source of data, if any, is shown in the

- A) Stub      B) Body      C) Caption      **D) Footnote**

58. The mean weight of 15 students is 110 kg. The mean weight of 5 of them is 100 kg. and of another five students is 125 kg. then the mean weight of the remaining students is :

- A) 120      **B) 105**      C) 115      D) None of these

59. The equation of a line is  $5x + 2y = 17$ . Mean deviation of y about mean is 5, calculate mean deviation of x about mean.

- A) -2      **B) 2**      C) -4      D) None

61. The sum of squares of deviation from mean of 10 observations is 250. Mean of the data is 10. Find the co-efficient of variation.

- A) 10%      B) 25%      **C) 50%**      D) 0%

62. When mean is 3.57 and mode is 2.13 then the value of median is.....

- A) 3.09**      B) 5.01      C) 4.01      D) None of these

63. A student obtained the mean and standard deviation of 100 observations as 40 and 5.1 respectively. It was later discovered that he had wrongly copied down an observation as 50 instead of 40. The correct standard deviation is..

- A) 5**      B) 6      C) 3      D) 7

64. The average salary of 50 men was Rs.80 but it was found that salary of 2 of them were Rs. 46 and Rs.28 which was wrongly taken as Rs.64 and Rs.82. The revised average salary is :

- A) 80      **B) 78.56**      C) 85.26      D) 82.92

65. The Mean and S.D. for group of 100 observations are 65 and 7.03 respectively if 60 of these observations have mean and S.D. as 70 and 3 respectively, what is the S.D. for the group comprising 40 observations?

- A) 2.03      **B) 4.03**      C) 8.03      D) 9.33

66. The coefficient of correlation between x and y series from the following data:

|                                           |      |      |
|-------------------------------------------|------|------|
| Number of pairs of observation:           | 15   | 15   |
| Arithmetic mean                           | 25   | 18   |
| Standard deviation                        | 3.01 | 3.03 |
| Sum of the squares of deviation from mean | 136  | 138  |

Sum of the product of the deviations of x and y series from their respective means=122, is

- A) .89**      B) .99      C) .69      D) .91

67. If the sum of squares of differences of rank is 50 and number of items is 8 then what is the value of rank correlation coefficient;

- a) 0.59      **b) 0.40**      c) 0.36      d) 0.63

68. For 10 pairs of observations, number of concurrent deviations was found to be 4. What is the value of the coefficient of concurrent deviation?

- a)  $\sqrt{0.2}$       **b) 1/3**      c) -1/3      d)  $-\sqrt{0.2}$

69. The coefficient of correlation between X and Y is 0.6 . U and V are two variables defined as  $U = \frac{x-3}{2}$ ,  $V = \frac{y-2}{3}$ , then the coefficient of correlation between U and V is:

- a) 0.6**      b) 0.4      c) 0.8      d) 1

70. Given the regression equation as  $3x + y = 13$  and  $2x + 5y = 20$ . Find regression equation of y on x

- a)  $3x + y = 13$       b)  $2x + y = 20$       c)  $3x + 5y = 13$       **d)  $2x + 5y = 20$**

71. The ranks of five participants given by two judges are

|         | A | B | C | D | E |
|---------|---|---|---|---|---|
| JUDGE1: | 1 | 2 | 3 | 4 | 5 |
| JUDGE2: | 5 | 4 | 3 | 2 | 1 |

Then rank correlation between them is .

- A)1 B)0 C)-1 D)1/2

72. A bag contains 3 white and 5 black balls and second bag contains 4 white and 2 black balls. If one ball is taken from each bag, the probability that both the balls are white is

- a)1/3 b)1/4 c)1/2 d) none of these

73. In a pack of playing cards with two jokers probability of getting king of spade is

- a)4/13 b)4/52 c)1/52 d)1/54

74. In a non- leap year, the probability of getting 53 Sundays or 53 Tuesdays or 53 Thursdays is:

- a)4/7 b)2/7 c)3/7 d)1/7

75. A Box contains 12 electric lamps of which 5 are defectives. A man selects three lamps at random. What is the expected number of defective lamps in his selection?

- A)1.25 b)2.50 c)1.05 d)2.03

76. An article consists of two parts A & B. The manufacturing process of each part is such that probability of defect in A is 0.08 & that in B is 0.05. What is the probability that the assembled product will not have any defect?

- A)0.934 b)0.864 c)0.85 d)0.874

77. The probability that a trainee will remain with a company is 0.8. The probability that an employee earns more than Rs.20,000 per month is 0.4. The probability that an employee, who was a trainee and remained with the company or who earns more than Rs.20,000 per month is 0.9. what is the probability that an employee earns more than Rs.20,000 per month given that he is a trainee, who stayed with the company?

- A)5/8 b)3/8 c)1/8 d)7/8

78. If  $x: -2 \ 3 \ 1$   $P(X): \ 1/3 \ 1/2 \ 1/6$  then find  $E(2X+5)$

- a)7 b)6 c)9 d)4

79. For a poisson distribution  $P(x=3)=5P(x=5)$ , then S.D is

- a)4 b)2 c)16 d) $\sqrt{2}$

80. In binomial distribution  $n=9$  and  $P=1/3$ , what is the value of variance ?

- a)8 b)4 c)2 d)16

81. In a certain manufacturing process, 5% of the tools produced turn out to be defective. Find the probability that in a sample of 40 tools, atmost 2 will be defective: [given  $e^{-2}=0.135$ ]

- a)0.555 b)0.932 c)0.785 d)0.675

82. If X follows a normal distribution with  $\mu=50$  and  $\sigma=10$ . What is the value of  $P\left[\frac{x \leq 60}{x > 50}\right]$ : [ area under the normal curve from  $z=0$  to  $z=1$  is 0.3413].

- a. 0.6826 b)0.7354 c)0.1983 d)0.5492

83. If 5% of the families in Kolkata do not use gas as a fuel, what will be the probability of selecting 10 families in a random sample of 100 families who do not use gas as fuel? [given:  $e^{-5}=0.0067$ ]

- a)0.038 b)0.028 c)0.048 d)0.018

84. The interval  $(\mu - 3\sigma, \mu + 3\sigma)$  covers:

- a) 95% area of normal distribution b) 96% area of normal distribution  
c)99% area of normal distribution d) All but 0.27% area of a normal distribution

85. The number of calls arriving at an internal switch board of an office is 96 per hour. Find the probability that there will be: (i) not more than 3 calls on the board, (ii) at least three calls in a minute on the board.[given:  $e^{-16}=0.2019$ ]

- a) 0.08 and 0.92 respectively b)0.19 and 0.92 respectively c)0.92 and 0.13 respectively d) 0.92 and 0.08 respectively

86. The hypothesis which is tested for possible rejection under the assumption that it is true is known as:

- a)Biased hypothesis b) Alternative hypothesis c) Null hypothesis d) none of these

87. The method of sampling in which each unit of population has an equal chance of being selected in sample

- a) Random sampling b) Stratified sampling c) Systematic sampling d) none of these

88. Except sampling error, other errors in sampling are:

- a) Non sampling errors b) Standard errors c) Sampling fluctuations d) all of these

89. A population comprises of 20 members. The number of all possible samples if size 2 that can be drawn from it without replacement.

- A)210 b)380 c)190 d)400

90. If it is known that the 95% L.C.L and U.C.L to population mean are 48.04 and 51.96 respectively, what is the value of the population variance when the sample size is 100 ?

- a)9 b)11 c)12 d)10

91. A simple random sample of size 66 was drawn in the process of estimating the mean annual income of 950 families of a certain township. The mean and standard deviation of the samples were found to be Rs.4730 and Rs.7.65 respectively. Find a 95% confidence interval for the population mean:

- a)[4782.15,4731.85] b)[4728.15,4731.85] c)[4793.85,4801.85] d) none of these