

MHT CET 2024 Question Paper

May 4 Shift 1 PCM

Maths Questions

Ques 1. Maximize $z = x + y$ subject to $x + y \leq 10$, $3y - 2x \leq 15$, $x \leq 6$, $x, y \geq 0$. Find the maximum value.

Ans. 10

Ques 2. The equation $(\cos p - 1)x^2 + (\cos p)x + \sin p = 0$, where x is a variable with real roots. then the interval of p may be any one of the following.

- A. $(0, 2\pi)$
- B. $(-\pi, 0)$
- C. $(-\pi/2, \pi/2)$
- D. $(0, \pi)$

Ans. D

Ques 3. If $AX = B$, where $A = \begin{bmatrix} 1 & -1 & 1 \\ 2 & 1 & -3 \\ 1 & 1 & 1 \end{bmatrix}$, $X = \begin{bmatrix} x \\ y \\ z \end{bmatrix}$, $B = \begin{bmatrix} 4 \\ 0 \\ 2 \end{bmatrix}$ then $2x + y - z$

- A. 2
- B. 1
- C. 4
- D. -2

Ans. A

Ques 4. The equation of the plane passing through the point (1, 1, 1) and perpendicular to the planes $2x + y - 2z = 5$ and $3x - 6y - 2z = 7$ is?

- A. $14x + 2y - 15z = 1$
- B. $-14x + 2y + 15z = 3$
- C. $14x - 2y + 15z = 27$
- D. $14x + 2y + 15z = 31$

Ans. D

Ques 5. Using the rules in logic, write the negation of the following:
 $(pq) \wedge (q \vee \sim r)$

Ans. $\sim q \wedge (\sim p \vee r)$

Ques 6. A student scores the following marks in five tests: 45, 54, 41, 57, 43. His score is not known for the sixth test. If the mean score is 48 in the six tests, then the standard deviation of the marks in six tests is:

- A. $100/3$
- B. $10/3$
- C. $10 / (\sqrt{3})$
- D. $100 / (\sqrt{3})$

Ans. C

Ques 7. A committee of 11 members is to be formed out of 8 males and 5 females. If m is the number of ways the committee is formed with at least 6 males and n is the number of ways with at least 3 females, then

- A. $n = m - 8$
- B. $m = n = 78$
- C. $m = n = 68$
- D. $m + n = 68$

Ans. B

Ques 8.

$$\int \frac{\operatorname{cosec} x}{\cos^2 \left(1 + \log \tan \frac{x}{2} \right)} dx \text{ is equal to}$$

A.

$$\sin^2 \left[1 + \log \tan \frac{x}{2} \right] + C$$

B.

$$\tan \left[1 + \log \tan \frac{x}{2} \right] + C$$

C.

$$-\tan \left[1 + \log \tan \frac{x}{2} \right] + C$$

D.

$$\sec^2 \left[1 + \log \tan \frac{x}{2} \right] + C$$

Ans. B

Ques 9. The value of $\sqrt{3} \operatorname{cosec} 20^\circ - \sec 20^\circ$ is

Ans. 4

Chemistry Questions

Ques 1. Which having highest first ionization energy

Ques 2. Half life of 1st Order reaction is 1 hr. then what is the fraction after 3hr

Ques 3. Question related to Stephan Reaction

Ques 4. Question related to Max Oxidation No.

Ques 5. Question related to BCC structure find Radius

Ques 6. Question related to Depression in freezing Point

Ques 7. Question related to BP in decreasing order

Physics Questions

Ques 1. Question related to V_{RMS}

Ques 2. Question related to Ideal Gas Equation

Ques 3. Question related to $C_p/C_v \rightarrow$ Monatomic Diatomic

Ques 4. Question related to Finding Amplitude

Ques 5. Question related to Finding overtone

Ques 6. Question related to Logic Gate