

**HSSC MOCK TEST - 178 (SOLUTION)**

1. (B) Word "ELECTION"

LCTN EEIO  
as one word

$$\begin{aligned} \text{The required no. of words} &= 5! \times \frac{4!}{2!} \\ &= 120 \times 2 = 1440 \end{aligned}$$

2. (D)  $S = 1 - \frac{1}{3} + \frac{1}{9} - \frac{1}{27} + \dots$

$$\Rightarrow S = \frac{1}{1 - \left(\frac{-1}{3}\right)} \Rightarrow S = \frac{1}{1 + \frac{1}{3}}$$

$$\Rightarrow S = \frac{1}{4/3} = \frac{3}{4}$$

3. (C)  $A^2 = A.A$

$$A^2 = AB.AB \quad [\because AB = A]$$

$$A^2 = A.BA.B \quad [\because BA = B]$$

$$A^2 = AI = A$$

4. (B) A and B are symmetric matrices

$$\therefore A' = A \text{ and } B' = B \quad \dots(i)$$

$$\text{Now, } (AB - BA)' = (AB)' - (BA)'$$

$$\Rightarrow (AB - BA)' = B'A' - A'B'$$

$$\Rightarrow (AB - BA)' = BA - AB \text{ [From eq(i)]}$$

$$\Rightarrow (AB - BA) = - (AB - BA)$$

Hence  $(AB - BA)$  is a skew-symmetric matrix.

5. (B) Series 4, -16, 64, -256,.....

$$\Rightarrow 2^2, -2^4, 2^6, -2^8, \dots$$

$$T_n = (-1)^{n+1} 2^{2n}$$

6. (C)  $C(26, n-1) = C(26, 4n+2)$

$$\Rightarrow {}^{26}C_{n-1} = {}^{26}C_{4n+2}$$

$$\text{here } n-1 + 4n+2 = 26$$

$$\Rightarrow 5n+1 = 26$$

$$\Rightarrow 5n = 25 \Rightarrow n = 5$$

7. (C)  $\vec{a} = 3\hat{i} + 4\hat{j} - \hat{k}$  and  $\vec{b} = -2\hat{i} + \lambda\hat{j} + 10\hat{k}$

are perpendicular, then

$$\vec{a} \cdot \vec{b} = 0$$

$$\Rightarrow (3\hat{i} + 4\hat{j} - \hat{k}) \cdot (-2\hat{i} + \lambda\hat{j} + 10\hat{k}) = 0$$

$$\Rightarrow -6 + 4\lambda - 10 = 0$$

$$\Rightarrow 4\lambda - 16 = 0 \Rightarrow \lambda = 4$$

8. (B)  $[(3x - 4y)^3(3x + 4y)^3]^4$

$$\Rightarrow [(3x - 4y)(3x + 4y)]^{12}$$

$$\Rightarrow (9x^2 - 16y^2)^{12}$$

$$\text{Total terms} = 12 + 1 = 13$$

9. (B) Given that  $P(A) = 0.4$ ,  $P(B) = 0.3$  and  $P(A \cap B) = 0.2$

$$\text{Now, } P(\overline{A \cup B}) = 1 - P(A \cup B)$$

$$\Rightarrow P(\overline{A \cup B}) = 1 - P(A) - P(B) + P(A \cap B)$$

$$\Rightarrow P(\overline{A \cup B}) = 1 - 0.4 - 0.3 + 0.2$$

$$\Rightarrow P(\overline{A \cup B}) = 1.2 - 0.7 = 0.5$$

10. (A) Given that the no. of white balls in the bag = 8

Let the no. of black balls in the bag = x

$$n(S) = 8 + x$$

Probability of drawing white ball from the

$$\text{bag} = \frac{8}{8+x}$$

Probability of drawing black ball from the

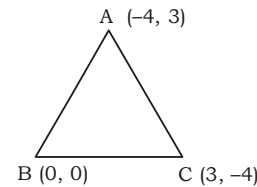
$$\text{bag} = \frac{x}{8+x}$$

A.T.Q.,

$$\frac{x}{8+x} = 3 \times \frac{8}{8+x}$$

$$x = 24$$

11. (A)



$$AB = \sqrt{(4 - 0)^2 + (3 - 0)^2}$$

$$AB = \sqrt{16 + 9}$$

$$AB = 5$$

$$BC = \sqrt{(3 - 0)^2 + (-4 - 0)^2}$$

$$BC = \sqrt{9 + 16} = 5$$

$$AC = \sqrt{(4 - 3)^2 + (3 - 4)^2}$$

$$AC = \sqrt{49 + 49} = 7\sqrt{2}$$

Perimeter of a triangle = AB + BC + AC

$$= 5 + 5 + 7\sqrt{2}$$

$$= 10 + 7\sqrt{2}$$

12. (B)  $(1+x)^n = {}^nC_0 + {}^nC_1x + {}^nC_2x^2 + \dots + {}^nC_nx^n$   
 $x=1$

$\Rightarrow (1+1)^n = {}^nC_0 + {}^nC_1 + {}^nC_2 + \dots + {}^nC_n$   
 $\Rightarrow {}^nC_0 + {}^nC_1 + {}^nC_2 + \dots + {}^nC_n = 2^n$

Sum of even binomial coefficients =  $\frac{2^n}{2}$   
 $= 2^{n-1}$

13. (B)  $9^8 + 8.9^7 + 28.9^6 + \dots + 1 = k \times 2^5 \times 5^7$

$\Rightarrow (1+9)^8 = k \times 2^5 \times 5^7$

$\Rightarrow 10^8 = k \times 2^5 \times 5^7$

$\Rightarrow 2^8 \times 5^8 = k \times 2^5 \times 5^7$

$\Rightarrow k = \frac{2^8 \times 5^8}{2^5 \times 5^7}$

$\Rightarrow k = 2^3 \times 5 \Rightarrow k = 40$

70. (B) As,  $(1)^3 \times 8 = 8$

Similarly,  $(3)^3 \times 8 = \mathbf{216}$

71. (A) As,  $\frac{14}{14 \times 3 + 14 \div 2} = \frac{49}{\dots}$

Similarly,  $\frac{18}{18 \times 3 + 18 \div 2} = \frac{63}{\dots}$

72. (C) Except **492765831**, all others are written with the help of 8 digits.

73. (D) Except **PHRASE**, in all others vowel A used two times.

74. (B) As,  $54 - 32 = 22$

Similarly,  $48 - 26 = \mathbf{22}$

75. (A) As,  $\frac{-2+0}{2} = -1$

and,  $\frac{-1+1}{2} = 0$

Similarly,  $\frac{10+2}{2} = \mathbf{6}$

76. (C)

77. (B)  $\begin{matrix} 1, 12, 7, 5, 2, 18, 1 \\ \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \\ \mathbf{A L G E B R A} \end{matrix}$

**HSSC MOCK TEST - 178 (ANSWER KEY)**

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

**Note:- If your opinion differs regarding any answer, please message the mock test and question number to 8860330003**

**Note:- Whatsapp with Mock Test No. and Question No. at 7053606571 for any of the doubts. Join the group and you may also share your suggestions and experience of Sunday Mock Test.**

**Note:- If you face any problem regarding result or marks scored, please contact 9313111777**