M.Sc. (IT) Entrance Test Sample Paper with Answer Key

Name: **Form Number:**
Total Time :- 2 Hours   **Questions:** 100 MCQs   **Total Marks :-** 200

SECTION-A
MATHEMATICS QUESTIONS

1. The function $f(x) = x^3 - 6x^2 + 9x + 25$ has
a. a maxima at x= 1 and a minima at x = 3
b. a maxima at x = 3 and a minima at x = 1
c. no maxima, but a minima at x = 1
d. a maxima at x = 1, but no minima

2. The value of $a = \int_{0}^{5\pi} (2 - \sin x)dx$ is

a. >0 b. 2   c. 0 - 1 + 100 - 10 + 1   d. undefined

3. If f(x) = | x |, then for interval [-1, 1], f(x)
a. satisfied all the conditions of Rolle's Theorem
b. satisfied all the conditions of Mean Value Theorem
c. does not satisfy the -conditions of Mean Value Theorem
d. None of these

4. For what value of k, if any, is $\int_{0}^{\infty} kxe^{-2x}dx = 1$?

a. ¼   b. 1
c. 4   d. there is so much value of k.

5. If (G, .) is a group such that (ab)- 1 = a-1b-1, ∀ a, b ∈ G, then G is a/an
a. commutative semi group
b. abelian group
c. non-abelian group
d. None of These

6. Let A be the set of all non-singular matrices over real numbers and let * be the matrix multiplication operator. Then
a. A is closed under * but < A, * > is not a semi group
b. < A, * > is a semi group but not a monoid
c. < A, * > is a monoid but not a group
d. < A, * > is a group but not an abelian group

7. What is the derivative of f(x) = | x | at x = 0
a. 1   b. -1   c. 0   d. Do not Exist

8. If a function is continuous at a point, then its first derivative
a. may or may not exist
b. exists always
c. will not exist
d. has a unique value

9. If R = {(1, 2),(2, 3),(3, 3)} be a relation defined on A= {1, 2, 3} then R . R (= R2) is
a. R itself
b. {(1, 2),(1, 3),(3, 3)}
c. {(1, 3),(2, 3),(3, 3)}
d. {(2, 1),(1, 3),(2, 3)}

10. Directional derivative of f (x, y, z) = $x^2 + y^2 + z^2$ at the point (1, 1, 1) in the direction i - k is

a. 0   b. 1   c. $\sqrt{2}$ d. $2\sqrt{2}$

11. If $f(x) = g(x) + 7$ for $3 \leq x \leq 5$, then $\int_3^5 [f(x) + g(x)]dx =$

a. $2\int_3^5 g(x)dx + 7$ b. $2\int_3^5 g(x)dx + 14$ c. $2\int_3^5 g(x)dx + 28$ d. $\int_3^5 g(x)dx + 7$

12. If a, b are positive integers, define a * b = a where ab = a (modulo 7), with this * operation, then inverse of 3 in group G (1, 2, 3, 4, 5, 6) is
a. 3   b. 1   c. 5   d. 4

13. Which of the following is TRUE?
a. Set of all rational negative numbers forms a group under multiplication
b. Set of all non-singular matrices forms a group under multiplication
c. Set of all matrices forms a group under multiplication
d. Both b. and c.

14. Integration ∫ log x dx has the value
a. x log x – 1   b. log x – x   c. x(log x -1)   d. none of these

15. The following function has a local maxima at which value of x, $f(x) = x\sqrt{5 - x^2}$

a. $-\dfrac{\sqrt{5}}{2}$ b. $\sqrt{5}$ c. $\sqrt{\dfrac{5}{2}}$ d. $-\sqrt{\dfrac{5}{2}}$

16. The angle between Radius vector r=a(1-cosθ) and tangent to the curve is Ø given by_____
a. Ø = π/2   b. Ø = π   c. Ø = −π/2   d. Ø = 0

17. For the function $f(x) = x^2 - 2x + 1$. We have Rolles point at $x = 1$. The coordinate axes are then rotated by 45 degrees in anticlockwise sense. What is the position of new Rolles point with respect to the transformed coordinate axes?

a. $3/2$ b. $1/2$ c. $5/2$ d. 1

18. For a third degree monic polynomial, it is seen that the sum of roots are zero. What is the relation between the minimum angle to be rotated to have a Rolles point (α in Radians) and the cyclic sum of the roots taken two at a time c

a. $\alpha = \dfrac{\pi}{180} * \tan^{-1}(c)$

b. Can never have a Rolles point

c. $\alpha = \dfrac{180}{\pi} \tan^{-}1(c)$

d. $\alpha = \tan^{-}1(c)$

19. The pth derivative of a qth degree monic polynomial, where p, q are positive integers and $2p^4 + 3pq^{3/2} = 3q^{3/2} + 2qp^3$ is given by?

a. Cannot be generally determined   b. $(q-1)!$ c. $(q)!$ d. $(q-1)! * p^q$

20. The first and second derivatives of a quadratic Polynomial at $x = 1$ are 1 and 2 respectively. Then the value of $f(1) - f(0)$ Is given by?

a. $3/2$ b. $1/2$ c. 1   d. 0

21. Let $f(x) = \ln(x^2 + 5x + 6)$ then the value of $f^{(30)}(1)$ is given by?

a. $(29!)(\dfrac{1}{3^{30}} + \dfrac{1}{4^{30}})$ b. $(-29!)(\dfrac{1}{3^{30}} + \dfrac{1}{4^{30}})$ c. $(30!)(\dfrac{1}{3^{30}} + \dfrac{1}{4^{30}})$ d. $(-30!)(\dfrac{1}{3^{30}} + \dfrac{1}{4^{30}})$

22. Find $\lim\limits_{x,y \to (0,0)} \dfrac{\sin(y)}{x}$

a. 1   b. 0   c. ∞ d. Does Not Exist

23. What is the order of the differential equation given by $\dfrac{dy}{dx} + 4y = \sin x$?

a. 0.5   b. 1   c. 2   d. 0

24. A racer accelerates from a stop so that its speed is 10t m/s t second after starting how far will the car go in 4 seconds?

a. 80m   b. 60m   c. 40m   d. 160m

25. The jacobian of p,q,r w.r.t x,y,z given $p = x+y+z$, $q = y+z$, $r = z$ is _____

a. 0   b. 1   c. 2   d. -1

26. If $x = r\cos\theta$, $y = r\sin\theta$ then the value of $\dfrac{\partial(x, y)}{\partial(r, \theta)}$ is _____

a. 1   b. 0   c. r   d. 1/r

27. Find the Eigen values for the following 2×2 matrix. $A = \begin{pmatrix} 1 & 8 \\ 2 & 1 \end{pmatrix}$

a. -3   b. 2   c. 6   d. 4

28. Find the value of A^3 where $A = \begin{pmatrix} -1 & -1 & 2 \\ 0 & 1 & -1 \\ 2 & 2 & 1 \end{pmatrix}$

a. $\begin{pmatrix} 3 & 5 & -1 \\ -2 & -9 & 2 \\ -2 & -4 & -5 \end{pmatrix}$ b. $\begin{pmatrix} 3 & 5 & -1 \\ 1 & -9 & 1 \\ -2 & -4 & -5 \end{pmatrix}$ c. $\begin{pmatrix} 3 & 5 & -1 \\ -2 & -9 & 1 \\ -2 & -4 & -5 \end{pmatrix}$ d. $\begin{pmatrix} 3 & 5 & -1 \\ -1 & -9 & 1 \\ -2 & -4 & -5 \end{pmatrix}$

29. Consider the $f(x, y) = x^2 + y^2 - A$. For what values of A do we have critical points for the function.
a. independent of A
b. for any real number except zero
c. $A \in (0, +\infty)$
d. $A \in (-1, 1)$

30. The point (0,0) in the domain of $f(x, y) = \sin(xy)$ is a point of _____
a. Saddle   b. Minima   c. Maxima   d. Constant

31. Fit a straight line y=a+bx into the given data:
(x,y):(5,12)(10,13)(15,14)(20,15)(25,16).
a. y=11   b. y=0.2x   c. y=11+0.2x   d. y=1.1+0.2x

32. $f(x, y) = x^2 + xyz + z$ Find f_x at (1,1,1)
a. 0   b. 1   c. 3   d. -1

33. Find the value of $\iint xye^{x+y} dxdy$.
a. $ye^y (xe^x-e^x)$ b. $(ye^y-e^y)(xe^x-e^x)$ c. $(ye^y-e^y)xe^x$ d. $(ye^y-e^y)(xe^x+e^x)$

34. The value of $\int_0^a \int_0^x \int_0^{x+y} e^{x+y+z} dxdydz$ is given by _____
a. 17/144   b. 16/72   c. 17/72   d. 15/144

35. nth derivative of Sinh(x) is
a. $0.5(e^x - e^{-x})$ b. $0.5(e^{-x} - e^x)$ c. $0.5(e^x - (-1)^n e^{-x})$ d. $0.5((-1)^{-n} e^{-x} - e^x)$

36. If $y = \tan^{(-1)}(x)$, then which one is correct ?
a. $y_3 + y_1^2 + 4xy_2y_1 = 0$
b. $y_3 + y_1^2 + xy_2y_1 = 0$
c. $y_3 + 2y_1^2 + xy_2y_1 = 0$
d. $y_3 + 2y_1^2 + 4xy_2y_1 = 0$

37. Del operator is also known as _____
a. Divergence operator
b. Gradient operator
c. Curl operator
d. Laplacian operator

38. The gradient is taken on a _____
a. tensor   b. vector   c. scalar   d. anything

39. What is the value of $\beta(m, 1/2)$?
a. $\beta(m, m)$ b. $2^{2m-1} \beta(m, m)$ c. $2^{2m+1} \beta(m, m)$ d. $2^{2m} \beta(m, m)$

40. Which of the following matrix is Skew Symmetric?

a. $\begin{pmatrix} 0 & 1 \\ -1 & 0 \end{pmatrix}$ b. $\begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}$ c. $\begin{pmatrix} 0 & 3 \\ -1 & 9 \end{pmatrix}$ d. $\begin{pmatrix} 8 & -2 \\ -1 & 3 \end{pmatrix}$

41. For the linear transformation, $X = \begin{pmatrix} 2 & 1 & 1 \\ 1 & 1 & 2 \\ 1 & 0 & -2 \end{pmatrix} Y$, find the Y co-ordinates for (1, 2, -1) in X.

a. (0, -2, 0)   b. (-1, 3, 1)   c. (-1, -2, 0)   d. (-1, 3, 0)

42. Find $\lim\limits_{x \to 2} f(x)$: $f(x) = 1776$

a. $+\infty$ b. 1770   c. $-\infty$ d. None of these

43. Which of the following functions are NOT differentiable?
a. $f(x) = |x|$ b. $f(x) = (x + 3)^4$ c. $f(x) = 1066$ d. $f(x) = mx + b$

44. Find the derivative of: $f(x) = \sqrt{x}$

a. $-\dfrac{1}{2\sqrt{x}}$ b. $\dfrac{1}{\sqrt{x}}$ c. $\dfrac{1}{2\sqrt{x}}$ d. $\sqrt{x}$

45. Compute the partial derivative of the function: $f(x, y, z) = e^{1-x \cos(y)} + z\, e^{-1/(1+y2)}$ with respect to x at the point $(1, 0, \pi)$.
a. -1   b. $-1/e$ c. 0   d. π/e

46. The maximum value of $(xy)^6$ on ellipse $\dfrac{x^2}{4} + y^2 = 1$ occurs at a point (x, y) for which y^2 is equal to

a. $\dfrac{\sqrt{2}}{3}$ b. ½   c. 2/3   d. 5/11

47. A particle moves in a circle according to the equations $\vec{r}(t) = \cos(t^2)\hat{i} + \sin(t^2)\hat{j}$. The magnitude of the normal component of the acceleration at time t is
a. 0   b. 1   c. 6t   d. $4t^2$

48. Reduce the given matrix to normal form, and hence find its rank.
$$\begin{bmatrix} 1 & 2 & -2 & 3 \\ 2 & 5 & -4 & 6 \\ -1 & -3 & 2 & -2 \\ 2 & 4 & -1 & 6 \end{bmatrix}$$

a. 1   b. 4   c. 3   d. 2

49. What is the divergence of the vector field $\vec{f} = 3x^2\,\hat{i} + 5xy^2\,\hat{j} + xyz^3\,\hat{k}$ at the point (1, 2, 3).
a. 89   b. 80   c. 124   d. 100

50. A vector field which has a vanishing divergence is called as _____
a. Solenoidal field
b. Rotational field
c. Hemispheroidal field
d. Irrotational field

51. Divergence and Curl of a vector field are _____
a. Scalar & Scalar   b. Scalar & Vector   c. Vector & Vector   d. Vector & Scalar

52. What is the fourier sine transform of e^{-ax}?

a. $\dfrac{4}{(4+p^2)}$ b. $4\dfrac{a}{(4a^2+p^2)}$ c. $\dfrac{p}{(a^2+p^2)}$ d. $2\dfrac{p}{(a^2+p^2)}$

53. Convert Cartesian coordinates (2, 6, 9) to Cylindrical and Spherical Coordinates.
a. (6.32, 71.565, 6.32) and (11, 71.565, 35.097)
b. (6.32, 71.565, 9) and (6.32, 71.565, 35.097)
c. (6.32, 71.565, 6.32) and (6.32, 35.097, 71.565)
d. (6.32, 71.565, 9) and (11, 35.097, 71.565)

54. Find the distance between two points A(5,60,0) and B(10,90,0) where the points are given in Cylindrical coordinates.
a. 4.19 units   b. 5.19 units   c. 6.19 units   d. 7.19 units

55. Fit the straight line to the following data.

x	1	2	3	4	5
y	1	2	3	4	5

a. y=x   b. y=x+1   c. y=2x   d. y=2x+1

56. Cramer's Rule fails for _____
a. Determinant > 0 b. Determinant < 0
c. Determinant $= 0$ d. Determinant = non-real

57. The LU method of factorization was introduced by the mathematician_____
a. Alan Tango   b. David Hilbert
c. G. W. Leibniz   d. Alex Grothendieck

58. Which of the following step is not involved in the factorization process?
a. converting the given system to matrix form
b. the matrix is decomposed into the product of lower and upper triangular matrix
c. finding the unknowns using matrix multiplication
d. elimination of unknowns using back substitution

59. What is the condition applied in factorization method?
a. Matrix should not be singular
b. Back substitution should be done
c. There must exist a diagonal matrix form of the given matrix
d. All principal minors of the matrix should be non-singular

60. Three companies A, B and C supply 25%, 35% and 40% of the notebooks to a school. Past experience shows that 5%, 4% and 2% of the notebooks produced by these companies are defective. If a notebook was found to be defective, what is the probability that the notebook was supplied by A?
a. 44⁄69　　　　　　b. 25⁄69　　　　　　c. 13⁄24　　　　　　d. 11⁄24

SECTION-B
APTITUDE QUESTIONS

61. $(0.83 \times 0.83 \times 0.83 + 0.17 \times 0.17 \times 0.17)$ is equal to ___.
a. $1 + 0.51 \times 0.83$　　　　　　b. $1 - 0.51 \times 0.83$
c. $0.51 \times 0.83 - 1$　　　　　　d. $2 + 0.51 \times 0.83$

62. Find the simplified value of $63\sqrt{(729)^{\frac{-2}{3}} + (343)^{\frac{-2}{3}}}$

a. $63\sqrt{1072}$　　　　b. $\dfrac{63}{\sqrt{30}}$　　　　c. $63\sqrt{63}$　　　　d. $\sqrt{130}$

63. An alloy of copper and zinc is taken in the ratio 1 : 2, and another alloy of the same metal is taken in the ratio of 2 : 3. How many parts of the two alloys must be taken to obtain a new alloy consisting of copper and zinc that are in the ratio 3 : 5?
a. 7 and 9　　　　b. 5 and 7　　　　c. 3 and 5　　　　d. 5 and 3

64. Aditya, Manish and Gaurav enter into partnership with shares in the ratio of 7/2 : 4/3 : 6/5. After 4 months, Aditya increase his share by 50%. If at the end of one year profit be $ 43200. Then what will be Manish share in profit?
a. 8000　　　　b. 7200　　　　c. 28000　　　　d. 24400

65. The product of one third of a number and 150% of another number is what percent of product of the given numbers?
a. 30%　　　　b. 35%　　　　c. 39%　　　　d. None of these

66. Ram borrowed $ 725 from Shyam at the beginning of a year at interest. After 8 months, he again borrowed $ 362.50 at a rate of interest double that the former sum bears. At the end of the year, the sum of interest on both loans is $ 43.50. Find the first rate of interest per annum?
    a. 4.5%   b. 4.75%   c. 6.25%   d. 7.2%

67. The price of a TV is $ 10,000. If successive discount of 15%, 10% and 5% allowed. Then at what price does a customer buy?
    a. $ 7267.50   b.$ 7000
    c.$ 7200   d. Cannot be determined

68. Sarita sells a Phone at a profit of 20%. If she had bought it at 20% less and sold it for $ 180 less, she would have gained 25%. Find the cost price of the Phone.
    a. $ 800   b.$ 850   c.$ 900   d. $ 1000

69. During the first year, the population of a village is increased by 5% and in second year it is diminished by 5%. At the end of the second year, its population was 47880. What was the population at the beginning of the first year?
    a. 45500   b. 48000   c. 43500   d. 53000

70. According to a census report, the population growth rate of Faridabad is going to be an increasing A.P. with first year's rate as 5% and common difference as 5%, but simultaneously the migration rate is an increasing G.P. with first term as 1% and common ratio of 2. If population on 31 December 2010 is 1 million, then find in which year will Faridabad witness its first fall in population?
    a. 2016   b. 2014   c. 2013   d. 2019

71. The average marks of a student in four subjects is 75. If the student obtained 80 marks in the 5th subject then the new average is?
    a. 80   b. 76   c. 92   d. 95

72. The average weight of A, B and C is 84 kgs. If D joins, the average weight now is 80 kgs. If another person E who is 3 kgs heavier than D replaces A then the average weight of B, C, D and E becomes 79 kgs. what is the weight of A?
    a. 70 kg   b. 75 kg   c. 65 kg   d. 55 kg

73. A man can do a work in 10 days. With the help of a boy he can do the same work in 6 days. If they get $ 50 for that work , what is the share of that boy?
    a. $ 20   b. $ 40   c. $ 50   d. $ 60

74. A 10 hectare field is reaped by 2 men, 3 women and 4 children together in 10 days. If working capabilities of a man, a woman and a child are in the ratio 5 : 4 : 2, then a 16 hectare field will be reaped by 6 men, 4 women and 7 children in
    a. 5 days   b. 6 days   c. 7 days   d. 8 days

75. Three pipes A, B and C can fill cistern in 6 hrs. After working together for 2 hours, C is closed and A and B fill the cistern in 8 hrs. Then find the time in which the cistern can be filled by pipe C?
    a. 6 hrs   b. 12 hrs   c. 14 hrs   d. 20 hrs

76. Two pipes A and B can fill a tank in 24 minutes and 32 minute respectively. If both the pipes are opened simultaneously, after how much time should B be closed so that the tank is full in 18 minutes?
    a. 2 min.   b. 4 min.   c. 6 min.   d. 8 min

77. A and B run a kilometre and A wins by 25 sec. A and C run a kilometre and A wins by 275 m. When B and C run the same distance, B wins by 30 sec. The time taken by A to run a kilometre is
    a. 2 min 25 sec.   b. 2 min 50 sec.   c. 3 min 20 sec.   d. 3 min 30 sec

78. Aditya covered a certain distance at some speed. Had he moved 3 km/h faster he would have taken 40 minute less. If he had moved 2 km/h slower he would have taken 40 minutes more. The distance is:
    a. 40   b. 35   c. 49   d. 45

79. P, Q and R are the three towns on a river which flows uniformly. Q is equidistant from P and R. I row from P to Q and back in 10 hours and I can row downstream from P to R in 4 hours. Compare the speed of my boat in still water with that of the river.
    a. 5 : 3   b. 4 : 3   c. 6 : 5   d. 7 : 3

80. A motorboat travelling at some speed, can cover 25 km upstream and 39 km downstream in 8 h. At the same speed, it can travel 35 km upstream and 52 km downstream in 11 h. The speed of the stream is:
    a. 2 km/h   b. 3 km/h   c. 4 km/h   d. 5 km/h

81. In a bag, there are three types of coins 1 rupee, 50-paise and 25-paise in the ratio 3 : 8 : 20. There total value is Rs. 372. The total number of coins is:
    a. 1200   b. 961   c. 744   d. 612

82. 8 litres are drawn from a cask full of wine and is then filled with water. This operation is performed three more times. The ratio of the quantity of wine now left in cask to that of water is 16 : 65. How much wine did the cask hold originally?
    a. 18 litres   b. 24 litres   c. 32 litres   d. 42 litres

83. If a square is inscribed in a circle, the ratio of the area of the circle and the square is:
    a. 2 : 1   b. $\pi : 2$ c. $\pi : 1$ d. 11 : 7

84. Find the number of bricks, each measuring 25 cm × 12.5 cm × 7.5 cm, required to construct a wall 12 m long, 5 m high and 0.25 m thick, while the sand and cement mixture occupies 5 % of the total volume of wall?
    a. 6080   b. 3040   c. 1520   d. 12160

85. If three marbles are picked at random what is the probability that 2 are red and one is green?
    a. 6/55   b. 12/220   c. 9/110   d. 18/110

86. How many even numbers of four digits can be formed with the digits 0, 1, 2, 3, 4, 5 and 6 no digit being used more than once?
    a. 300   b. 400   c. 420   d. 500

87. What is the next number in the series 66, 36, 18, ?
    a. 3   b. 6   c. 8   d. 9

88. What is the value of ? in the series 0, 4, 6, 3, 7, 9, 6, ?, 12
    a. 8   b. 10   c. 11   d. 12

89. Solve the given equations
    I. $15x^2 - 46x + 35 = 0$
    II. $4y^2 - 15y + 14 = 0$
    a. if x > y   b. if x >= y   c. if x < y   d. if x =< y

90. Solve the given equations
    I. $7x + 6y + 4z = 122$
    II. $4x + 5y + 3z = 88$
    III. $9x + 2y + z = 78$
    a. if x < y = z   b. if x =<y< z   c. if x < y > z   d. if x = y > z

Directions (31 – 35): Study the following Pie-Chart carefully and answer the questions given below: A survey conducted on 2900 Villagers Staying in Various Villages and having Various Favourite Sport
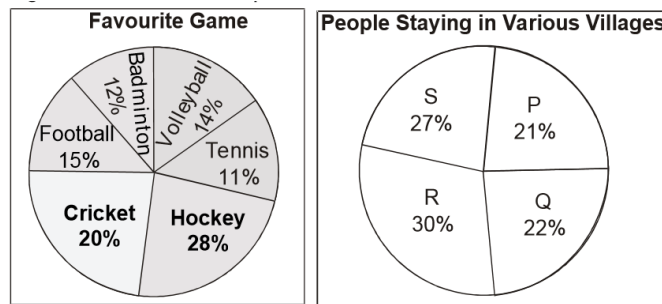
91. What is the total number of people having their favourite game Hockey and Badminton together?
    a.1200   b. 812   c. 388   d. None of these

92. How many people having favourite game Cricket?
    a.580   b. 420   c. 680   d. 480

93. If 40% of the people from village R have cricket as favourite game and 20% of the people have Tennis as favourite game. Then how many people like other game in village R?
    a.1440   b. 1540   c. 1640   d. None of these

94. If the favourite game of 40% people of village R is Hockey then what will be the Ratio of people who like Hockey expect village R and total no. of people in village P?
    a. 16 : 21   b. 21 : 16   c. 21 : 31   d. 31 : 21

95. 10% of the people from village R have favorite game Tennis then what is the no. of other villagers who like Tennis:
    a. 87   b. 58   c. 29   d. 232

Direction (36 – 40):Each of these examples is followed by three statements. You have to study the question and all the three statements given to decide whether any information provided in the statement(s) is redundant and can be dispensed with while answering the given question.

96. What is the area of Triangle ABC right angled at B.
    I. Length of AC is 5 cm.
    II. Perimeter of the triangle is four times of BC.
    III. angle BCA = 60°
    a. Only I   b. Only II   c. Only III   d. Either II or III

97. At what time will the train reach city X from city Y? I. The train will pass the other train of equal length of 200 m, running opposite in direction in 15 s. II. The train leaves city Y at 7.15 am for city X situated at a distance at 560 km. III. The 200 m long train crosses a signal pole in 10 s.
    a. Only I   b. Only II   c. Only III   d. II and III

98. What will be the sum of the ages of father and the son after five years?
    I. Father's present age is twice the present age of son.
    II. After ten years, the ratio of father's age to the son's age will become 12 : 7.
    III. Five years ago, the difference between the father's age and son's age was equal to son's present age.
    a. Only I or II   b. Only II or III   c. Only I or III   d. Only I or II or II

99. 12 men and 8 women can complete a piece of work in 10 days. How many days will it take for 15 men and 4 women to complete the same work?
    I. 15 men can complete the work in 12 days.
    II. 15 women can complete the work in 16 days.
    III. The amount of work done by a woman is three fourth of the work done by a man in one day.
    a. Only II   b. Only III   c. Only II or III   d. Any two of the three

100.   What is the length of a running train P crossing another running train Q.
    I. These two trains take 18 s to cross each other.
    II. These trains are running in opposite direction.
    III. The length of the train Q is 180 m
    a. Only I
    b. Only II
    c. Only III
    d. Cannot be answer even with the help of three statements.

Answer Key

1. a	47. d	93. d
2. a	48. b	94. a
3. c	49. b	95. d
4. c	50. a	96. d
5. b	51. b	97. a
6. d	52. c	98. d
7. d	53. d	99. d
8. d	54. c	100. d
9. c	55. a	
10. a	56. c	
11. b	57. a	
12. c	58. d	
13. b	59. d	
14. c	60. b	
15. c	61. b	
16. b	62. d	
17. a	63. c	
18. d	64. a	
19. c	65. d	
20. d	66. a	
21. b	67. a	
22. d	68. c	
23. b	69. b	
24. a	70. a	
25. b	71. b	
26. d	72. b	
27. a	73. a	
28. c	74. d	
29. a	75. b	
30. d	76. d	
31. c	77. c	
32. c	78. a	
33. b	79. a	
34. a	80. c	
35. c	81. b	
36. d	82. b	
37. b	83. b	
38. c	84. a	
39. b	85. c	
40. a	86. c	
41. d	87. c	
42. d	88. b	
43. a	89. a	
44. c	90. a	
45. a	91. d	
46. b	92. a	