MHT CET 2024 Question Paper
May 9 Shift 1 & 2 PCM

Mathematics

Ques 1. The length of the perpendicular drawn from the point (1, 2, 3) to the line (z - 6)/3 = (y - 7)/2 = (z - 7)/- 2

A. 4 units
B. 5 units
C. 6 units
D. 7 units

Ans. D

Ques 2. If |a| = √3; |b|=5; |b||c| = 10, angle between b and c is π/3, a is perpendicular to b x c. Then the value of | a x (b x c) | is

A. 20
B. 30
C. 60
D. 40

Ans. B

Ques 3. Let X be random variable having Binomial distribution B(7, p). If P[X = 3] × 5P[X = 4], then variance of X is

A 7/6
B 35/36
C 77/36
D 1/36

Ans. B

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Ques 4. The particular solution of differential equation $e^{dy/dt} = (x + 1)$, y(0) = 3 is

A y = xlog(x) - x + 2
B y = (x + 1)log(x + 1) - x + 3
C y = (x + 1)log(x + 1) + x - 3
D y = xlog(x) + x - 2

Ans. B

Ques 5. The value of integral $\int_0^1 \sqrt{\frac{1-x}{1+x}}\,dx$ **is**

A. (π/2 + 1)
B. (π/2 - 1)
C. 1
D. -1

Ans. B

Ques 6. The Value of $\int_0^2 |2x-3|\,dx$ **is**

A. 3/10
B. 5/2
C. 10/3
D. ⅖

Ans. B

Ques 7. If α + β = π/2 and β + Y = α then the value of tan α is
A tan β + tan Y
B 2(tan β + tan Y)
C tan β + 2tan Y
D 2tan β + tan Y

Ans. C

Ques 8. If the mean an variance of a binomial variate X are 2 and 1 respectively, then the probability that X takes a value greater than 1, is
A 2/3
B 4/3
C 7/8
D 15/16

Ans. D

Ques 9. The sides of a triangle are sinα, cosα and √(1+sinα cosα) for som 0<a<π/2 Then, the greatest angle of the triangle is
A 60°
B 90°
C 120°
D 150°

Ans. C

Ques 10. If the curve $y^2 = 6x$, $9x^2 + by^2 = 16$ intersect each other at right angles, then the value of b is
A 9/2
B 4
C 6
D 7/2

Ans. 9/2

Ques 11. The maximum value of (log x)/x is
A 2/e
B e
C 7
D 1/e

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Ans. D

Physics

Ques 1. Sphere of colour black red white yellow are heated to a same temperature. The decreasing order of cooling is

Ans. Black > Red > Yellow > White

Ques 2. The ratio of shortest wavelength of Ballmer series to shortest wavelength of paschen serie

Ans. 4/9

Ques 3. What are Gyro magnetic ratio and bohr magneton

Ans. $e/2m_e$ and $eh/4\pi m$

Ques 4. Question on Combination of logic gates to find final output

Ques 5. From Current electricity To convert galvanometer into ammeter shunt is given find the resistance of Galvanometer

Ques 6. Question to find Magnetic field produced inside the solenoid
Ans. n -N/L

Ques 7. Parallel Combination of resistance given value of voltage given to find the current flowing through circuit

Ques 8. "A particle perform SHM. Having speed 6cm/sec at mean position and amplitude of 4cm. find the position of particle from mean position when the velocity of particle is 2cm/sec"
Ans. 4

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Chemistry

Ques 1. What is the rate law, if the rate is directly proportional to [B] square and independent on/of [A]?
Ans. Rate = $K[B]^2$

Ques 2. When ammoniacal silver nitrate reacts with organic compounds. This test is called
Ans. Tollens' test

Ques 3. How many unpaired electrons present in the element of atomic number 27 with +2 oxidation state?
Ans. 3

Ques 4. Calculate cryoscopic constant of....

Ques 5. Identify the name reaction, Swarts reaction and Witting reaction.

Ques 6. Which is an adiabatic process

Ques 7. IUPAC name and bond length of propan-1-ol and cyclobutane.

Ques 8. Reactivity of alkylalcohol towards haloacids

Ques 9. Ozonolysis of propene
Ans. μ= 1.73 BM

Ques 10. Ratio of abundance of Cl of atomic mass 35 and 37
Ans. 3:1

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