# MATHS

## BOOKS - SAI MATHS (TELUGU ENGLISH)

## EAMCET -2016 (TS)

**Mathematics**

**1.** If $f(x) = x^2 - 2x + 4$ then the set of values of x satisfying $f(x-1) = f(x+1)$ is

A. $\{-1\}$

B. $\{-1, 1\}$

C. $\{1\}$

D. $\{1, 2\}$

**Answer: C**

Watch Video Solution

**2.** The number of real linear functions f(x) satisfying $f(f(x)) = x + f(x)$is

A. 0

B. 4

C. 5

D. 2

**Answer: D**

View Text Solution

**3.** The remainder when $7^n - 6n - 50 (n \in N)$ is divided by 36, is

A. 22

B. 23

C. 1

D. 21

**Answer: B**

View Text Solution

**4.** Consider the system of equations

$ax + by + cz = 2$

$bx + cy + az = 2$

$cx + ay + bz = 2$

Where a,b,c are real number such that $a + b + c = 0$ Then the system

A. has two solutions

B. in inconsistant

C. has unique solutions

D. has infinitely many solutions

**Answer: B**

View Text Solution

**5.** Suppose A and B are two square matrices of same order. If A, B are symmetric matrices, then AB - BA is

A. a symmetric matrix

B. a skew symmetric

C. a scalar matrix

D. a triangular matrix

**Answer: B**

Watch Video Solution

**6.** If $A(x) = \begin{vmatrix} x+1 & 2x+1 & 3x+1 \\ 2x+1 & 3x+1 & x+1 \\ 3x+1 & x+1 & 2x+1 \end{vmatrix}$ then $\int_0^1 A(x)dx =$

A. $15$

B. $\frac{-15}{2}$

C. $-30$

D. $-5$

**Answer: B**

View Text Solution

**7.** If $z = x + iy$ is a complex number such that $z^{1/3} = a + ib$, thent he value of $\frac{1}{a^2 + b^2}\left(\frac{x}{a} + \frac{y}{b}\right) =$

A. -1

B. -2

C. 0

D. 2

**Answer: B**

View Text Solution

**8.** The locus of z. satisfying $|z| + |z - 1| = 3$ is

A. a circle

B. a pair of straight lines

C. an ellipse

D. a parabola

**Answer: C**

View Text Solution

**9.** If the point $z = (1 + i)(1 + 2i)(1 + 3i) \ldots . (1 + 10i)$ lies on a circle

A. $10!$

B. $2 \times 3 \times 4 \times \ldots . \times 10$

C. $2 \times 5 \times 10 \times \ldots . \times 101$

D. $11!$

**Answer: C**

View Text Solution

**10.** The minimum value of $|z-1|z-5|$ is

A. 5

B. 4

C. 3

D. 2

**Answer: B**

View Text Solution

**11.** The number of real roots of $\left|x^2\right| - 5|x| + 6 = 0$ is

A. 2

B. 3

C. 4

D. 1

**Answer: C**

Watch Video Solution

**12.** If $alpah, \beta$ are the roots of $x^2 - x + 1 = 0$ then the quadratic equation whose roots are $\alpha^{2015}, \beta^{2015}$ is

A. $x^2 - x + 1 = 0$

B. $x^2 + x + 1 = 0$

C. $x^2 + x - 1 = 0$

D. $x^2 - x - 1 = 0$

**Answer: A**

View Text Solution

**13.** If $\alpha, \beta, \gamma$ are roots of $x^3 - 5x + 4 = 0$ then the quadratic equation whose roots are $\alpha^{2015}, \beta^{2015}$ is

A. 12

B. 13

C. 169

D. 144

**Answer: D**

View Text Solution

**14.** Suppose $\alpha, \beta, \gamma$ are roots $x^3 + x^2 + 2x + 3 = 0$. If $f(x) = 0$ is a cubic polynomial equation whose roots are $\alpha + \beta, \beta + \gamma, \gamma + \alpha$ then $f(x) =$

A. $x^3 + 2x^2 - 3x - 1$

B. $x^3 + 2x^2 - 3x + 1$

C. $x^3 + 2x^2 + 3x - 1$

D. $x^3 + 2x^2 + 3x + 1$

**Answer: C**

View Text Solution

**15.** The number of 4 letter words that can be formed with the letters in the word EQUATION with at least one letter repeated is

A. 2400

B. 2408

C. 2416

D. 2432

**Answer: C**

Watch Video Solution

**16.** The number of divisors of $7!$ is

A. 24

B. 72

C. 64

D. 60

**Answer: D**

Watch Video Solution

**17.** The sum of the series $1+\frac{2}{3}\left(\frac{1}{8}\right)+\frac{2\times5}{3\times6}\left(\frac{1}{8}\right)^2+\frac{2\times5\times8}{3\times6\times9}\left(\frac{1}{8}\right)^2+\ldots\ldots\ldots$ is

A. $\frac{4}{3\sqrt{49}}$

B. $\frac{3\sqrt{49}}{4}$

C. $\frac{4}{3\sqrt{81}}$

D. $\frac{3\sqrt{81}}{4}$

**Answer: A**

View Text Solution

**18.** If C denotes the binomial coefficient $.^{n}C_{r}$ then $(-1)C_0^2 + 2C_1^2 + 5C_2^2 + \ldots\ldots + (3n-1)C_n^2 =$

A. $(3n-2)2nC_n$

B. $\left(\frac{3n-n}{2}\right)2nC_n$

C. $(5+3n)2nC_n$

D. $\left(\frac{3n-5}{2}\right)2nC_n$

**Answer: B**

View Text Solution

**19.**

$$\frac{x+1}{x^4(x+2)} = \frac{A}{x} + \frac{B}{x^2} + \frac{C}{x^3} + \frac{D}{x^4} + \frac{E}{x+2} \Rightarrow B + D + E =$$

A. $A + C$

B. $A - C$

C. $2A + C$

D. $2A + 2C$

**Answer: A**

Watch Video Solution

**20.** If $\cos^3\theta + \cos^3\left(\frac{2\pi}{3} + \theta\right) + \cos^3\left(\frac{4\pi}{3} + \theta\right) = a\cos 3\theta,$

then a =

A. $\frac{1}{4}$

B. $\frac{3}{4}$

C. $\frac{5}{4}$

D. $\frac{7}{4}$

**Answer: B**

Watch Video Solution

**21.** $\frac{\cos 13^0 - \sin 13^0}{\cos 13^0 + \sin 13^0} + \frac{1}{\cot 148^0} =$

A. 1

B. -1

C. 0

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

**Answer: C**

View Text Solution

**22.** If $\cos x + \cos y + \cos \alpha = 0$ and $\sin x + \sin y + \sin \alpha = 0$, then $\cot\left(\frac{x+y}{2}\right)$ =

A. $\sin \alpha$

B. $\cos \alpha$

C. $\tan \alpha$

D. $\cot \alpha$

**Answer: D**

Watch Video Solution

**23.** If $f(x) = \cos^2 x + \cos^2 2x + \cos^2 3x$, then the number of vlaues of $x \in [0, 2\pi]$ for which $f(x) = 1$ is `

A. 4

B. 6

C. 8

D. 10

**Answer: D**

View Text Solution

**24.** The value of x which satisfies $\sin\left(\cot^{-1} x\right) = \cos\left(\tan^{-1} + (1 + x)\right)$ is

A. $-\frac{1}{2}$

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

C. $-1$

D. 1

**Answer: A**

Watch Video Solution

**25.** For $\theta \in \left(0\frac{\pi}{2}\right)$, $\text{sech}^{-1}(\cos\theta) =$

A. $\log\left|\tan\left(\frac{\pi}{6}+\frac{\theta}{2}\right)\right|$

B. $\log\left|\tan\left(\frac{\pi}{3}+\frac{\theta}{2}\right)\right|$

C. $\log\left|\tan\left(\frac{\pi}{4}+\frac{\theta}{2}\right)\right|$

D. $\log\left|\tan\left(\frac{\pi}{4}-\frac{\theta}{2}\right)\right|$

**Answer: C**

View Text Solution

**26.** If $\Delta ABC$ is such that $\angle A = 90^0, \angle B \neq \angle C$, then $\frac{b^2 + c^2}{b^2 - c^2}\sin(B - C) =$ .

A. $\frac{1}{3}$

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

C. 1

D. $\frac{3}{2}$

**Answer: C**

View Text Solution

**27.** In $\Delta ABC$, if $a^2 + b^2 + c^2 = 8R^2$, then the triangle is

A. right angled triangle

B. equilateral triangle

C. scalence triangle

D. obtuse angled triangle

**Answer: A**

Watch Video Solution

**28.** In $\Delta ABC$, is $2R + r = r_2$ then $\angle B =$

A. $\frac{\pi}{3}$

B. $\frac{\pi}{4}$

C. $\frac{\pi}{6}$

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

**Answer: D**

View Text Solution

**29.** $\Delta ABCEF$ is a regular hexagon whose centre is O. Then $\overline{AB} + \overline{AC} + \overline{AD} + \overline{AE} + \overline{AF} =$

A. $2\overline{AO}$

B. $3\overline{AO}$

C. $5\overline{AO}$

D. $6\overline{AO}$

**Answer: D**

View Text Solution

**30.** ABCD is a parallelogram and P is the mid point of the side AD. The line BP meets the diagonal AC in Q. Then the ratio $AQ:QC$=.

A. $1:2$

B. $2:1$

C. $1:3$

D. $3:1$

**Answer: A**

View Text Solution

**31.** The vectors $overl \in (2i) - \overline{3j} + \bar{k}, i - \overline{2j} + \overline{3k}, \overline{3i} + \bar{j} - \overline{2k}$

A. are linearly dependent

B. are linearly independent

C. form sides of a triangle

D. are colplanar

**Answer: B**

View Text Solution

**32.** $\bar{a}, \bar{b}, \bar{c}$ are three vectors such that $|\bar{a}| = 1, |\bar{b}| = 2, |\bar{c}| = 3$ and $\bar{b}, \bar{c}$ are perpendicular . If projection of $\bar{b}$ on $\bar{a}$ is the same as the projection of $\bar{c}$ on $\bar{a}$, then $|\bar{a} - \bar{b} + \bar{c}| =$

A. $\sqrt{2}$

B. $\sqrt{7}$

C. $\sqrt{14}$

D. $\sqrt{21}$

**Answer: C**

View Text Solution

**33.** If $\bar{a}\bar{b}, \bar{c}$ are unit vectors satisfying the relation $\bar{a} + b + \sqrt{3}\bar{c} = 0$, then the angle between a and b is

A. $\frac{\pi}{6}$

B. $\frac{\pi}{4}$

C. $\frac{\pi}{3}$

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

**Answer: C**

View Text Solution

**34.** $\bar{a}$ is perpendicular to both $\bar{b}$ and $\bar{c}$. The angle between $\bar{b}$ and $\bar{c}$ is $\frac{2\pi}{3}$. If $|\bar{a}| = 2, |\bar{b}| = 3, |\bar{c}| = 4$, then $\bar{c}.\left(\bar{a} \times \bar{b}\right) =$

A. $18\sqrt{3}$

B. $12\sqrt{3}$

C. $8\sqrt{3}$

D. $6\sqrt{3}$

**Answer: B**

View Text Solution

**35.** If the average of the first n numbers in the sequence 148, 146, 144,....., is 125, then n =

A. 18

B. 25

C. 30

D. 36

**Answer: B**

Watch Video Solution

**36.** The standard deviation of $a, a+d, a+2d, \ldots\ldots, a+2nd$ is

A. nd

B. $n^2 d$

C. $\sqrt{\frac{n(n+1)}{3}}d$

D. $\sqrt{\frac{n(n+3)}{3}}d$

**Answer: C**

View Text Solution

**37.** Two events A and B are such that $P(A)=\frac{1}{4}, P(A \mid B)=\frac{1}{4}$ and $P(B \mid A)=\frac{1}{2}$ Consider the following statements :

(I) $P\left(\overline{A} \mid \overline{B}\right)=\frac{3}{4}$

(II) A and B are mutually exclusive

(III) $P(A \mid B)+P\left(A \mid \overline{B}\right)=1$

Then

A. Only (I) is correct.

B. Only (I) and (II) are correct.

C. Only (I) and (III) are correct.

D. Only (II) and (III) are correct.

**Answer: A**

View Text Solution

**38.** A five digit number is formed by the digits 1,2,3,4, 5 with no digit being repeated. The probability that the number is divisible by 4, is

A. $\frac{1}{5}$

B. $\frac{2}{5}$

C. $\frac{3}{5}$

D. $\frac{4}{5}$

**Answer: A**

View Text Solution

**39.** When a pair of six faced fair dice are thrown, the probability that the sum of the numbers on the two dice is greater that 7, is

A. $\frac{1}{3}$

B. $\frac{5}{12}$

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

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

**Answer: B**

View Text Solution

**40.** In a family with 4 children, the probability that there are at least two girls is

A. $\frac{1}{2}$

B. $\frac{9}{16}$

C. $\frac{3}{4}$

D. $\frac{11}{16}$

**Answer: D**

View Text Solution

**41.** If on an average, out of 10 ships, one is drowned, then what is the probability that out of 5 ships atleast 4 reach safely ?

A. $14(0.9)^5$

B. $1.4(0.9)^5$

C. $0.14(0.9)^4$

D. $1.4(0.0)^4$

**Answer: D**

Watch Video Solution

**42.** If $A(5, -4)$ and $B(7, 6)$ are points in a plane, then the set of all points P(x,y) in the plane such that $AP : PB = 2 : 3$ is

.

A. a circle

B. a hyperbola

C. an ellipse

D. a parabola

**Answer: A**

View Text Solution

**43.** If the axes are rotated anticlockwise through an angle $90^\circ$ then the equation $x^2 = 4ay$ is changed to the equation

A. $y^2 = 4ax$

B. $x^2 = -4ay$

C. $y^2 = 4ax$

D. $x^2 = 4ay$

**Answer: A**

View Text Solution

**44.** The combined equation of the straight lines of the form $y = kx + 1$ (where k is an integer) such that the point of intersection of each with the line $3x + 4y = 9$ has an integer as its $x -$ coordinate is

A. $(y + x + 1)(y + 2x - 1) = 0$

B. $(y + x - 1)(y + 2x + 1) = 0$

C. $(y + x + 1)(y + 2x + 1) = 0$

D. $(y + x - 1)(y + 2x - 1) = 0$

**Answer: D**

View Text Solution

**45.** A value of k such that the straight lines $y - 3kx + 4 = 0$ and $(2k - 1)x - (8k - 1)y - 6 = 0$ are perpendicular is

A. $\frac{1}{6}$

B. $-\frac{1}{6}$

C. 1

D. 0

**Answer: A**

View Text Solution

**46.** The length of the segment of the straight line passing through , (3,3) and (7,6) cut off by the coordinate axes is

A. $\frac{4}{5}$

B. $\frac{5}{4}$

C. $\frac{7}{4}$

D. $\frac{4}{7}$

**Answer: B**

View Text Solution

**47.** The equation of the pair of straight lines through the point (1,1) and perpendicular to the pair of straight lines $3x2 - 8xy + 5y^2 = 0$ is

A. $5x^2 + 8xy + 3y^2 - 14x - 18y + 16 = 0$

B. $5x^2 + 8xy + 3y^2 - 18x - 14y + 16 = 0$

C. $5x^2 - 8xy + 3y^2 - 18x - 14y + 32 = 0$

D. $5x^2 - 8xy + 3y^2 - 14x - 18 + 32 = 0$

**Answer: B**

View Text Solution

**48.** The combined equation of the three sides of a triangle is $(x^2 - y^2)(2x + 3y - 6) = 0$. If the point $(0, \alpha)$ lies in the interior of this triange then

A. $-2 < \alpha < 0$

B. $-2 < \alpha < 2$

C. $0 < \alpha < 2$

D. $\alpha \geq 2$.

**Answer: C**

View Text Solution

**49.** The point where the line $4x - 3y + 7 = 0$ touches the circule $x^2 + y^2 - 6x + 4y - 12 = 0$ is

A. $(1, 1)$

B. $(1, -1)$

C. $(-1, 1)$

D. $(-1, -1)$

**Answer: C**

View Text Solution

**50.** The normal to the circle given by $x^2 + y^2 - 6x + 8y - 144 = 0$ at (8,0) meets the circle again at

the point

A. $(2, -16)$

B. $(2, 16)$

C. $(-2, 16)$

D. $(-2, -16)$

**Answer: D**

View Text Solution

**51.** For all real value of k, the polar of the point $(2k, k-4)$ with respect to $x^2+y^2-4x-6y+1=0$ passes through the point

A. (1,1)

B. (1,-1)

C. (-3,1)

D. (3,1)

**Answer: D**

View Text Solution

**52.** If the circles $x^2 + y^2 - 2\lambda x - 2y - 7 = 0$ and $3\left(x^2 + y^2\right) - 8x + 29y = 0$ are orthogonal then $\lambda =$

A. 4

B. 3

C. 2

D. 1

**Answer: D**

View Text Solution

**53.** The radical centre of the circles $x^2 + y^2 = 1, x^2 + y^2 - 2x - 3 = 0$ and $x^2 + y^2 - 2y - 3 = 0$ is

A. (1,1)

B. (1,-1)

C. (-1,1)

D. (-1,-1)

**Answer: D**

View Text Solution

**54.** From a point (C,0) three normals are drawn to the parabola $y^2 = x$. Then

A. $C < \frac{1}{2}$

B. $C = \frac{1}{2}$

C. $C > \frac{1}{2}$

D. $\frac{1}{2} > C > \frac{1}{4}$

**Answer: C**

View Text Solution

**55.** The point of intersection of the parabolas $y^2 = 5x$ and $x^2 = 5y$ lie on the line

A. $x + y = 10$

B. $x - 2y = 0$

C. $x - y = 0$

D. $2x - y = 0$

**Answer: C**

View Text Solution

**56.** If S and S' are the foci of the ellipse $\frac{x^2}{25} + \frac{y^2}{16} = 1$ and if PSP' is a focal chord with $SP = 8$ then SS'=

A. $4 + S'P$

B. $S'P - 1$

C. $4 + SP$

D. $SP - 1$

**Answer: A**

View Text Solution

**57.** Let $A(2\sec\theta, 3\tan\theta)$ and $B(2\sec\phi 3\tan\phi)$ where $\theta + \phi = \frac{\pi}{2}$, be two points on the hyperbola $\frac{x^2}{4} - \frac{y^2}{9} = 1$ If $(\alpha, \beta)$ is the point of intersection of normals to the hyperbola at A and B, then $\beta =$

A. $\frac{-13}{3}$

B. $\frac{13}{3}$

C. $\frac{3}{13}$

D. $\frac{-3}{13}$

**Answer: A**

View Text Solution

**58.** Point $A(3, 2, 4)B\left(\frac{33}{5}, \frac{28}{5}, \frac{38}{5}\right)$, and (9,8,10) are given. The ratio in which B divided $\overline{AC}$ is

A. $5:3$

B. $2:1$

C. $1:3$

D. $3:2$

**Answer: D**

View Text Solution

**59.** If the angle between the lines whose direction cosines are $-\frac{2}{\sqrt{21}}, \frac{C}{\sqrt{21}}, \frac{1}{\sqrt{21}}$ and $\frac{3}{\sqrt{54}}, \frac{3}{\sqrt{54}}, \frac{6}{\sqrt{54}}$ is $\frac{\pi}{2}$, then the

value of C is

A. 6

B. 4

C. -4

D. 2

**Answer: B**

View Text Solution

**60.** The image of the point (5,2,6) with respect to the plane $x + y + z = 9$ is

A. $(3, -5, 2)$

B. $\left(\frac{7}{2}, -1, 5\right)$

C. $\left(\frac{7}{3}, -\frac{2}{3}, \frac{10}{3}\right)$

D. $\left(\frac{7}{3}, \frac{2}{3}, -\frac{5}{3}\right)$.

**Answer: C**

View Text Solution

61. $\lim_{x \to \propto} \left[\frac{x^2 + x + 3}{x^2 - x + 2}\right]^x =$

A. $\propto$

B. $c$

C. $e^4$

D. $e^2$

**Answer: D**

View Text Solution

**62.** The values of p and q so that the function

$$f(x)=\begin{cases}(1+|\sin x|)^{\frac{p}{\sin x}}, & \frac{\pi}{6}<x<0\\ q, & x=0\\ e^{\frac{\sin 2x}{\sin 3x}}, & 0<x<\frac{\pi}{6}\end{cases}$$

is continous at $x=0$ is

A. $p=\frac{1}{3}, q=e^{2/3}$

B. $p=0, q=e^{2/3}$

C. $p=\frac{2}{3}, q=e^{2/3}$

D. $p=-\frac{2}{3}, q=e^{2/3}$

**Answer: D**

View Text Solution

**63.** If $y = \tan^{-1}\left[\frac{5\cos x - 12\sin x}{12\cos x + 5\sin x}\right]$, then $\frac{dy}{dx} =$

A. 1

B. -1

C. -2

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

**Answer: B**

View Text Solution

**64.** $\frac{d}{dx}y = \tan^{-1}\left[\frac{\sqrt{1+\sin x} - \sqrt{1-\sin x}}{\sqrt{1+\sin x} + \left(\sqrt{1-\sin x}\right)}\right. =$

A. 1

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

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

D. -1

**Answer: C**

View Text Solution

**65.** If $y = a\cos(\sin 2x) + b\sin(\sin 2x)$, then $y^n + (2\tan 2x)y =$

A. 0

B. $4(\cos^2 2x)y$

C. $-4(\cos^2 2x)y$

D. $(\cos^2 2x)y$

**Answer: C**

View Text Solution

**66.** The length of the segment of the tangent line to the curve $x = a\cos^3 t, y = a\sin^3 t$, at any point on the curve cut off by the coordinate axes is

A. 4a

B. a

C. $a^2$

D. 2a

**Answer: B**

View Text Solution

**67.** The area of the triangle formed by the positivex-axis,the tangentand normal to the curve $x^2 + y^2 = 16a^2$ at the point $\left(2\sqrt{2a}, 2\sqrt{2a}\right)$ is

A. $a^2$

B. $16a^2$

C. $4a^2$

D. $8a$

**Answer: D**

View Text Solution

**68.** Define $f(x) = \frac{1}{2}[|\sin x| + \sin x], 0 < x \leq 2\pi$. Then , f is

A. increasing in $\left(\frac{\pi}{2}, \frac{3\pi}{2}\right)$

B. decreasing in $\left(0, \frac{\pi}{2}\right)$ and decreasing in $\left(\frac{\pi}{2}, \pi\right)$

C. increasing in $\left(0, \frac{\pi}{2}\right)$ and decreasing in $\left(\frac{\pi}{2}, \pi\right)$

D. increasing in $\left(0, \frac{\pi}{4}\right)$ and decreasing in $\left(\frac{\pi}{4}, \pi\right)$.

**Answer: C**

View Text Solution

**69.** The smallest value of the constant $m > 0$ for which $f(x) = 9mx - 1 + \frac{1}{x} \geq 0$ for all $x > 0$, is

A. $\frac{1}{9}$

B. $\frac{1}{16}$

C. $\frac{1}{36}$

D. $\frac{1}{81}$

**Answer: C**

View Text Solution

70. $\int \frac{(x^2+1)}{x^2+7x^2+1} dx =$

A. $\frac{1}{3}\tan^{-1}\left(\frac{x^2-1}{3x}\right)+c$

B. $\tan^{-1}\left(\frac{x^2-1}{x}\right)+c$

C. $\frac{1}{3}\tan^{-1}\left(\frac{x^2-1}{x}\right)+c$

D. $\frac{1}{\sqrt{3}}\tan^{-1}\left(\frac{x^2-1}{x}\right)+c$

**Answer: A**

View Text Solution

71. $\int \frac{x^3}{\sqrt{1+x}} dx =$

A. $\sqrt{1+x^2} - \frac{x}{3}(1+x^2)^{3/2} + c$

B. $x\sqrt{1+x^2} + \frac{2}{3}(1+x^2)^{3/2} + c$

C. $x^2\sqrt{1+x^2} - \frac{2}{3}(1+x^2)^{3/2} + c$

D. $x^2\sqrt{1+x^2} - \frac{1}{3}(1+x^2)^{1/2} + c.$

**Answer: C**

View Text Solution

72. $\int \frac{dx}{\cos(x+4)\cos(x+2)} =$

A. $\frac{1}{\sin 2}\log\left|\cos(x+4)^2\right| + c$

B. $\frac{1}{2}\log\left|\frac{\sec(x+2)}{\sec(x+4)}\right| + c$

C. $\frac{1}{\sin 2}\log\left|\frac{\sec(x+4)}{\sec(x+2)}\right|+c$

D. $\log\left|\frac{\sec(x+4)}{\sec(x+2)}+c\right|$

**Answer: C**

View Text Solution

73. $\int\frac{2x+2}{\sqrt{x^2-4x-5}}dx=$

A. $\sqrt{x^2-4x-5}+\log\left|x+\sqrt{x^2-4x-5}\right|c$

B. $\log\left|\sqrt{x^2-4-5}\right|+\sqrt{x^2-4x-5}+c$

C. $\sqrt{x^2-4x-5}+6\log\left|(x-2)+\sqrt{x^2-4x-5}\right|+c$

D. $2\sqrt{x^2-4x-5}+6\log\left|(x-2)+\sqrt{x^2-4x-5}\right|+c$

**Answer: D**

View Text Solution

74. $\int_0^{\pi/4} \frac{\sin x + \cos x}{7 + 9\sin 2x} dx =$

A. $\frac{\log 3}{4}$

B. $\frac{\log 3}{36}$

C. $\frac{\log 7}{12}$

D. $\frac{\log 7}{24}$

**Answer: D**

View Text Solution

75. $\int_0^{\pi/4} \left[\sqrt{\tan x} + \sqrt{\cot x}\right] dx =$

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

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

C. $\frac{3\pi}{\sqrt{2}}$

D. $\pi$

**Answer: A**

View Text Solution

**76.** If the area bounded by the curves $y = ax^2$ and $x = ay^2, (a > 0)$ is 3.sq. units then the value of a is

A. $\frac{2}{3}$

B. $\frac{1}{3}$

C. 1

D. 4

**Answer: B**

View Text Solution

**77.** Let $p \in IR$, then the differential equation of the family of curves $y = (\alpha + \beta x)3e^{px}$, where $\alpha, \beta$ are arbitary constants , is

A. $y^n + 4py^1 + p^2y =$

B. $y^n - 2py^1 + p^2y = 0$

C. $y^n + 2py^1 - p^2y = 0$

D. $2^{\in} + 2py^1 + p^2y = 0.$

**Answer: B**

View Text Solution

**78.** The solution of the differential equaiton $3xy' - 3y + \left(x^2 - y^2\right)^{1/2} = 0$, satisfying the condition $y(1) = 1$ is

A. $3\cos^{-1}\left(\frac{y}{x}\right) = \ln|x|$

B. $3\cos\left(\frac{y}{x}\right) = \ln|x|$

C. $3\cos^{-1}\left(\frac{y}{x}\right) = 2\ln|x|$

D. $3\sin^{-1}\left(\frac{y}{x}\right) = \ln|x|$

**Answer: A**

View Text Solution

**79.** The solution of the differential equation $y^{-1} = \frac{1}{e^{-y} - x}$, is

A. $x = e^{-y}(y + c)$

B. $y + e^{-y} = x + c$

C. $x = e^{y}(y + c)$

D. $x + y = e^{-y} + c$

**Answer: A**

View Text Solution

## Physics

**1.** Electron microscope is based on the principle of

A. Photoelectric effect

B. Wave nature of electron

C. Susperconductivity

D. Laws of electromagnetic induction

**Answer: B**

Watch Video Solution

**2.** Force is given by the expression F = A cos (Bx) + C cos (Dt), where x is displacement and t is time. The dimension of $\frac{D}{R}$ is same as that of

A. Velocity

B. Velocity gradient

C. Angular momentum

D.

**Answer: A**

Watch Video Solution

**3.** A car accelerates from rest with $2m/s^2$ on a straight line path and then comes to rest after applying brakes. Total distance travelled by the car is 100 m in 20 seconds. Then, the maximum velocity attained by the car is

A. 10m/s

B. 20m/s

C. 15m/s

D. 5m/s

**Answer: A**

Watch Video Solution

**4.** A body is falling freely from a point A at a certain height from the ground and passes through points, B,C and D (vertically as shown below) so that $BC = CD$. The time taken by the particle to move from B to C is 2 seconds and from C to D 1 second. Time taken to move from A to B in seconds is

A. 0.6

B. 0.5

C. 0.2

D. 0.4

**Answer: B**

View Text Solution

**5.** A particle moves from (1,0,3) to the point (-3,4,5) when a force $F = \hat{i} + 5\hat{k}$ acts on it. Amount of work done in joules is

A. 14

B. 10

C. 6

D. 15

**Answer: C**

Watch Video Solution

**6.** A particle is projected with velocity $2\sqrt{gh}$ and at an agnle $60^\circ$ to the horizontal so that it just clears two walls of equal height h which are at a distance 2h from each other. The time taken by the particle to travel between these two wall is

A. $2\frac{\sqrt{(2h)}}{g}$

B. $\frac{\sqrt{(h)}}{2g}$

C. $2\frac{\sqrt{(h)}}{g}$

D. $\frac{\sqrt{(h)}}{g}$

**Answer: C**

Watch Video Solution

**7.** A body of mass 20kg is moving on a rough horizontal plane. A block of mass 3kg is connected to the 20kg mass by a string

of negligible mass through a smooth pulley as shown in the figure. The tension in the string is 27N. The coefficient of kinetic friction between the heavier mass and the surface is $(g = 10m/s^2)$

A. 0.025

B. 0.035

C. 0.35

D. 0.25

**Answer: B**

View Text Solution

**8.** Two messes $m_1$ and $m_2$ are placed on a smooth horizontal surface and are connected by a string of negligible mass. A horizontal force F is applied on the mass $m_2$ as shown in the figure. The tension in the string is

A. $\left(\frac{m_1}{m_1+m_2}\right)F$

B. $\frac{m_2F}{m_1+m_2}$

C. $\left(\frac{m_1}{m_2}\right)F$

D. $\frac{m_2F}{m_1}$

**Answer: A**

View Text Solution

**9.** A body of mass 3kg moving with a velocity $\left(2\hat{i}+2\hat{j}+3\hat{k}\right)$ m/s collides with another body of mass 4kg moving with a velocity $\left(3\hat{i}+2\hat{j}-3\hat{k}\right)$ m/s. The two bodies stick together after collision. The velocity of the composite body is

A. $\frac{1}{7}\left(4\hat{i}+6\hat{j}-3\hat{k}\right)$

B. $\frac{1}{7}\left(18\hat{i}+17\hat{j}-3\hat{k}\right)$

C. $\frac{1}{7}\left(6\hat{i}+4\hat{j}-6\hat{k}\right)$

D. $\frac{1}{7}\left(9\hat{i}+8\hat{j}-6\hat{k}\right)$

**Answer: B**

Watch Video Solution

**10.** A simple pendulum of length L carries a bob of mass m. when the bob is at its lowest position, it is given that the monimum horizontal speed necessary for it to mvoe in a vertical circle about the point of suspension. When the string in horizontal, the net force on the bob is

A. $\sqrt{10}mg$

B. $\sqrt{5}mg$

C. 4mg

D. 1mg

**Answer: A**

Watch Video Solution

**11.** A system of two particles is having masses $m_1$ and $m_2$. If the particle of mass $m_1$ is pushed towards the centre of mass of particles through a distance d, by what distance the particle of mass $m_2$ should be moved so as to keep the centre of mass of particles at the original position ?

A. $\frac{m_1}{m_1 + m_2} d$

B. $d$

C. $\frac{m_1}{m_2} d$

D. $\frac{m_2}{m_1} d$

**Answer: C**

Watch Video Solution

**12.** A thin uniform circular disc of mass M and radius R is rotating in a horizonatl plane about an axis passing through its centre and perpendicular to its plane with an angular velocity $\omega$. Another disc of same thickness and radius but of mass $\frac{1}{8}$ M is placed gently on the first disc coaxially. The anuglar velocity of the system is now

A. $\frac{9}{8}\omega$

B. $\frac{5}{9}\omega$

C. $\frac{1}{3}\omega$

D. $\frac{2}{9}\omega$

**Answer: A**

Watch Video Solution

**13.** 9 kg solution is poured into a glass U-tube as shown in the figure below. The tube's inner diameter is $2\frac{\sqrt{\pi}}{5}m$ and the solution oscillates freely up and down about its position of equilibrium $(x = 0)$. The period of oscillation in seconds is (1 $m^3$ of solution has a mass $\mu = 900kg.\ g = 10m/s^2$, Ignore frictional and surface tension effects).

A. 0.1

B. 10

C. $\sqrt{\pi}$

D. 1

**Answer: A**

View Text Solution

**14.** The boides of masses 100 kg and 8100 kg are held at a distance of 1 m. The gravitational field at a point on the line joining at them is zero. The gravitational potential at the point in J/kg is $\left(G = 6.67 \times 10^{-11} Nm^{2/kg^2}\right.$

A. $-6.67 \times 10^{-7}$

B. $-6.67 \times 10^{-10}$

C. $-13.34 \times 10^{-7}$

D. $-6.67 \times 10^{-9}$

**Answer: A**

Watch Video Solution

**15.** Uranium has two isotopes of masses 235 and 238 units. If both of them are present in uranium hexafluoride gas, find the

percentage ratio of difference in rms velocities of two isotopes to the rms velocity of heavier isotope.

A. 1.64

B. 0.064

C. 0.64

D. 6.4

**Answer: C**

Watch Video Solution

**16.** A source of frequency 340 Hz is kept above a vertical cylindrical tube closed at lower end. The length of the tube is 120 cm. Water is slowly poured in just enough to produce

resonance. Then, the minimum height (velocity of sound = 340 m/s) of the water level in the tube for that resonance is

A. 0.75m

B. 0.25m

C. 0.95m

D. 0.45m

**Answer: D**

Watch Video Solution

**17.** A thin convex lens of focal length f made of crown glass is immersed in a liquid of refreactive index $\mu_1(\mu_1 > \mu_C)$ where $\mu_c$ is the refractive index of the crown glass.

The convex lens now is

A. A convex lens of longer focal length

B. A convex lens of shorter focal length

C. A divergent lens

D. A convex lens of focal length $(\mu_c - \mu_1)f$

**Answer: C**

Watch Video Solution

**18.** Two convex lenses of focal lengths $f_1$ and $f_2$ form imgaes with magnification $m_1$ and $m_2$ when used individually for an object kept at the same distance from the lenses. Them $f_1 / f_2$ is

A. $\frac{m_1(1+m_1)}{m_2(1+m_2)}$

B. $\frac{m_1(1+m_2)}{m_2(1+m_1)}$

C. $\frac{m_2(1+m_2)}{m_1(1+m_2)}$

D. $\frac{m_2(1+m_2)}{m_1(1+m_1)}$

**Answer:**

Watch Video Solution

**19.** With the help of telescope that has an objective of diameter 200 cm. it is proved that ligh of wavelengths of the order of 6400 $\mathring{A}$ coming from a star can be easily resolved. Then, the limit of resolution is

A. $39 \times 10^{-4} deg$

B. $39 \times 10^{-8} rad$

C. $19.5 \times 10^{-8} rad$

D. $19.5 \times 10^{-8} deg$

**Answer: B**

Watch Video Solution

**20.** Two charged identical metal spheres A and B repel each other with a force of $3 \times 10^{-8} N$ Another idenitcal uncharged sphere C is touhced with sphere A and then it is placed mid way between A and B. Then the magnitude of net force on C is

A. $1 \times 10^{-5} N$

B. $3 \times 10^{-5} N$

C. $2 \times 10^{-5} N$

D. $5 \times 10^{-5} N$

**Answer: B**

Watch Video Solution

**21.** The electrostatic potential inside a charged sphere is given as $V = Ar^2 + B$, where r is the disatance from the centre of the sphere, A and B are constant. Then, the charge density in the sphere is

A. $16A \in_0$

B. $-6A \in_0$

C. $20A \in_0$

D. $-15A \in_0$

**Answer: B**

Watch Video Solution

**22.** Two electric resistors have equal values of resistance R. Each can be operated with a power of 320 walts [w] at 220 volts. If the two resistors are connected in series to a 110 volts electric supply, then the power generated in each resistor is

A. 90 watts

B. 80watts

C. 60watts

D. 20watts

**Answer: D**

Watch Video Solution

**23.** A current of 1 A is flowing along the side of an equilateral triangle of side $4.5 \times 10^{-2}$ m. the magnetic field at the centroid of the triangle is $\left(\mu_0 = 4\pi \times 10^{-7} H/m\right)$

A. $4 \times 10^{-5} T$

B. $2 \times 10^{-5} T$

C. $4 \times 10^{-4} T$

D. $2 \times 10^{-4} T$

**Answer: B**

Watch Video Solution

**24.** A charged particle (charges = q, mass = m) is rotating in a circle of radius R with uniform speed V ratio of its magnetic

moment $(\mu)$ to the angular momentum (L) is

A. $\frac{q}{2m}$

B. $\frac{q}{m}$

C. $\frac{q}{4m}$

D. $\frac{2q}{m}$

**Answer: A**

Watch Video Solution

**25.** Two small magnets have their masses and lengths in the ratio 1 : 2. the maximum torques experienced by them in a uniform magnetic field are the same. For small oscillations, the ratio of their time periods is

A. $\frac{1}{2\sqrt{2}}$

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

C. $\left(\frac{1}{2}\right)$

D. $2\sqrt{2}$

**Answer: A**

Watch Video Solution

**26.** Two coils have mutual inductance 0.005 H. The current changes in the first coil according to equation $I = I_0 \sin \omega t$, where $I_0 = 10A$ and $\omega = 100\pi$ rad $s^{-1}$. The maximum value of induced emf in the second coil is

A. 5

B. $5\pi$

C. $0.5\pi$

D. $\pi$

**Answer: B**

Watch Video Solution

**27.** A capacitance of $\left(\frac{10^{-3}}{2\pi}\right)$ F and an inductance of $\left(\frac{100}{\pi}\right)$ mH and a resistance of $10\Omega$ are connected in series with an AC voltage source of 220 V, 50 Hz. The phase angle of the circuit is 60^(@)`

A. $60^\circ$

B. $30^\circ$

C. $45^\circ$

D. $90^\circ$

**Answer: C**

Watch Video Solution

**28.** Two equations are given below:

(A) $\int E.\, dA = \frac{Q}{\varepsilon_0}$

(B) $\int B.\, dA = 0$

They are

A. (A)-Ampere's law

(B)-Gauss law for electricity

B. (A)-Gauss law for electric fields

(B)-Gauss law for magnetic fields

C. (A)-Faraday law

(B) - Gauss law for electric fields

D. Both (A) and (B) Faraday law

**Answer: B**

Watch Video Solution

**29.** A charged particle is accelerated from rest through a certain potenetial difference. The de-Broglie wavelength is $\lambda_1$ when it is acceleated through $V_1$ and is $\lambda_2$ when accelerated through $V_2$. Then ratio $\lambda_1 / \lambda_2$ is

A. $V_1^{3/2} : V_2^{3/2}$

B. $V_2^{1/2} : V_1^{1/2}$

C. $V_1^{1/2} : V_2^{1/2}$

D. $V_1^2 : V_2^2$

**Answer: B**

Watch Video Solution

**30.** If the first line of Lyman series has a wavelengths 1215.4 Å, the first line of Balmer series is appproximately

A. $4864A^{\circ}$

B. $1025.5^{\circ}$

C. $6563A^{\circ}$

D. $6400A^{\circ}$

**Answer: C**

Watch Video Solution

**31.** A certain radioactive element disintegrates with a decay constant of $7.9 \times 10^{-10}/s$ At a given instant of time, if the activity of the sample is equal to $55.3 \times 10^{11}$ disintegration/second then number of nuclei at that instant of time ia

A. $7.0 \times 10^{21}$

B. $4.27 \times 10^{13}$

C. $4.27 \times 10^{3}$

D. $6 \times 10^{23}$

**Answer: A**

Watch Video Solution

**32.** A semiconductor has equal electron and hole concentration of $2 \times 10^8 m^{-3}$. On doping with a certain impurity, the eletron concendration increases to $4 \times 10^{10} m^{-3}$, then the new hole concentration of the semiconductor is

A. $10^6 m^{-3}$

B. $10^8 m^{-3}$

C. $10^{10} m^{-3}$

D. $10^{12} m^{-3}$

**Answer: A**

Watch Video Solution

**33.** A message signal of 12 kHz and peak voltage 20 V is used to modulate a carrier wave frequency 12 MHz and peak voltage 30 V. then, the modulation index is

A. 0.32

B. 6.7

C. 0.67

D. 67

**Answer: C**

Watch Video Solution

Chemistry

**1.** Assertion (A) Atoms with completely filled and half-filled subshells are stable.

Reason (R ) Completely filled and half filled subshells have symmetrical distribution of electrons and have maximum exchange energy.

The correct answers is

A. (A) and ( R) are correct , ( R) is the correct explanation of (A)

B. (A) and ( R) are correct , ( R) is not correct explanation of (A).

C. (A) is correct , but (R ) is correct

D. (A) is not correct, but ( R) is correct

**Answer: A**

Watch Video Solution

**2.** The element with the electronic configuration $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^1$ is

A. Cu

B. Ca

C. Cr

D. Co

**Answer: A**

Watch Video Solution

**3.** Among the following the isoelectronic specie (S) is/are

(i) $O^{2-}, F^-, NA^+, Mg^{2+}$

(ii) $Na^+, Mg^+, AI^{3+}, F^-$

(iii) $N^{3-}, O^2, F^-, Ne$

A. (i) & (ii)

B. (i), (ii) & (iii)

C. (ii) & (iii)

D. (i)& (iii)

**Answer: D**

Watch Video Solution

**4.** What is the atomic number of the element with symbol Uus?

A. 117

B. 116

C. 115

D. 114

**Answer: A**

Watch Video Solution

**5.** 

View Text Solution

**6.** The order of covalent character of KF, KI

A. $KCI < KF < KI$

B. $KI < KCI < KF$

C. $KF < KI < KCI$

D. $KF < KCI < KI$

**Answer: D**

Watch Video Solution

**7.** If the kinetic energy in j, of $CH_4$ (molar mass $= 16gmol^{-1}$) at T (K) is X, the kinetic energy in j , of $O_2$ (molar mass = 32 g $mol^{-1}$) at the same temperature is

A. X

B. 2X

C. $X^2$

D. $\frac{X}{2}$

**Answer: A**

Watch Video Solution

**8.** The given figure shows the Maxwell distrubution of molecular speeds of a gas at three different temperatures $T_1, T_2$ and $T_3$ . The correct order of temperature is :

A. $T_1 > T_2 > T_3$

B. $T_1 > T_3 > T_2$

C. $T_3 > T_2 T_1$

D. $T_2 > T_3 > T_1$.

**Answer: D**

View Text Solution

**9.** In Haber's process 50.0g of $N_2$ [g] and 10.0 g of $H_2$ [g] are mixed to produce $NH_3$ [g]. What is the number of moles of $NH_3$ [g] formed?

A. $3.33$

B. $2.36$

C. $2.01$

D. $5.36$

**Answer: A**

Watch Video Solution

**10.** The following reaction occurs in acidic medium

$KMnP_4 + 8H^+ 5e^- \rightarrow K^+ Mn^{2+} + 4H_2O$

what is the equivalent weight of $KMnO_4$?

[Molecular weight of $KMnO_4 = 158$]

A. $79.0$

B. $31.6$

C. $158.0$

D. $39.0$

**Answer: B**

Watch Video Solution

**11.** Given

$N_2(g) + 3H_2(g) \rightarrow 2NH_3(g), \Delta_r H^\theta = -92.4 kJ mol^{-1}$

What is the standard enthalpy of formation of $NH_3$ gas ?

A. $-92$

B. $+46$

C. $+92$

D. $-46$

**Answer: D**

Watch Video Solution

**12.** Which one of the following is correct?

A. The equilibrium constant $(K_c)$ is independent of temperature.

B. The value of $K_c$ is independent of initial concentrations of reactants and products.

C. At equilibrium, the rate of the forward reaction is twice the rate of the backward reaction.

D. The equilibrium constant $(K_c)$ for the reaction $Ni(s) + 4CO(g) \Leftrightarrow Ni(CO)_4(g)$ is , $\frac{[Ni(CO)_4]}{[CO]}$

**Answer: A**

Watch Video Solution

**13.** pH of an aqueous solution of $NH_4CI$ is

A. 7

B. $> 7$

C. $< 7$

D. 1

**Answer: C**

Watch Video Solution

**14.** What is the change in the oxidation state of Mn in the reaction of $MnO_4^-$ with $H_2O_2$ in acidic medium?

A. $7 \rightarrow 4$

B. $6 \rightarrow 4$

C. $7 \rightarrow 2$

D. $6 \rightarrow 2$

**Answer: C**

Watch Video Solution

**15.** Which one of the following will not give flame test?

A. Ca

B. Ba

C. Sr

D. Be

**Answer: D**

Watch Video Solution

**16.** Which one of the following forms a basic oxide?

A. B

B. Tl

C. Al

D. Ga

**Answer: B**

Watch Video Solution

**17.** The gas produced by the passage of air over hot coke is

A. Carbon monoxide

B. Carbon dioxide

C. Producer gas

D. Water gas

**Answer: C**

Watch Video Solution

**18.** In environmental chemistry,the medium which is affected by a pollutant is called as the .....

A. Sink

B. Slag

C. Solvent

D. Receptor

**Answer: D**

Watch Video Solution

**19.** The hybridisation of each carbon in the following compound is

A. $sp^3, sp^2, sp^3, sp$

B. $sp^3, sp^3, sp^2, sp$

C. $sp^3, sp, sp^3, sp^2$

D. $sp^3, sp^2, sp, sp^3$

**Answer: A**

View Text Solution

**20.** The product Z of the following reaction is

$$H_3\mathbb{C} \equiv CH \xrightarrow{2HBr} Z$$

A. $H_3CCH_2CHBr_2$

B. $H_3CCBr_2CH_3$

C. $H_3CCHBrCH_2BrIn$

D. $BrCH_2CH_2CH_2Br$

**Answer: B**

Watch Video Solution

**21.** The packing efficiency of simple cubic (sc.) body centred cubic (bcc) and cubic close packing (ccp) lattices follow the order

A. $b < \mathrm{p} < sc$

B. $\mathrm{p} < b < sc$

C. $sc < \mathrm{p} < b$

D. $sc < b < \mathrm{p}$

**Answer: D**

Watch Video Solution

**22.** The experimental depression in freezing point of a dilute solution is 0.025 K. if the van,t hoff factor (i) is 2.0 the calculated depression in freezing point (in K) is

A. 0.00125

B. $0.025$

C. $0.0125$

D. $0.05$

**Answer: C**

Watch Video Solution

**23.** The molality of an aqueous dilute solution containing non-volatile solute is 0.1 m. What is the boiling temperature (in $.^{\circ} C$ ) of solution? (Boiling point elevation constant, $k_b = 0.52 kgmol^{-1} K$ boiling temperature of water $= 100.^{\circ} C$ )

A. $100.0052$

B. $100.052$

C. $100.0$

D. $100.52$

**Answer: B**

Watch Video Solution

**24.** Which one of the following is an emulsion?

A. Milk

B. Soap lather

C. Butter

D. Vanishing Cream

**Answer: A**

Watch Video Solution

**25.** Copper matte contains

A. $Cu_2O, Cu_2S$

B. $Cu_2O, FeO$

C. $Cu_2S, FeS$

D. $Cu_2S, FeO$

**Answer: C**

Watch Video Solution

**26.** X reacts with dilute nitric acid to form laughing gas . What is X?

A. Cu

B. $P_4$

C. $S_8$

D. Zn

**Answer: D**

Watch Video Solution

**27.** Xenon reacts with fluorine at 873 K and 7 bar to form $XeF_4$.

In this reaction, the ratio of xenon and fluorine required is

A. $1:5$

B. $10:1$

C. $1:3$

D. $5:1$

**Answer: A**

Watch Video Solution

**28.** Which of the following metal ions has a calculated magnetic moment value of $\sqrt{24}$ BM ?

A. $Mn^{2+}$

B. $Fe^{2+}$

C. $Fe^{3+}$

D. $Co^{2+}$

**Answer: B**

Watch Video Solution

**29.** Which one of the following does not exhibit geometrical isomerism ?

A. Octahedral complex with formula $[MX_2L_4]$

B. Square planar complex with formula $[MX_2L_2]$

C. Tetrahedral complex with formula $[MABXL]$

D. Octahedral complex with formula $\left[MX_2(L-L)_2\right]$

**Answer: C**

Watch Video Solution

**30.** The poly dispersity index (PDI) of a polymer is ($\overline{M_w}$ = weight average molecular mass and $\overline{M_n}$ number average molecular mass)

A. The product of $\overline{M_n}$ and $\overline{M_w}$

B. The sun of $\overline{M_n}$ and $\overline{M_w}$.

C. The difference between $\overline{M_w}$ and $\overline{M_n}$

D. The ratio between $\overline{M_w}$ and $\overline{M_w}$.

**Answer: D**

Watch Video Solution

**31.** Hormone that maintains the blood glucose level within the limit is

A. Thyroxine

B. Insulin

C. Testosterone

D. Epinephrine

**Answer: B**

Watch Video Solution

**32.** Chloroxylenol is an example of .....

A. Antiseptic

B. Antipyretic

C. Analgesic

D. Transquilizer

**Answer: A**

Watch Video Solution

**33.** Which one of the following has highest boiling point?

A. $H_3CCH_2CH_2CH_2CI$

B. $(H_3C)_2CHCH_2CI$

C. $(H_3C)_3CCI$

D. $H_3\mathbb{C}H_2C\underset{\underset{CI}{|}}{C}HCH_3$

**Answer: A**

Watch Video Solution

**34.** $X + Y \xrightarrow{H+}$ aspirin + $H_3\mathbb{C}OOH$

Identify X and Y from the following

A. 

B. 

C. 

D. 

**Answer: B**

Watch Video Solution

35. $R-CN \xrightarrow[(ii)\, H_3O^+]{(i)\, SaCI_2+HCI} R-CHO$

What is the name of the above reaction ?

A. Rosenmund

B. Williamson

C. Stephen

D. Kobe

**Answer: C**

Watch Video Solution

**36.** 

What are the structures of Y and Z ?

A. 

B. 

C. 

D. 

**Answer: D**

View Text Solution