

# Question Paper of JNU MCA 2017 by JMA

1. Find the maximum value of  $y = \frac{3x^2 + 9x + 17}{3x^2 + 9x + 7}$
- (a) 40 (b) 48 (c) 51 (d) None
2. Variance of first n natural number
- (a)  $\frac{n^2}{2}$  (b)  $\frac{n(n+1)}{2}$  (c)  $\frac{n^2 - 1}{12}$  (d) None
3. Rank of matrix
- $$\begin{bmatrix} 1 & 0 & 0 & 3 \\ 0 & 0 & 0 & 0 \\ 2 & 0 & 0 & 6 \end{bmatrix}$$
- (a) 1 (b) 2 (c) 0 (d) None of these

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4. If  $A = \begin{bmatrix} 1 & \omega & \omega^2 \\ \omega^2 & 1 & \omega \\ \omega & \omega^2 & 1 \end{bmatrix}$ , then  $A^2$  is equal to
- (a) zero matrix (b) unit matrix (c) A (d) None of these
5. If  $Z_k = \cos\left(\frac{\pi k}{10}\right) + i \sin\left(\frac{k\pi}{10}\right)$  the value of  $z_1 z_2 z_3 z_4$  is
- (a) 1 (b) -1 (c) 0 (d) None of these
6. If  $f(1) = 1, f(2) = 0$  and  $f_n = 4f_{n-1} - 4f_{n-2}$ , for  $n > 2$  then  $f_{10} =$
- (a) -4096 (b) -4225 (c) 2044 (d) 2446

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7. How many numbers from 1 to 300 (inclusive) which are divisible by 3 and 5 but not by 7
- (a) 19 (b) 16 (c) 18 (d) 20
8. A coin is tossed until a head appears. Expectation for head appearing first time on  $k^{\text{th}}$  trial is  $2^k$ . Find his expected gain ?
- (a) 0 (b) 2 (c)  $\infty$  (d) None of these

9. If A, B and C are three matrices such that,  $AB = I$  and  $BC = I$ . Then the matrix A is  
 (a) zero matrix (b) unit matrix (c) B (d) C
10. If three vertices of a parallelogram is  $z_1, z_2, z_3$  then the fourth vertex is  
 (a)  $z_1 + z_2 + z_3$  (b)  $z_1 + z_2 - z_3$  (c)  $z_1 - z_2 + z_3$  (d) None of these

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11. If U and V are two differentiable functions of variable x, y, z show that necessary & sufficient condition that u & v are functionally related by equation  $F(u, v) = 0$  is  
 (a)  $\nabla u \cdot \nabla v = 0$  (b)  $\nabla u \times \nabla v = 0$  (c) both (d) None
12.  $e^{-\lambda} \sum_{l=0}^{\infty} \frac{l \lambda^l}{l!}$   
 (a)  $e^\lambda$  (b)  $\lambda e^\lambda$  (c)  $\lambda$  (d) None
13.  $\tan 203^\circ + \tan 22^\circ + \tan 203^\circ \tan 22^\circ =$   
 (a) 0 (b) 1 (c) -1 (d) None of these

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14. If  $\theta \in \left[0, \frac{\pi}{2}\right]$ , then value of  $\theta$  which satisfies the equation  $6 \cos 2\theta + 2 \cos^2(\theta/2) + 2 \sin^2 \theta = 0$   
 (a)  $\frac{\pi}{6}$  (b)  $\frac{\pi}{3}$  (c)  $\frac{\pi}{4}$  (d) None of these
15. Eigen value of  $\begin{bmatrix} 1/2 & 1/2 \\ 1/2 & 1/2 \end{bmatrix}$  is  
 (a)  $\frac{1}{2}, \frac{1}{2}$  (b) 0, -1 (c) 1, 0 (d) 0, 0

16. If odds against a solving a problem is 4 : 3 and in favour of B is 7 is to 5 then probability that question will not be solved  
 (a)  $\frac{4}{21}$  (b)  $\frac{16}{21}$  (c)  $\frac{63}{84}$  (d)  $\frac{69}{84}$

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17. If  $ca \equiv cb \pmod{n}$  and  $\gcd(c, n) = d$  then  
 (a)  $a \equiv b \pmod{(n/d)}$  (b)  $a \equiv b \pmod{(n)}$  (c)  $a \equiv b \pmod{(d/n)}$  (d)  $a \equiv b \pmod{(nd)}$

18. Find the root of equation

$$\frac{1}{x+1} + \frac{1}{x+5} = \frac{1}{x+2} + \frac{1}{x+4}$$

- (a) -2 (b) -1/3 (c) -1/2 (d) -3

19. If a coin is tossed 4 times then find the expectation of no. of times head appearing

- (a) 4 (b) 1 (c) 2 (d) 3

20. If  $\vec{a} + \vec{b} + \vec{c} = 0$ , and  $|\vec{a}| = 3$  and  $|\vec{b}| = 5$ ,  $|\vec{c}| = 7$ , then angle between a and b is

- (a)  $\frac{\pi}{6}$  (b)  $\frac{\pi}{3}$  (c)  $\frac{2\pi}{3}$  (d) 0

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21. Find the missing term

2, 5, 9, 19, 37, ?

- (a) 74 (b) 73 (c) 75 (d) 77

22. The point (a, b + c), (b, a + c), (c, a + b) lies on

- (a) vertices of an equilateral triangle  
(b) vertices of a right angle triangle  
(c) lie on a circle  
(d) None of these

23. Binary addition of number (11011) and (10011) is

- (a) 101110 (b) 101010 (c) 11100 (d) None of these

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24. If an anticraft gun hit the target in 3-shot. The probability of hitting target in 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> target is 0.3, 0.2 & 0.1. Then the probability that the target is hit

- (a) 0.419 (b) 0.456 (c) 0.496 (d) None

25. If a card is drawn from a pack of 52 cards then the probability that it is queen or a spade

- (a)  $\frac{4}{13}$  (b)  $\frac{24}{52}$  (c)  $\frac{17}{52}$  (d)  $\frac{21}{52}$

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26. The necessary and sufficient condition that  $a^2 - b^2$  is odd

- (a) Both a and b are odd  
(b) Both a and b are even  
(c) One is odd and one is even or one is even or one is odd  
(d) None of these



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27. A student have to attempt exactly eight question out of 10. Then find the total no. of ways in which he can attempt at least three from the first five questions and at most four from the last 5  
(a) 25 (b) 30 (c) 35 (d) None of these
28. If  $f(x) = 3^{2x} + 1$  then find its inverse  
(a)  $2 \log_3(x + 1)$  (b)  $\log_2(x - 1)$  (c)  $3 \log_2(x - 1)$  (d) None of these
29. If the line OP makes an angle  $\alpha$ ,  $45^\circ$  and  $60^\circ$  with x, y and z axis respectively. Then  $\cos \alpha =$   
(a)  $\frac{1}{2}$  (b)  $\frac{1}{\sqrt{2}}$  (c)  $\frac{\sqrt{3}}{2}$  (d) 1

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30. Six fruits – Papaya, Apple, orange, banana, kiwi and Guava are arranged in two rows opposite to each other three in each row, such that  
(1) Papaya is not at the end of any row  
(2) Banana is seconds to the left of kiwi  
(3) Guava is placed next to papaya and is diagonally opposite to Banana  
(4) Orange is beside kiwi then the true statement among the following is  
(a) Apple and orange are placed diagonally opposite to each other  
(b) Banana is placed opposite to guava  
(c) Apple, guava and papaya are in the same row  
(d) None of the above is true
31. Let z be a complex number such that  $|z| = 1$  and  $z \neq \pm 1$  then all the value of  $\frac{z}{1-z^2}$  is  
(a) on the x-axis  
(b) on the y-axis  
(c) not on the x-axis but on a line parallel to the x-axis  
(d) None of these
32. If  $A = \{a, b, c\}$  and  $B = \{1, 2, 3, 4\}$  then total no. of one – one function from A to B  
(a) 14 (b) 6 (c) 8 (d) None

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33. If  $x_1 + x_2 + x_3 + x_4 = 13$  then total no. of solutions of equation if  $x_1, x_2, x_3, x_4$  are non-negative integers  
(a) 576 (b) 560 (c) 360 (d) None of these
34. The number of  $2 \times 2$  matrix whose entries are either 1 or  $-1$  is  
(a) 8 (b) 16 (c) 32 (d) None of these
35. Number of equivalence relation on set  $A = \{a, b, c\}$  will be  
(a) 6 (b) 12 (c) 8 (d) None of these



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36. The total no. of term between 1000 and 9999 with no digit repeated is  
(a) 4535 (b) 4536 (c) 4096 (d) None of these
37. If the position of Aryan is 8<sup>th</sup> from right and Nilesh is 12<sup>th</sup> from the left. If they interchange their positions then Nilesh is 21<sup>th</sup> from the left position of Aryan is  
(a) Seventeenth (b) Nineteenth (c) Sixteenth (d) None of these

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38. The no. of elements in the power set of power set of null set is  
(a) 0 (b) 1 (c) 2 (d) None of these
39. The Relation  $R = \{(1, 1), (2, 2), (3, 3), (1, 2), (2, 1), (2, 3), (1, 3)\}$  on set  $A = \{1, 2, 3\}$  is  
(a) reflexive (b) Symmetric (c) Transitive (d) equivalence
40. Find the variance of the pdf of a continuous random variable  $f(x) = \begin{cases} 1 \times 1 & x \leq 1 \\ 0 & \text{otherwise} \end{cases}$   
(a)  $\frac{1}{2}$  (b) 1 (c) 2 (d) 0

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41. Find the pair that is odd from other three terms  
(a) 12 – 144 (b) 15 – 180 (c) 18 – 198 (d) 21 – 252
42. If three vectors  $x, y$  and  $z$  starts from a common point and their heads in a plane then the vector  
(a)  $x \times y \times z$   
(b)  $x + y + z$   
(c)  $(x \times y) \times (y \times z) \times (z \times x)$   
(d)  $(x \times y) + (y \times z) + (z \times x)$

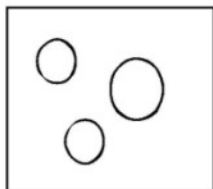
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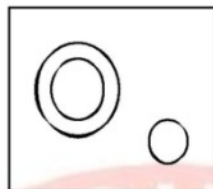
43. Find the correct Venn diagram for given statements

Statement 1 : yak, zebra, bear

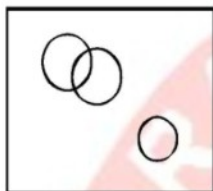
Statement 2 : sun, moon, star



(I)



(II)



(III)

- (a) only II and III      (b) Only I and III      (c) Only I and II      (d) None of these

44. No. of true statement in

I.  $\max(a, b) = \frac{1}{2}((a+b) + |a-b|)$

II.  $\min(a, b) = \frac{1}{2}((a+b) - |a-b|)$

III.  $\min(a, b, c) = \min[\min(a, b), c]$

- (a) only I and II      (b) only I and III      (c) only II and III      (d) All I, II, and III

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45. The some relationship obtained among the following alternatives Researcher : Historian : Scholar

- (a) History : Story : Book  
 (b) Epic : Novel : book  
 (c) Teacher : Graduate : poet  
 (d) Teacher : professor : Lecturer

46. How many true statements among the following

I.  $A \cup B = A \cup C \Rightarrow B = C$

II.  $A \cap B = A \cap C \Rightarrow B = C$

III.  $A \cup B \leq A \cap B \Rightarrow A = B$

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

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47. Fibonacci function defined by  $f_n = f_{n-2} + f_{n-1}$  such that  $f : \mathbb{N} \rightarrow \mathbb{N}$  and  $f(1) = 1, f(2) = 1$  then Fibonacci function is

- (a) one to one      (b) onto      (c) one one onto      (d) None of these

48. If circle  $x^2 + y^2 + 2g_1x + 2f_1y = 0$  &  $x^2 + y^2 + 2g_2x + 2f_2y = 0$  touch each other then

(a)  $g_1^2 + g_2^2 = f_1^2 + f_2^2$



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- (b)  $f_1g_2 = f_2g_1$   
(c)  $f_1f_2 = g_1g_2$   
(d)  $f_1^2 + g_1^2 = f_2^2 + g_2^2$

49. In a cricket match, 5 batsmen A, B, C, D, E scored an average of 36 runs. D scored 5 more than E, E scored 8 more than A, B scored as much as combined score of D and E and B and C together scored 107. How many runs did E score ?

- (a) 62 (b) 45 (c) 28 (d) 20

50. From the following words, find 2 different ones ?

- (A) LEVEL (B) FRETFUL (C) DRUID (D) VELOPE  
(E) CALORIC  
(a) a & b (b) b & c (c) c & d (d) d & e

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51. Find the median of the given series

Income	1000	1100	1200	1300	1400	1500
Person	18	22	21	18	28	15

- (a) 1200 (b) 1250 (c) 1300 (d) 1400

52. Three vectors  $2i + j - 2k$ ,  $i + j + 3k$  and  $xi + j$  are coplanar. Then x is

- (a) 5/8 (b) 3/4 (c) 8/5 (d) 4/3

53. A man, a woman, a dog, a cat, a dog and a girl are walking in a straight row. In how many way they can be arranged in such a way that the dog is between man and the boy.

- (a) 40 (b) 42 (c) 46 (d) None

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54. If 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> moment about are -1.5, 17, -30 and 108. Then the variance is

- (a) 21 (b) 19.5 (c) 14.75 (d) None of these

55. If a is a rational number and b is an irrational number then a + b is

- (a) Rational (b) irrational (c) complex number (d) None of these

56. z and w are two non-zero complex numbers such that  $|z| = |w|$  and  $\text{Arg } z + \text{Arg } w = \pi$ , then z equals

- (a)  $\bar{w}$  (b)  $-\bar{w}$  (c) .w (d) -w

57. A particle is moving around a circle  $x^2 + y^2 = 1$ . If the point  $(1/2, \sqrt{3}/2)$  if decreased with rate 3 unit per second then rate of change of x will be

- (a)  $3\sqrt{3}$  (b)  $2\sqrt{3}$  (c)  $3\sqrt{2}$  (d)  $\sqrt{2}$

58.  $\int_{-\infty}^{\infty} e^{-\frac{(x-7)^2}{32}}$

- (a)  $2\sqrt{\pi}$  (b)  $\frac{1}{2\sqrt{\pi}}$  (c)  $4\sqrt{2\pi}$  (d) None of these

59. The sum of the  $\sum_{x=0}^n \binom{m}{n} \binom{N-n}{n-x}$

- (a)  $\binom{M}{N}$  (b)  $\binom{N}{M}$  (c)  $\binom{N}{n}$  (d) None

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60.  $(573)_8 =$

- (a)  $(369)_{10}$  (b)  $(379)_{10}$  (c)  $(359)_{10}$  (d) None

61. Which of the following

(I)  $\lim_{n \rightarrow \infty} \frac{2^n}{n!}$

(II)  $\lim_{n \rightarrow \infty} \frac{\sin x}{n}$

(III)  $\lim_{n \rightarrow \infty} ((-n)^n n^2)$

Is / are conquering

- (a) (I) and (II) (b) (I) and (III) (c) (II) and (III) (d) None of these

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62. Let  $\{x_n\}$  be the sequence defined by  $x_1 = 1, x_2 = 2, x_n = \frac{1}{2}(x_{n-2} + x_{n-1}), n > 0$ . Given that  $\lim_{n \rightarrow \infty} x_n = x$

- (a)  $1 < x < 2$  (b)  $x > 2$  (c)  $x = \infty$  (d)  $x < 0$

63.  $f(x)$  and  $g(x)$  are two function gof means  $gof(x)$  if gof is one – one and  $f(x)$  is onto then  $g(x)$  is

- (a) one – one (b) onto (c) both one one onto (d) None

64. The number of true statement among following

(I)  $\lim_{x \rightarrow 0} f(x) = \begin{cases} x, & \text{if } x \text{ is rational} \\ 0, & \text{if } x \text{ is irrational} \end{cases}$

(II)  $\lim_{x \rightarrow 0} \left( x \sin \frac{1}{x} \right)$

(III)  $\lim_{x \rightarrow 0} \left( x + \frac{x}{|x|} \right)$

- (a) Exactly one does not exist  
(b) Exactly two does not exist  
(c) all does not exist



(d) None of these

65. There is a group of 100 people. Then At least how many people have their birthdays in same month  
 (a) 7 (b) 9 (c) 11 (d) None of these

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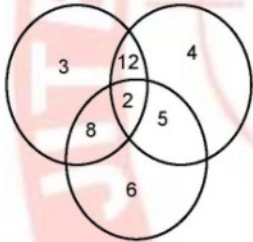
66. How many function does not exist

(I)  $\lim_{x \rightarrow 0} \frac{1}{x}$

(II)  $\lim_{x \rightarrow 0} \sin\left(\frac{1}{x}\right)$

(III)  $\lim_{x \rightarrow 0} \frac{x}{|x|}$  then

- (a) all exist (b) exactly two of them exist  
 (c) exactly one of them exist (d) None of these exist
67. The sample of 50 person is given reading newspaper x, y and z in the following venn diagram. Then find how many people in population of 10000 read atleast two new papers



- (a) 5000 (b) 5400 (c) 4400 (d) 4000

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68. In a certain code MACHINE is written as "LBBIHOD" then in that code language which word is coded is "SLIMFNB"  
 (a) RMSHEDC (b) RMTOFNB (c) TKULGMC (d) None of these

69. Find the correct conclusion out of the following statements

Statement :

- I : All trolley's are pulley's  
 II: Some pullys are chains  
 III : All chain are bells.

Conclusion

- (1) Some bells are trolleys  
 (2) No bells trolleys  
 (3) Some pulleys are bells  
 (4) All chain are pulleys  
 (a) (i) and (ii)

- (b) (ii) and (iv)  
 (c) either (i) or (ii) and (iii)  
 (d) either (i) or (ii) and either (iii) or (iv)

70. If the positive integers  $n + 1 > P$ , then the canonical form of  $n$  is

- (a)  $n = p_1^{k_1} p_2^{k_2} p_3^{k_3} \dots p_k^{k_k}$  where  
 (b)  $n = p_1 p_2 p_3 \dots p_n$  where  $P$  is primer  
 (c)  $n = 2n + 1$ , where  $p$  is prime  
 (d) None

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71. Find number of solution of the equation

$$2x + 3y - z = 5$$

$$x - 2y + 3z = 7$$

$$x + 5y - 4z = 0$$

- (a) unique solution  
 (b) no solution  
 (c) infinite solution  
 (d) solution does not exist

72. Let  $\{f_n\}$  be the Fibonacci sequence defined by  $f_1 = 1$ ,  $f_2 = 1$  and  $f_n = f_{n-1} + f_{n-2}$  for  $n > 2$ . It is defined that

$$x_n = \frac{f_n}{f_{n+1}} \text{ for } n \geq 1. \text{ Then the sequence is}$$

- (a) divergence  
 (b) convergence  $\frac{1}{2}(-1 + \sqrt{5})$   
 (c) convergence to  $\frac{1}{2}(1 + \sqrt{5})$   
 (d) None of these

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73. Number of correct statements

- (i) Every subgroup of cyclic group is cyclic  
 (ii) Let  $(G, )$  be a group and  $x \in G$  then  $x \lambda x^{-1} \in H \forall x \in H$ , then  $H$  be a subgroup in  $(G, )$   
 (iii) Let  $(G, )$  be a group  $a, b \in G$  then  $a o b = b o a \Rightarrow a, b \in H$  then  $H$  be a subgroup in  $(G, )$   
 (a) only 1 & 2 are correct statement  
 (b) only 2 & 3 correct statement  
 (c) All of these are correct  
 (d) only 1 & 3 are correct

74. A set  $\frac{2x+1}{x+1} < 1$ , then domain

- (a)  $(-2, 1)$  (b)  $(1, 2)$  (c)  $(-\infty, -2) \cup (1/2, \infty)$  (d) None of these

75. When Gauri were born her mother was 25 years older than her sister and her father 32 year older than her brother. If Gauri's brother is 6 years older than her and her mother is 3 year younger than her father then how old was Gauri's sister when Gauri was born



- (a) 10                                      (b) 8                                      (c) 7                                      (d) 3

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76. If  $A = \frac{1}{2} \begin{bmatrix} 1 & 1 \\ 1 & 1 \end{bmatrix}$  and  $B = \begin{bmatrix} -1 & 0 \\ 0 & -1 \end{bmatrix}$  and If  $AB = C$  then  $C^k$  is
- (a)  $\begin{bmatrix} (-1)^k & 0 \\ 0 & 1 \end{bmatrix}$                                       (b)  $\begin{bmatrix} 0 & 0 \\ 0 & 0 \end{bmatrix}$                                       (c)  $\begin{bmatrix} 1 & 0 \\ 0 & (-1)^k \end{bmatrix}$                                       (d) None of these
77. The function  $f = 3x^2 - x$
- (a) injective                                      (b) bijective                                      (c) surjective                                      (d) None of these
78. Greatest common divisor of (1800, 756)
- (a) 24                                      (b) 20                                      (c) 36                                      (d) None of these

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79. A bus starts from city x. The number of women in the bus is half of the number of men. In city y, 10 men leave the bus and five women enter. Now number of men and women are equal. In the beginning. How many passengers entered the bus ?
- (a) 15                                      (b) 30                                      (c) 36                                      (d) 45
80. How many even numbers between 20,000 to 60,000 is
- (a) 19998                                      (b) 19999                                      (c) 39999                                      (d) 39998
81. Priya started walking 10 meters in front of her. Then she turned right and walked 10 meter. Then after every time she moved to left and walk 5, 15, 15 meter respectively. Now how far she is from her starting point
- (a) 55 m                                      (b) 25 m                                      (c) 35 m                                      (d) 5 m

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82. For a complex number  $|x| = 1$  then real part of  $\frac{z-1}{z+1}$
- (a) 1                                      (b) -1                                      (c) 0                                      (d) None of these
83. If the letter starts with B alternative letters are small then the month 'SEPTEMBER' is written
- (a) sEpteMbEr                                      (b) SEptEMbEr                                      (c) SepTeMber                                      (d) SePTeMBeR
84. The point (4, 1) undergoes the following three transformations successively
- Reflexion about the line  $y = x$
  - translation through a distance 2 units along the positive direction of  $x$  - axis
  - Rotation of co-ordinate axes through an angle  $90^\circ$  about the origin in the clockwise direction.
- Then find position of the point is given by the co-ordinates

- (a)  $\left(\frac{1}{\sqrt{2}}, \frac{7}{\sqrt{2}}\right)$       (b)  $\left(-2, \frac{7}{\sqrt{2}}\right)$       (c)  $\left(\frac{-1}{\sqrt{2}}, \frac{7}{\sqrt{2}}\right)$       (d)  $\left(\sqrt{2}, \frac{7}{\sqrt{2}}\right)$

85. In series

6 4 1 2 2 8 7 4 2 1 5 3 8 6 1 7 1 4 1 3 2 8 6 has many pair of alternative have difference of 2

- (a) two      (b) three      (c) four      (d) five

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86. Let  $(x, y)$  be an euclidean group define on  $\mathbb{R}^2$  for  $(x_1, y_1), (x_2, y_2)$  such that  $(x_1, y_1) \sim (x_2, y_2)$  lie on a  $x_1^2 - x_2^2 = y_1^2 - y_2^2$ . Then find the equivalence class on  $(0, 0)$

- (a) pair of straight line      (b) Parabola      (c) Hyperbola      (d) None

87. Smaller triangle represent teacher, bigger triangle represent politicians, circle represent graduates and rectangle represent member or parliament



Then find who is teacher or graduates but not politicians.

- (a) B, D      (b) A, C      (c) A, E      (d) L, E

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88.  $(6143)^2 + 1 = 2(9561, 450)$  then find the value of  $(956, 450)$  in the form of sum of square of two number

- (a)  $(4173)^2 + (4137)^2$       (b)  $(4129)^2 + (4179)^2$   
(c)  $(4158)^2 + (4189)^2$       (d)  $(4193)^2 + (4129)^2$

89. The work done of force of equation  $F = 3xyi - 5zj + 10xk$  and given  $x = t^2 + 1, y = 2t^2, z = t^3$  at  $t = 1$  &  $t = 2$

- (a) 101      (b) 202      (c) 303      (d) 330

90. If in a certain code 15789 is written as EGKPT and 2436 is written as ALUR. How is 24539 written is that language

- (a) ALGUT      (b) ALGTU      (c) ALEUT      (d) ALGRT

91. If for a transformation T define in  $\mathbb{R}^3$  such that  $T(v_1, v_2, v_3) = (v_2, v_3, v_1)$  then the transformation  $t^{100}(v_1, v_2, v_3)$  is

- (a)  $(v_1, v_2, v_3)$       (b)  $(v_2, v_1, v_3)$       (c)  $(v_2, v_3, v_1)$       (d) None of these

92. Given a & b are real numbers

I.  $\left\{\frac{1}{2}(a+b)\right\}^2 \leq \frac{1}{2}(a+b)^2$

II.  $a < b \Rightarrow a < \sqrt{ab} < b$

III.  $ab > 0 \Rightarrow |a+b| = |a| + |b|$

Then number of correct statement is

- (a) Exactly 1 is correct
- (b) Exactly 2 is correct
- (c) All are correct
- (d) None of these

93. Number of statement which are correct

- (1) If all the diagonal elements of a matrix is zero, the matrix is singular
  - (2) If A is an upper triangular matrix, then  $(A^{-1})$  is lower triangular
  - (3) If A and B are Invertible matrix, then  $A + B$  is also Invertible
- (a) 1                                      (b) 2                                      (c) 3                                      (d) None