MATHS

BOOKS - CAREER POINT

MOCK TEST 7

Part B Chemistry

1. 4 lines and 5 circle are lie in a plane. Then all maximum no of points of intersection in this plane is -

A. 60

B. 72

C. 62

D. None of these

Answer: 4

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2. In an election the number of candidates is one more than the number of members to be elected . A votocr can cast any numbers to be

elected. If a voter can cast his vote in 254 ways, then the number.

A. 7

B. 10

C. 8

D. 6

Answer: 3

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3. The probability that a man can hit a target is $3/4$. He tries 5 times. The probability that he will hit the target at least three times is

A. $\frac{261}{364}$

B. $\frac{371}{(464)}$

C. $\frac{471}{502}$

D. $\frac{495}{512}$

Answer: 4

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4. A cricket club has 15 members out of which 5 are bowlers. They are put into a box and 11 are drawn at random, then the probability of getting an eleven containing at least 3 bowlers is

A. $7/13$

B. $6/13$

C. $11/15$

D. $12/13$

Answer: 4

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5. The negation of 'If Mohan is tall . Then he is handome'is -

A. Mohan is not tall and he is handsome

B. Mohan is tall and he is not handsome

C. Mohan is not tall and he is not handsome

D. None of these

Answer: 2

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6. If the roots of $ax^2 + bx + c$ are α, β and the roots of $Ax^2 + Bx + C = 0$ are $\alpha - K, \beta - K$, then $\frac{B^2 - 4AC}{b^2 - 4ac}$ is equal to -

A. 0

B. 1

C. $\left(\frac{A}{a}\right)^2$

D. $\left(\frac{a}{A}\right)^2$

Answer: 3

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7. If a, b, c,d positive distinct number are in H.P., them :

A. $ab > cd$

B. $ac > bd$

C. $ad > bc$

D. None of these

Answer: 3

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8. Let h(x) = Min. $\left(x, x^2\right)$, for every real number x, then

A. h is discountious for all x

B. h is differentiable for all x

C. h(x) = 2, for all $x < 1$

D. h is not differentiable at two value of x

Answer: 4

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9. $\lim_{n \to \infty} \frac{n^p \sin^2(n!)}{n+1}, 0 < p < 1$, is equal to-

A. 0

B. ∞

C. 1

D. None of these

Answer: 1

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10. $\lim_{n \to \infty} \sum_{r=1}^{n} \left(\frac{r^3}{r^4 + n^4} \right)$ equals to-

A. $\ln 2$

B. $\frac{1}{2} \ln 2$

C. $\frac{1}{3} \ln 2$

D. $\frac{1}{4} \ln 2$

Answer: 4

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11. A line throught the point A (2,0), which makes an angle of 30° with the positive direction of x-axis is rotated about A in clockwise direction through an angle 15°. The eqation of the straight line in the new position is -

A. $\left(2-\sqrt{3}\right)x-y-4+2\sqrt{3}=0$

B. $\left(2-\sqrt{3}\right)x+y-4+2\sqrt{3}=0$

C. $\left(2-\sqrt{3}\right)x-y+4+2\sqrt{3}=0$

D. None of these

Answer: 1

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12. If the equation of incircle of an equilateral triangle is $x^2 + y^2 + 4x - 6y + 4 = 0$ then equation of circum circle of the triangle is

A. $x^2 + y^2 + 4x - 6y + 23 = 0$

B. $x^2 + y^2 - 4x + 6y - 23 = 0$

C. $x^2 + y^2 + 4x - 6y - 23 = 0$

D. $x^2 + y^2 - 4x - 6y - 23 = 0$

Answer: 3

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13. If a focal chord of $y^2 = 4ax$ makes an angle $\alpha \in \left[0, \frac{\pi}{4}\right]$ with the positive direction of the x-axis, then find the minimum length of this focal chord.

A. 4a

B. 6a

C. 8a

D. 2a

Answer: 3

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14. The number of irrational terms in the expansion of $\left(2^{1/5}+3^{1/10}\right)^{55}$ is

A. 47

B. 56

C. 50

D. 48

Answer: 3

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15. There are two circles whose equation are $x^2 + y^2 = 9$ and $x^2 + y^2 - 8x - 6y + n^2 = 0, n \in Z$. If the

two circles have exactly two common tangents, then the number of possible values of n is 2 (b) 8 (c) 9 (d) none of these

A. 2

B. 8

C. 9

D. None of these

Answer: 3

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16. Ther period of the function

$$f(x) = \frac{|\sin x| - |\cos x|}{|\sin x + \cos x|}$$ is

A. $\frac{\pi}{2}$

B. 2π

C. π

D. None of these

Answer: 3

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17. The lines $2x + y - 1 = 0, ax + 3y - 3 = 0$ and $3x + 2y - 2 = 0$ are concurrent for -

A. All a

B. a= 4 only

C. $1 \leq a \leq 3$

D. $a < 0$ only

Answer: 1

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18. The coordinates of a point on the line $\frac{x-1}{2} = \frac{y+1}{-3} = z$ at a distance $4\sqrt{14}$ form the point (1, -1,0), is

A. $(-13, 9, 4)$

B. $(-7, 11, -4)$

C. $(11, -7, -4)$

D. None of these

Answer: 2

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19. If a,b,c are in A.P., then 10^{ax+10}, 10^{bx+10} ,10^(ex +10)` are in -

A. A.P

B. G.P only when $x > 0$

C. G.P for all x

D. G.P only when $x < 0$

Answer: 3

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20. The position vectors of the points A, B, and C are $\hat{i}+\hat{j}+\hat{k}$. $\hat{i}+5\hat{j}-\hat{k}$ and $2\hat{i}+3\hat{j}+5\hat{k}$, respectively . The greatest angle of triangle ABC is -

A. 120°

B. 90°

C. $\cos^{-1}(3/4)$

D. None of these

Answer: 2

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21. Let $\hat{a}$, $\hat{b}$ and $\hat{c}$ be unit vectors and α, β, and γ the angles between the vectors $\hat{a}$, $\hat{b}$, $\hat{b}$, $\hat{c}$ and $\hat{c}$, $\hat{a}$ respectively . If $\hat{a}+\hat{b}+\hat{c}$ is also a unit vectors, then $\cos\alpha+\cos\beta+\cos\gamma$ is equal to -

A. -1

B. 3

C. -3

D. 1

Answer: 1

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22. $(1+\sec 2\theta)\left(1+\sec 2^2\theta\right)\left(1+\sec 2^3\right.$ is equal is

A. $\cot 8\theta \tan \theta$

B. $\tan 4\theta \cot \theta$

C. $\tan 8\theta \cot \theta$

D. none of these

Answer: 3

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23. The mean of five observation is 4 and their variance is 5.2 . If three of these observations are 1,2 and 6, then the other two are,

A. 2 and 9

B. 3 and 8

C. 4 and 7

D. none of these

Answer: 3

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24.

$h(x) = 3f\left(\frac{x^2}{3}\right) + f\left(3 - x^2\right) \forall x \in (-3, 4)$

where $f''(x) > 0 \forall x \in (-3, 4)$, then h(x) is

A. increasing in $\left(\frac{3}{4}, 4\right)$

B. decreasing in $\left(-3, -\frac{3}{2}\right)$

C. increasing in $\frac{-3}{2}, 0\Big)\Big)$

D. decreasing in $\left(0, \frac{3}{2}\right)$

Answer: 1

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25. If x = - 1 and x =2 are exterme points of the function y=a $\log x + bx^2 + x$, then-

A. $a = 2, b = 1/2$

B. $a = 2, b = -1/2$

C. $a = -2, b = 1/2$

D. $a = -2, b = -1/2$

Answer: 2

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26. adj- $\begin{bmatrix} 1 & 0 & 2 \\ -1 & 1 & -2 \\ 0 & 2 & 1 \end{bmatrix} = \begin{bmatrix} 5 & a & -2 \\ 1 & 1 & 0 \\ -2 & -2 & b \end{bmatrix}$,

then [a, b] is equal to-

A. $[-41]$

B. $[-4-1]$

C. $[41]$

D. $[4-1]$

Answer: 3

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27. If $(X) = f(X), f(0) = 1$ then $\int \frac{dx}{f(x) + f(-x)} =$

A. $\log\left(e^{2x} + 1\right) + C$

B. $\log\left(e^{x} + e^{-x}\right) + c$

C. $\tan^{-1}(e^x) + c$

D. None of these

Answer: 3

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28. If f(x) is a polynomial satiysfying

$$f(x) = \frac{1}{2}\begin{vmatrix} f(x) & f\left(\frac{1}{x}\right) & -f(x) \\ 1 & & f\left(\frac{1}{x}\right) \end{vmatrix}$$ and f(2) = 17, then the value of f(5) is -

A. 126

B. 626

C. -124

D. 626

Answer: 2

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29. The solution the differential equation

$\cos x \sin y \, dx + \sin x \cos y \, dy = 0$ is

A. $\frac{\sin x}{\sin y} = c$

B. $\cos x + \cos y = c$

C. $\sin x + \sin y = c$

D. $\sin x . \sin y = c$

Answer: 4

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30. If $x^2 - x + 1 = 0, \sum_{n=1}^{5} \left(x^n + \frac{1}{x^n} \right)^2$ equals -

A. 8

B. 10

C. 12

D. 14

Answer: 1

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