

# Telangana State Council Higher Education

## Notations :

- 1.Options shown in **green** color and with  icon are correct.
- 2.Options shown in **red** color and with  icon are incorrect.

<b>Question Paper Name :</b>	Engineering Urdu 11th May 2024 Shift 1
<b>Subject Name :</b>	Engineering URDU
<b>Creation Date :</b>	2024-05-11 14:28:12
<b>Duration :</b>	180
<b>Total Marks :</b>	160
<b>Display Marks:</b>	Yes
<b>Share Answer Key With Delivery Engine :</b>	Yes
<b>Actual Answer Key :</b>	Yes
<b>Calculator :</b>	None
<b>Magnifying Glass Required? :</b>	No
<b>Ruler Required? :</b>	No
<b>Eraser Required? :</b>	No
<b>Scratch Pad Required? :</b>	No
<b>Rough Sketch/Notepad Required? :</b>	No
<b>Protractor Required? :</b>	No
<b>Show Watermark on Console? :</b>	Yes
<b>Highlighter :</b>	No
<b>Auto Save on Console?</b>	Yes
<b>Change Font Color :</b>	No
<b>Change Background Color :</b>	No
<b>Change Theme :</b>	No
<b>Help Button :</b>	No

Show Reports : No

Show Progress Bar : No

## Engineering Urdu

Group Number : 1

Group Id : 38382324

Group Maximum Duration : 0

Group Minimum Duration : 180

Show Attended Group? : No

Edit Attended Group? : No

Break time : 0

Group Marks : 160

Is this Group for Examiner? : No

Examiner permission : Cant View

Show Progress Bar? : No

## Mathematics

Section Id : 38382381

Section Number : 1

Section type : Online

Mandatory or Optional : Mandatory

Number of Questions : 80

Number of Questions to be attempted : 80

Section Marks : 80

Enable Mark as Answered Mark for Review and  
Clear Response : Yes

Maximum Instruction Time : 0

Sub-Section Number : 1

Sub-Section Id : 38382381

Question Shuffling Allowed : No

Is Section Default? : null

Question Number : 1 Question Id : 3838233681 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If  $f(x)$  is a quadratic function such that  $f(x)f\left(\frac{1}{x}\right) = f(x) + f\left(\frac{1}{x}\right)$ , then

$$\sqrt{f\left(\frac{2}{3}\right) + f\left(\frac{3}{2}\right)} =$$
$$= \sqrt{f\left(\frac{2}{3}\right) + f\left(\frac{3}{2}\right)} \text{ اگر } f(x)f\left(\frac{1}{x}\right) = f(x) + f\left(\frac{1}{x}\right) \text{ کے لئے } f(x) \text{ ایک دو درجی تفاعل ہو تب}$$

Options :

1. ✘  $\frac{25}{12}$

2. ✘  $\frac{10}{3}$

3. ✔  $\frac{13}{6}$

4. ✘  $\frac{41}{20}$

Question Number : 2 Question Id : 3838233682 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

**Correct Marks : 1 Wrong Marks : 0**

$f(x) = ax^2 + bx + c$  is an even function and  $g(x) = px^3 + qx^2 + rx$  is an odd function.

If  $h(x) = f(x) + g(x)$  and  $h(-2) = 0$ , then  $8p + 4q + 2r =$

اگر  $f(x) = ax^2 + bx + c$  ایک جفت تفاعل اور  $g(x) = px^3 + qx^2 + rx$  ایک طاق تفاعل۔ اگر

$$= 8p + 4q + 2r \text{ تب } h(-2) = 0 \text{ اور } h(x) = f(x) + g(x)$$

**Options :**

1. ✖  $4a + 3b + 2c$

2. ✖  $a + b + c$

3. ✔  $4a + 2b + c$

4. ✖  $8a + 4b + 2c$

**Question Number : 3 Question Id : 3838233683 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

If  $1.3.5 + 3.5.7 + 5.7.9 + \dots$  to  $n$  terms  $= n(n+1)f(n)$ , then  $f(2) =$

اگر  $n = n(n+1)f(n)$  کا  $1.3.5 + 3.5.7 + 5.7.9 + \dots$  تب  $f(2) =$

**Options :**

1. ✖ 12

2. ✖ 42

3. ✖ 18

4. ✓ 20

Question Number : 4 Question Id : 3838233684 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$A = \begin{bmatrix} 1 & 2 \\ 2 & 1 \end{bmatrix}$  and  $B = \begin{bmatrix} x & y \\ 1 & 2 \end{bmatrix}$  are two matrices such that  $(A+B)(A-B) = A^2 - B^2$ . If

$C = \begin{bmatrix} x & 2 \\ 1 & y \end{bmatrix}$  then  $\text{Trace}(C) =$

$C = \begin{bmatrix} x & 2 \\ 1 & y \end{bmatrix}$  دو ماتریسوں  $B = \begin{bmatrix} x & y \\ 1 & 2 \end{bmatrix}$  اور  $A = \begin{bmatrix} 1 & 2 \\ 2 & 1 \end{bmatrix}$  کے لئے۔ اگر  $(A+B)(A-B) = A^2 - B^2$  ہو، تب نشانہ  $\text{Trace}(C)$

Options :

1. ✓ 3

2. ✘ 5

3. ✘ 7

4. ✘ 9

Question Number : 5 Question Id : 3838233685 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If  $x = k$  satisfies the equation  $\begin{vmatrix} x-2 & 3x-3 & 5x-5 \\ x-4 & 3x-9 & 5x-25 \\ x-8 & 3x-27 & 5x-125 \end{vmatrix} = 0$ , then  $x = k$  also satisfies the equation

اگر  $x = k$  مساوت کو  $x = k$  متعین کرتا ہو،  $x = k$  بھی متعین کرنے والی دوسری مساوت  $\begin{vmatrix} x-2 & 3x-3 & 5x-5 \\ x-4 & 3x-9 & 5x-25 \\ x-8 & 3x-27 & 5x-125 \end{vmatrix} = 0$  اگر

**Options :**

1. ✖  $x^2 + x - 2 = 0$

2. ✖  $x^2 - x - 6 = 0$

3. ✖  $x^2 - 2x - 8 = 0$

4. ✔  $x^2 + 2x - 3 = 0$

**Question Number : 6 Question Id : 3838233686 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

If  $A$  is a non singular matrix, then  $\text{Adj}(A^{-1}) =$

اگر  $A$  ایک غیر نادر ہو، تب  $\text{Adj}(A^{-1}) =$

**Options :**

1. ✔  $(\text{Adj } A)^{-1}$

2. ✖  $\frac{1}{|A|} A^{-1}$

3. ✘  $|A|A^{-1}$

4. ✘  $|A|A$

Question Number : 7 Question Id : 3838233687 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If the homogeneous system of linear equations  $x - 2y + 3z = 0$ ,  $2x + 4y - 5z = 0$ ,  
 $3x + \lambda y + \mu z = 0$  has non-trivial solution, then  $8\mu + 11\lambda =$

اگر مساوات  $x - 2y + 3z = 0$ ،  $2x + 4y - 5z = 0$ ،  $3x + \lambda y + \mu z = 0$  متجانس خطی مساواتوں کے نظام  
میں ہو اگر اس کو غیر ادنی (non-trivial) حل ہو تب  $8\mu + 11\lambda$

Options :

1. ✘ 2

2. ✔ 6

3. ✘ -6

4. ✘ -2

Question Number : 8 Question Id : 3838233688 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If  $z = \frac{(2-i)(1+i)^3}{(1-i)^2}$ , then  $\text{Arg}(z) =$

$$\text{Arg}(z) = \text{تیب } z = \frac{(2-i)(1+i)^3}{(1-i)^2} \text{ کی}$$

Options :

1. ✓  $\text{Tan}^{-1}\left(\frac{1}{3}\right) - \pi$

2. ✗  $\text{Tan}^{-1}\left(\frac{3}{4}\right) - \pi$

3. ✗  $\pi - \text{Tan}^{-1}\left(\frac{3}{4}\right)$

4. ✗  $\text{Tan}^{-1}\left(\frac{1}{3}\right)$

Question Number : 9 Question Id : 3838233689 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$z = x + iy$  and the point P represents  $z$  in the Argand plane. If the amplitude of  $\left(\frac{2z-i}{z+2i}\right)$

is  $\frac{\pi}{4}$ , then the equation of the locus of P is

$z = x + iy$  اور آرگنڈ مستوی میں P نقطہ  $z$  کو ظاہر کرتا ہے،  $\left(\frac{2z-i}{z+2i}\right)$  کا چھٹ  $\frac{\pi}{4}$  ہو تو P کا طریق کی مساوت

Options :

1. ✗  $2x^2 + 2y^2 - 3x + 3y - 2 = 0, (x, y) \neq (0, -2)$

2. ✓  $2x^2 + 2y^2 + 5x + 3y - 2 = 0, (x, y) \neq (0, -2)$

3. ✗  $2x^2 + 2y^2 + 3x + 3y - 2 = 0, (x, y) \neq (0, 2)$

4. ✗  $2x^2 + 2y^2 - 5x + 3y - 2 = 0, (x, y) \neq (0, 2)$

Question Number : 10 Question Id : 3838233690 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$\alpha, \beta$  are the roots of the equation  $x^2 + 2x + 4 = 0$ . If the point representing  $\alpha$  in the

Argand diagram lies in the 2<sup>nd</sup> quadrant and  $\alpha^{2024} - \beta^{2024} = ik, (i = \sqrt{-1})$ , then  $k =$

،  $\alpha, \beta$  مساوت  $x^2 + 2x + 4 = 0$  کے ریشے ہیں۔ آرگنڈ مستوی میں  $\alpha$  کو ظاہر کرنے والا نقطہ دوسرے ربع میں ہو  $(i = \sqrt{-1})$

$$= k \text{ تو } \alpha^{2024} - \beta^{2024} = ik$$

Options :

1. ✗  $-2^{2025} \sqrt{3}$

2. ✗  $2^{2025} \sqrt{3}$

3. ✓  $-2^{2024} \sqrt{3}$

4. ✗  $2^{2024} \sqrt{3}$

Question Number : 11 Question Id : 3838233691 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If  $\alpha$  is a root of the equation  $x^2 - x + 1 = 0$ , then

$$\left(\alpha + \frac{1}{\alpha}\right)^3 + \left(\alpha^2 + \frac{1}{\alpha^2}\right)^3 + \left(\alpha^3 + \frac{1}{\alpha^3}\right)^3 + \left(\alpha^4 + \frac{1}{\alpha^4}\right)^3 =$$

$$x^2 - x + 1 = 0 \text{ مساوت کا ایک ریشہ } \alpha \text{ ہو تب}$$

$$\left(\alpha + \frac{1}{\alpha}\right)^3 + \left(\alpha^2 + \frac{1}{\alpha^2}\right)^3 + \left(\alpha^3 + \frac{1}{\alpha^3}\right)^3 + \left(\alpha^4 + \frac{1}{\alpha^4}\right)^3 =$$

Options :

1. ✖ 0

2. ✖ 1

3. ✖ -3

4. ✔ -9

Question Number : 12 Question Id : 3838233692 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$\alpha, \beta$  are the real roots of the equation  $x^2 + ax + b = 0$ . If  $\alpha + \beta = \frac{1}{2}$  and  $\alpha^3 + \beta^3 = \frac{37}{8}$ ,

then  $a - \frac{1}{b} =$

$$= a - \frac{1}{b} \text{ اور } \alpha^3 + \beta^3 = \frac{37}{8} \text{ اور } \alpha + \beta = \frac{1}{2}, x^2 + ax + b = 0 \text{ کے ریشے۔ اگر } \alpha \text{ اور } \beta \text{ مساوت کے ریشے۔}$$

Options :

1. ✓  $\frac{-1}{6}$

2. ✗  $\frac{3}{2}$

3. ✗  $\frac{-3}{2}$

4. ✗  $\frac{1}{6}$

Question Number : 13 Question Id : 3838233693 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The solution set of the inequation  $\sqrt{x^2 + x - 2} > (1 - x)$  is

$$\sqrt{x^2 + x - 2} > (1 - x) \text{ نامساوت کا عام سٹ}$$

Options :

1. ✗  $(-\infty, 2)$

2. ✗  $(-\infty, -2)$

3. ✓  $(1, \infty)$

4. ✗  $(0, \infty)$

Question Number : 14 Question Id : 3838233694 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If  $\alpha, \beta, \gamma$  are the roots of the equation  $4x^3 - 3x^2 + 2x - 1 = 0$ , then  $\alpha^3 + \beta^3 + \gamma^3 =$

$$= \alpha^3 + \beta^3 + \gamma^3 \text{ اگر } \alpha, \beta, \gamma \text{ مساوات } 4x^3 - 3x^2 + 2x - 1 = 0 \text{ کے ریشے ہوں تو}$$

Options :

1. ✘  $\frac{2}{27}$

2. ✘  $\frac{1}{8}$

3. ✔  $\frac{3}{64}$

4. ✘  $\frac{27}{128}$

Question Number : 15 Question Id : 3838233695 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The equation  $16x^4 + 16x^3 - 4x - 1 = 0$  has a multiple root. If  $\alpha, \beta, \gamma, \delta$  are the roots of this equation, then  $\frac{1}{\alpha^4} + \frac{1}{\beta^4} + \frac{1}{\gamma^4} + \frac{1}{\delta^4} =$

مساوت کو ایک دوہرا یا ہوا ریشہ۔ اگر  $\alpha, \beta, \gamma, \delta$  یہ مساوت کے ریشے ہوتے ہیں تو

$$16x^4 + 16x^3 - 4x - 1 = 0$$
$$= \frac{1}{\alpha^4} + \frac{1}{\beta^4} + \frac{1}{\gamma^4} + \frac{1}{\delta^4}$$

Options :

1. ✘  $\frac{1}{64}$

2. ✘  $\frac{1}{32}$

3. ✘ 32

4. ✔ 64

Question Number : 16 Question Id : 3838233696 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The sum of all the 4-digit numbers formed by taking all the digits from 0, 3, 6, 9 without repetition is

9, 6, 3, 0 سے تمام ہندسوں کو لے کر کوئی بھی ہندسہ بغیر تکرار کے بننے والے 4 ہندسی عددوں کا مجموعہ

Options :

1. ✘ 119592

2. ✔ 115992

3. ✖ 211599

4. ✖ 119952

Question Number : 17 Question Id : 3838233697 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The number of ways in which 6 distinct things can be distributed into 2 boxes so that no  
box is empty is

6 مختلف چیزوں کو 2 صندوقوں میں کوئی بھی ایک صندوق خالی نہ ہونے کی تقسیم کرنے کے طریقوں کی تعداد

Options :

1. ✖ 36

2. ✖ 64

3. ✔ 62

4. ✖ 34

Question Number : 18 Question Id : 3838233698 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Number of ways in which the number 831600 can be split into two factors which are relatively prime is

831600 عدد کو ہم مفرد عدد کے دو اجزائے ضربی سے تقسیم کرنے کے طریقوں کا عدد

Options :

1. ✖ 8

2. ✖ 64

3. ✖ 32

4. ✔ 16

Question Number : 19 Question Id : 3838233699 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The coefficient of  $xy^2z^3$  in the expansion of  $(x-2y+3z)^6$  is

$(x-2y+3z)^6$  کے پھیلاؤ میں  $xy^2z^3$  کا ضرب

Options :

1. ✔ 6480

2. ✖ 3240

3. ✖ 1620

4. ✖ 810

Question Number : 20 Question Id : 3838233700 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The set of all real values of  $x$  for which the expansion of  $\left(125x^2 - \frac{27}{x}\right)^{-\frac{2}{3}}$  is valid, is

کے پھیلاؤ میں درست ہونے والے تمام حقیقی قدروں والا  $x$  کا سٹ  $\left(125x^2 - \frac{27}{x}\right)^{-\frac{2}{3}}$

Options :

1. ✖  $\left(-\frac{3}{5}, \frac{3}{5}\right)$

2. ✔  $\left(-\infty, -\frac{3}{5}\right) \cup \left(\frac{3}{5}, \infty\right)$

3. ✖  $\left(-\frac{5}{3}, \frac{5}{3}\right)$

4. ✖  $\left(-\infty, -\frac{1}{3}\right) \cup \left(\frac{1}{3}, \infty\right)$

Question Number : 21 Question Id : 3838233701 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If  $\frac{x^2}{2x^4 + 7x^2 + 6} = \frac{Ax+B}{x^2+a} + \frac{Cx+D}{ax^2+3}$ , then  $A+B+C-2D =$

$= A+B+C-2D$  ہے تب  $\frac{x^2}{2x^4 + 7x^2 + 6} = \frac{Ax+B}{x^2+a} + \frac{Cx+D}{ax^2+3}$  اگر

Options :

1. ✖  $2a$

2. ✖  $-2a$

3. ✖  $-4a$

4. ✔  $4a$

Question Number : 22 Question Id : 3838233702 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If  $(\sin \theta - \operatorname{cosec} \theta)^2 + (\cos \theta + \sec \theta)^2 = 5$  and  $\theta$  lies in the third quadrant, then  
 $(\sin \theta + \cos \theta)^3 =$

اگر  $(\sin \theta - \operatorname{cosec} \theta)^2 + (\cos \theta + \sec \theta)^2 = 5$  اور  $\theta$  تیسرے ربع میں ہے تب  $(\sin \theta + \cos \theta)^3 =$

Options :

1. ✔  $-2\sqrt{2}$

2. ✖  $2\sqrt{2}$

3. ✖  $4$

4. ✖ -4

Question Number : 23 Question Id : 3838233703 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If  $0 < B < A < \frac{\pi}{4}$ ,  $\cos^2 B - \sin^2 A = \frac{\sqrt{3}+1}{4\sqrt{2}}$  and  $2 \cos A \cos B = \frac{1+\sqrt{2}+\sqrt{3}}{2\sqrt{2}}$ , then

$$\cos^2 \frac{4B}{3} - \sin^2 \frac{4A}{5} =$$

ہو تب  $2 \cos A \cos B = \frac{1+\sqrt{2}+\sqrt{3}}{2\sqrt{2}}$  اور  $\cos^2 B - \sin^2 A = \frac{\sqrt{3}+1}{4\sqrt{2}}$ ,  $0 < B < A < \frac{\pi}{4}$

$$\cos^2 \frac{4B}{3} - \sin^2 \frac{4A}{5} =$$

Options :

1. ✖ 1

2. ✔  $\frac{1}{2}$

3. ✖ 0

4. ✖  $-\frac{1}{2}$

Question Number : 24 Question Id : 3838233704 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If  $\theta$  is an acute angle and  $2 \sin^2 \theta = \cos^4 \frac{\pi}{8} + \sin^4 \frac{3\pi}{8} + \cos^4 \frac{5\pi}{8} + \sin^4 \frac{7\pi}{8}$ , then  $\theta =$

$$= \theta \text{ ایک حادہ زاویہ اور } 2 \sin^2 \theta = \cos^4 \frac{\pi}{8} + \sin^4 \frac{3\pi}{8} + \cos^4 \frac{5\pi}{8} + \sin^4 \frac{7\pi}{8}$$

Options :

1. ✖  $\frac{\pi}{6}$

2. ✖  $\frac{\pi}{4}$

3. ✔  $\frac{\pi}{3}$

4. ✖  $\frac{\pi}{8}$

Question Number : 25 Question Id : 3838233705 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If  $2 \tan^2 \theta - 4 \sec \theta + 3 = 0$ , then  $2 \sec \theta =$

$$= 2 \sec \theta \text{ ہو تو } 2 \tan^2 \theta - 4 \sec \theta + 3 = 0$$

Options :

1. ✖ 3

2. ✖  $2 + \sqrt{2}$  and  $2 - \sqrt{2}$

3.

✘  $2 - \sqrt{2}$

4. ✔  $2 + \sqrt{2}$

Question Number : 26 Question Id : 3838233706 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If  $\sin^{-1}x - \cos^{-1}2x = \sin^{-1}\left(\frac{\sqrt{3}}{2}\right) - \cos^{-1}\left(\frac{\sqrt{3}}{2}\right)$ , then  $\tan^{-1}x + \tan^{-1}\left(\frac{x}{x+1}\right) =$

$= \tan^{-1}x + \tan^{-1}\left(\frac{x}{x+1}\right)$  ∵  $\sin^{-1}x - \cos^{-1}2x = \sin^{-1}\left(\frac{\sqrt{3}}{2}\right) - \cos^{-1}\left(\frac{\sqrt{3}}{2}\right)$

Options :

1. ✘  $\frac{\pi}{6}$

2. ✔  $\frac{\pi}{4}$

3. ✘  $\frac{\pi}{3}$

4. ✘  $\frac{\pi}{2}$

Question Number : 27 Question Id : 3838233707 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$\operatorname{Sech}^{-1}\left(\frac{3}{5}\right) - \operatorname{Tanh}^{-1}\left(\frac{3}{5}\right) =$$

Options :

1. ✘  $\log_e 6$

2. ✘  $\log_e 5$

3. ✔  $\log_e\left(\frac{3}{2}\right)$

4. ✘  $\log_e\left(\frac{2}{3}\right)$

Question Number : 28 Question Id : 3838233708 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In a triangle ABC, if  $a = 5$ ,  $b = 3$ ,  $c = 7$ , then  $\sqrt{\frac{\sin(A - B)}{\sin(A + B)}}$  =

=  $\sqrt{\frac{\sin(A - B)}{\sin(A + B)}}$  ایک مثلث ABC میں  $a = 5$ ,  $b = 3$ ,  $c = 7$  تب

Options :

1. ✔  $\frac{4}{7}$

2. ✘ 16

3. ✖ 36

4. ✖  $\frac{4}{5}$

Question Number : 29 Question Id : 3838233709 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In a triangle ABC, if  $r_1 = 6, r_2 = 9, r_3 = 18$ , then  $\cos A =$

=  $\cos A$  ایک مثلث ABC میں  $r_1 = 6, r_2 = 9, r_3 = 18$  ہو تو تب

Options :

1. ✖  $\frac{5}{13}$

2. ✔  $\frac{4}{5}$

3. ✖  $\frac{5}{7}$

4. ✖  $\frac{7}{25}$

Question Number : 30 Question Id : 3838233710 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$2\bar{i} - 3\bar{j} + \bar{k}$  and  $\bar{i} + 2\bar{j} - 3\bar{k}$  are the position vectors of two points A and B respectively and C divides AB in the ratio 3:2. If  $3\bar{i} - \bar{j} + 2\bar{k}$  is the position vector of a point D, then the unit vector in the direction of  $\overline{CD}$  is

تقسیم C میں نسبت میں 3:2 کو AB اور سمتوں ہم سمتوں اور A اور B دو نقاط ہم سمتوں اور  $\bar{i} + 2\bar{j} - 3\bar{k}$  اور  $2\bar{i} - 3\bar{j} + \bar{k}$  کر تا ہے۔ نقطہ D کا مقام سمت  $3\bar{i} - \bar{j} + 2\bar{k}$  ہو تو  $\overline{CD}$  کا سمت میں رہنے والی اکائی سمت

Options :

1. ✘  $\frac{1}{7\sqrt{2}}(8\bar{i} - 5\bar{j} - 3\bar{k})$

2. ✘  $\frac{1}{\sqrt{266}}(4\bar{i} - 13\bar{j} + 9\bar{k})$

3. ✔  $\frac{1}{3\sqrt{42}}(8\bar{i} - 5\bar{j} + 17\bar{k})$

4. ✘  $\frac{1}{7\sqrt{2}}(8\bar{i} - 5\bar{j} + 3\bar{k})$

Question Number : 31 Question Id : 3838233711 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A plane  $\pi$  passing through the points  $2\bar{i} - 3\bar{j}$ ,  $3\bar{i} + 4\bar{k}$  is parallel to the vector  $2\bar{i} + 3\bar{j} - 4\bar{k}$ . If a line joining the points  $\bar{i} + 2\bar{j}$  and  $\bar{j} - 2\bar{k}$  intersects the plane  $\pi$  at the point  $a\bar{i} + b\bar{j} + c\bar{k}$ , then  $a + b + 2c =$

$$\begin{aligned} & 2\bar{i} - 3\bar{j}, 3\bar{i} + 4\bar{k}, 2\bar{i} + 3\bar{j} - 4\bar{k} \text{ نقاط پر سے گزرنے والے } \pi \text{ ایک مستوی } 2\bar{i} + 3\bar{j} - 4\bar{k} \text{ سمت کو متوازی ہو۔ اور } \\ & \bar{i} + 2\bar{j} \text{ اور } \bar{j} - 2\bar{k} \text{ نقطے پر خط ملانے والے خط مستوی } \pi \text{ کو } a\bar{i} + b\bar{j} + c\bar{k} \text{ نقطے پر خط کرنے پر } a + b + 2c = \end{aligned}$$

Options :

1. ✓ 31

2. ✗ 29

3. ✗ 23

4. ✗ 19

Question Number : 32 Question Id : 3838233712 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A unit vector  $\bar{e} = a\bar{i} + b\bar{j} + c\bar{k}$  is coplanar with the vectors  $\bar{i} - 3\bar{j} + 5\bar{k}$  and  $3\bar{i} + \bar{j} - 5\bar{k}$ .

If  $\bar{e}$  is perpendicular to the vector  $\bar{i} + \bar{j} + \bar{k}$ , then  $2a^2 + 3b^2 + 4c^2 =$

اگر  $\bar{e} = a\bar{i} + b\bar{j} + c\bar{k}$  اکائی سمت  $\bar{i} - 3\bar{j} + 5\bar{k}$  اور  $3\bar{i} + \bar{j} - 5\bar{k}$  سمتوں سے مطابقت ہو۔  $\bar{i} + \bar{j} + \bar{k}$  سمت کو عمودی  
ہو تب  $= 2a^2 + 3b^2 + 4c^2$

Options :

1. ✗ 1

2. ✓ 3

3. ✗ -1

4. ✗  $\sqrt{2}$

Question Number : 33 Question Id : 3838233713 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$\vec{a} = \vec{i} + \vec{j} - 2\vec{k}$ ,  $\vec{b} = \vec{i} - 2\vec{j} + \vec{k}$  and  $\vec{c} = 2\vec{i} + \vec{j} - \vec{k}$  are three vectors. If  $\vec{d}$  is a normal  
to the plane of  $\vec{a}$  and  $\vec{b}$  and  $\vec{d} \cdot \vec{c} = 2$ , then  $|\vec{d}| =$

$$\vec{c} = 2\vec{i} + \vec{j} - \vec{k}, \vec{b} = \vec{i} - 2\vec{j} + \vec{k}, \vec{a} = \vec{i} + \vec{j} - 2\vec{k}$$
$$= |\vec{d}| \text{ اور } \vec{d} \cdot \vec{c} = 2$$

Options :

1. ✘  $\sqrt{6}$

2. ✘  $2\sqrt{3}$

3. ✔  $\sqrt{3}$

4. ✘ 2

Question Number : 34 Question Id : 3838233714 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$\bar{r} \cdot (\bar{i} - \bar{j} + \bar{k}) = 5$  and  $\bar{r} \cdot (2\bar{i} + \bar{j} - \bar{k}) = 3$  are two planes. A plane  $\pi$  passing through the line of intersection of these two planes, passes through the point  $(0,1,2)$ . If the equation of  $\pi$  is  $\bar{r} \cdot (a\bar{i} + b\bar{j} + c\bar{k}) = m$ , then  $\frac{bc}{a^2} =$

،  $\pi$  سے گزرنے والا مستوی  $\bar{r} \cdot (2\bar{i} + \bar{j} - \bar{k}) = 3$  اور  $\bar{r} \cdot (\bar{i} - \bar{j} + \bar{k}) = 5$  دو مستویوں پر یہ دو مستویوں کو خطہ کرنے والا خط سے گزرنے والا مستوی

نقطہ  $(0,1,2)$  سے گزرتا ہے۔  $\pi$  کی مساوات  $\bar{r} \cdot (a\bar{i} + b\bar{j} + c\bar{k}) = m$  ہے تب  $\frac{bc}{a^2} =$

Options :

1. ✖  $\frac{1}{2}$

2. ✖  $-\frac{1}{2}$

3. ✖ 4

4. ✔ -4

Question Number : 35 Question Id : 3838233715 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The variance of the data: 1, 2, 3, 5, 8, 13, 17 is approximately

ڈاٹا کا تغیر تفریبات 1، 2، 3، 5، 8، 13، 17

Options :

1. ✔ 31.14

2. ✖ 29.57

3. ✖ 30.62

4. ✖ 32.71

Question Number : 36 Question Id : 3838233716 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The numbers 2, 3, 5, 7, 11, 13 are written on six distinct paper chits. If 3 of them are chosen at random, then the probability that the sum of the numbers on the obtained chits is divisible by 3, is

چھ مختلف کاغذ کے چٹوں پر 2، 3، 5، 7، 11، 13 عددیں لکھا گیا ہے اس میں سے بلا منصوبہ تین کو لینے پر، آنے والی چٹی پر عدد کا مجموعہ 3 سے تقسیم ہونے والے احتمال

Options :

1. ✔  $\frac{7}{20}$

2. ✖  $\frac{6}{20}$

3. ✖  $\frac{5}{20}$

4. ✖  $\frac{1}{5}$

Question Number : 37 Question Id : 3838233717 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If 4 letters are selected at random from the letters of the word PROBABILITY, then the probability of getting a combination of letters in which atleast one letter is repeated is

لفظ PROBABILITY میں حرف سے 4 حروف کو بلا منصوبہ لینے پر کم از کم ایک حرف دوبارہ آنے پر حروف کو جوزی ہونے

کا احتمال

Options :

1. ✘  $\frac{43}{170}$

2. ✔  $\frac{19}{61}$

3. ✘  $\frac{57}{184}$

4. ✘  $\frac{29}{155}$

Question Number : 38 Question Id : 3838233718 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If two dice are rolled, then the probability of getting a multiple of 3 as the sum of the numbers appeared on the top faces of the dice, if it is known that their sum is an odd number, is

دو پھانسیوں کو لڑکانے پر وہ پھانسیوں پر دکھنے والے عدد کا مجموعہ ایک طاق عدد معلوم ہونے سے، وہ عددوں کا مجموعہ 3 سے ضرب ہونے

کے لئے احتمال

Options :

1. ✘  $\frac{1}{6}$

2. ✘  $\frac{11}{36}$

3. ✔  $\frac{1}{3}$

4. ✘  $\frac{7}{18}$

Question Number : 39 Question Id : 3838233719 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If a random variable X has the following probability distribution, then its variance is

ایک بلا منسوبہ متغیر X کی احتمالی تقسیم ذیل میں اس طرح دی گئی ہے۔ اس کا تغیر

$X = x$	1	3	5	2
$P(X = x)$	$3K^2$	$K$	$K^2$	$2K$

Options :

1. ✘  $\frac{9}{4}$

2. ✘  $\frac{25}{8}$

3. ✘  $\frac{27}{16}$

4. ✓  $\frac{15}{16}$

Question Number : 40 Question Id : 3838233720 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The mean and variance of a binomial variate X are  $\frac{16}{5}$  and  $\frac{48}{25}$  respectively. If

$$P(X > 1) = 1 - K \left(\frac{3}{5}\right)^7, \text{ then } 5K =$$

$$= 5K \text{ جب } P(X > 1) = 1 - K \left(\frac{3}{5}\right)^7, \frac{48}{25} \text{ اور } \frac{16}{5} \text{ کا اوسط اور تغیر ترتیب وار ایک دور کنی تقسیم X کا اوسط اور تغیر ترتیب وار}$$

Options :

1. ✓ 19

2. ✗ 3

3. ✗ 2

4. ✗ 11

Question Number : 41 Question Id : 3838233721 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

P and Q are the points of trisection of the line segment joining the points (3, -7) and (-5, 3). If PQ subtends right angle at a variable point R, then the locus of R is

P اور Q میں (3, -7) اور (-5, 3) نقاط کو ملانے والے خط خط کا ہم نقاط۔ ایک نقطہ R پر PQ عمودی زاویہ بنانے پر، R کا طریق

Options :

a circle with radius  $\frac{\sqrt{41}}{3}$

1. ✓  $\frac{\sqrt{41}}{3}$  نصف قطر والا دائرہ

a circle with radius  $\sqrt{409}$

2. ✘  $\sqrt{409}$  نصف قطر والا دائرہ

a pair of straight lines passing through (-1, -2)

3. ✘ (-1, -2) نقاط پر سے گزرنے والا خط مستقیم کا جوڑا

a pair of straight lines passing through (1, 2)

4. ✘ (1, 2) نقاط پر سے گزرنے والا خط مستقیم کا جوڑا

Question Number : 42 Question Id : 3838233722 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$(a, b)$  is the point to which the origin has to be shifted by translation of axes so as to remove the first-degree terms from the equation  $2x^2 - 3xy + 4y^2 + 5y - 6 = 0$ . If the angle by which the axes are to be rotated in positive direction about the origin to remove the  $xy$ -term from the equation  $ax^2 + 23abxy + by^2 = 0$  is  $\theta$ , then  $\tan 2\theta =$

$$2x^2 - 3xy + 4y^2 + 5y - 6 = 0 \text{ سے پہلے درجے کے ارکان موقوف ہو جانے کے لئے مبداء کو متوازی محور سے}$$

$$(a, b) \text{ نقطہ پر کو تحویل کرنا ہے۔ } ax^2 + 23abxy + by^2 = 0 \text{ مساوت سے } xy \text{ حرف کو موقوف کرنے پر نقطے کے لحاظ سے محور کو } \theta \text{ زاویہ مثبت سمت میں تحویل کرنا پڑے، } \tan 2\theta =$$

Options :

1. ✖  $\frac{\pi}{4}$

2. ✔ 60

3. ✖  $\frac{\pi}{3}$

4. ✖ 15

Question Number : 43 Question Id : 3838233723 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$A(1, -2), B(-2, 3), C(-1, -3)$  are the vertices of a triangle ABC.  $L_1$  is the perpendicular drawn from A to BC and  $L_2$  is the perpendicular bisector of AB. If  $(l, m)$  is the point of intersection of  $L_1$  and  $L_2$ , then  $26m - 3 =$

$$A(1, -2), B(-2, 3), C(-1, -3) \text{ مثلث ABC کے راس A سے BC کو کھینچا گیا عمود خط } L_1 \text{ اور AB کا عمود}$$

$$= 26m - 3 \text{ تب } (l, m) \text{ نقطہ } L_1 \text{ اور } L_2 \text{ کو قطع کرتا ہے۔ اگر } L_2 \text{ متقاربین خط } L_2$$

Options :

1. ✖ 26/

2. ✖ 89/

3. ✔ 13/

4. ✖ 43/

Question Number : 44 Question Id : 3838233724 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The area of the parallelogram formed by the lines  $L_1 \equiv \lambda x + 4y + 2 = 0$ ,

$L_2 \equiv 3x + 4y - 3 = 0$ ,  $L_3 \equiv 2x + \mu y + 6 = 0$ ,  $L_4 \equiv 2x + y + 3 = 0$ , where  $L_1$  is parallel to

$L_2$  and  $L_3$  is parallel to  $L_4$  is

،  $L_2 \equiv 3x + 4y - 3 = 0$  ،  $L_1 \equiv \lambda x + 4y + 2 = 0$  کو متوازی ہونے پر  $L_3, L_4$  متوازی ہو اور  $L_1, L_2$

مستطیل کا رقبہ  $L_4 \equiv 2x + y + 3 = 0$  ،  $L_3 \equiv 2x + \mu y + 6 = 0$  خطوط سے بننے والے متوازی مستطیل کا رقبہ

Options :

1. ✖ 9

2. ✖ 7

3. ✖ 5

4. ✔ 3

Question Number : 45 Question Id : 3838233725 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If A(1,2), B(2,1) are two vertices of an acute angled triangle and S(0,0) is its  
circumcenter, then the angle subtended by AB at the third vertex is

ایک حادہ زاویہ مثلث کے دو راس اور S(0,0) اس کے محیطی مرکز ہو تو، تیسرے راس  
پر AB سے بننے والا زاویہ

Options :

1. ✓  $\tan^{-1}\left(\frac{1}{3}\right)$

2. ✘  $\tan^{-1}\left(\frac{1}{2}\right)$

3. ✘  $\frac{\pi}{4}$

4. ✘  $\frac{\pi}{6}$

Question Number : 46 Question Id : 3838233726 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If the angle between the pair of lines given by the equation  $ax^2 + 4xy + 2y^2 = 0$  is  $45^\circ$  then the possible values of 'a'

$ax^2 + 4xy + 2y^2 = 0$  مساوت سے دئے گئے خطوط مستقیم کا درمیانی زاویہ  $45^\circ$  ہو تو 'a' کو ممکنہ قدریں معلوم کیجئے۔

Options :

are -3 or 21

1. ✖ 21 یا -3 ہیں

are  $-6 \pm 4\sqrt{3}$

2. ✔ ہیں  $-6 \pm 4\sqrt{3}$

are  $-6 \pm 24\sqrt{2}$

3. ✖ ہیں  $-6 \pm 24\sqrt{2}$

do not exist

4. ✖ نہیں ہوگا

Question Number : 47 Question Id : 3838233727 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A circle passing through the points (1,1) and (2,0) touches the line  $3x - y - 1 = 0$ . If the equation of this circle is  $x^2 + y^2 + 2gx + 2fy + c = 0$ , then a possible value of g is

(1,1) ، (2,0) نقاط سے گزرنے والا دائرہ  $3x - y - 1 = 0$  خط کو مس کرتا ہے۔ یہ دائرے کی مساوت

$x^2 + y^2 + 2gx + 2fy + c = 0$  ہو تو g ممکنہ ایک قدر

Options :

1. ✔  $-\frac{5}{2}$

2. ✖  $-\frac{3}{2}$

3. ✖ 6

4. ✖ -5

Question Number : 48 Question Id : 3838233728 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A circle passes through the points (2, 0) and (1, 2). If the power of the point (0, 2) with respect to this circle is 4, then the radius of the circle is

ایک دائرہ (2, 0) اور (1, 2) نقاط سے گزرتا ہے۔ یہ دائرے کے لحاظ سے (0, 2) نقطہ کا قوت 4 ہو تب وہ دائرہ کا نصف قطر

Options :

1. ✖ 2

2. ✔  $\sqrt{\frac{5}{2}}$

3. ✖  $\sqrt{5}$

4. ✖ 4

Question Number : 49 Question Id : 3838233729 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$x - 2y - 6 = 0$  is a normal to the circle  $x^2 + y^2 + 2gx + 2fy - 8 = 0$ . If the line  $y = 2$  touches this circle, then the radius of the circle can be

کرنے سے، یہ دائرے کو نصف قطر والی قدر  
دائرے کو ایک نارمل خط  $x - 2y - 6 = 0$ ۔ یہ دائرے کو  $x^2 + y^2 + 2gx + 2fy - 8 = 0$  مستقیم مس  
خط  $y = 2$  چھو، تو اس دائرے کا نصف قطر

Options :

1. ✖  $\sqrt{32}$

2. ✖ 6

3. ✔ 4

4. ✖  $\sqrt{18}$

Question Number : 50 Question Id : 3838233730 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The line  $x + y + 1 = 0$  intersects the circle  $x^2 + y^2 - 4x + 2y - 4 = 0$  at the points A and B. If  $M(a, b)$  is the midpoint of AB, then  $a - b =$

نقطہ  $M(a, b)$  سے  $a - b =$   
خط  $x + y + 1 = 0$  مستقیم کو، دائرے کو  $x^2 + y^2 - 4x + 2y - 4 = 0$  اور A اور B نقاط پر قطع کرتا ہے۔ AB کا درمیانی

Options :

1. ✖ 0

2. ✖ 1

3. ✖ 2

4. ✔ 3

Question Number : 51 Question Id : 3838233731 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A circle S passes through the points of intersection of the circles  $x^2 + y^2 - 2x - 3 = 0$   
and  $x^2 + y^2 - 2y = 0$ . If  $x + y + 1 = 0$  is a tangent to the circle S, then equation of S is

S ایک دائرہ  $x^2 + y^2 - 2x - 3 = 0$  اور  $x^2 + y^2 - 2y = 0$  نقاط تقاطع سے گزرتی ہے۔ دائرہ S کو  $x + y + 1 = 0$   
ایک مماس ہو تب S کی مساوت

Options :

1. ✖  $2x^2 + 2y^2 + 2x + 2y + 3 = 0$

2. ✖  $2x^2 + 2y^2 - 2x - 2y + 3 = 0$

3. ✖  $x^2 + y^2 - 2x - 2y + 3 = 0$

4. ✔  $2x^2 + 2y^2 - 2x - 2y - 3 = 0$

Question Number : 52 Question Id : 3838233732 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If the common chord of the circles  $x^2 + y^2 - 2x + 2y + 1 = 0$  and

$x^2 + y^2 - 2x - 2y - 2 = 0$  is the diameter of a circle S, then the centre of the circle S is

اگر  $x^2 + y^2 - 2x + 2y + 1 = 0$  اور  $x^2 + y^2 - 2x - 2y - 2 = 0$  دائروں کا جوڑی وتر ایک دائرہ S کا قطر ہو تب وہ دائرہ S کا مرکز

Options :

1. ✘  $\left(\frac{1}{2}, -\frac{3}{4}\right)$

2. ✔  $\left(1, -\frac{3}{4}\right)$

3. ✘  $\left(1, \frac{3}{4}\right)$

4. ✘  $\left(-\frac{1}{2}, -\frac{3}{4}\right)$

Question Number : 53 Question Id : 3838233733 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

(1,1) is the vertex and  $x+y+1=0$  is the directrix of a parabola. If  $(a,b)$  is its focus and  $(c,d)$  is the point of intersection of the directrix and the axis of the parabola, then  $a+b+c+d =$

ایک مکانی کار اس (1,1) اور  $x+y+1=0$  حادی خط۔ اس کا ماسکہ اور  $(c,d)$  وہ مکانی کا حادی خط اور محور کا نقطہ تقاطع ہو تب  $= a+b+c+d$

Options :

1. ✖ 6

2. ✖ 5

3. ✔ 4

4. ✖ 3

Question Number : 54 Question Id : 3838233734 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The axis of a parabola is parallel to Y-axis. If this parabola passes through the points

$(1,0), (0,2), (-1,-1)$  and its equation is  $ax^2 + bx + cy + d = 0$ , then  $\frac{ad}{bc} =$

ایک مکانی کا محور، Y-محور کو متوازی ہو۔  $(1,0), (0,2), (-1,-1)$  نقاط سے گزرنے والے یہ مکانی کی مساوت

$= \frac{ad}{bc}$  ہو تب  $ax^2 + bx + cy + d = 0$

Options :

1. ✖  $\frac{5}{8}$

2. ✖  $\frac{5}{2}$

3. ✖  $-10$

4. ✔  $10$

Question Number : 55 Question Id : 3838233735 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If the focus of an ellipse is  $(-1, -1)$ , equation of its directrix corresponding to this focus

is  $x + y + 1 = 0$  and its eccentricity is  $\frac{1}{\sqrt{2}}$ , then the length of its major axis is

ایک ناقص کا ماسکہ  $(-1, -1)$ ، یہ ماسکہ کی تعلقات کی ہادی خط کی مساوت  $x + y + 1 = 0$  اور اس کا بے مرکزیت  $\frac{1}{\sqrt{2}}$

ہو تو اس کا اکبر محور کا طول

Options :

1. ✔  $2$

2. ✖  $1$

3. ✖  $4$

4. ✖  $3$

Question Number : 56 Question Id : 3838233736 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If the normal drawn at the point  $(2, -1)$  to the ellipse  $x^2 + 4y^2 = 8$  meets the ellipse again at  $(a, b)$  then,  $17a =$

$$= 17a \text{ ، } x^2 + 4y^2 = 8 \text{ ناقص کو } (2, -1) \text{ نقطہ پر کھینچا گیا نارمل خط ناقص کو دوبارہ } (a, b) \text{ نقطہ پر قطع کرنے سے،}$$

Options :

1. ✖ 23

2. ✔ 14

3. ✖ 37

4. ✖ 9

Question Number : 57 Question Id : 3838233737 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$P(\theta)$  is a point on the hyperbola  $\frac{x^2}{a^2} - \frac{y^2}{9} = 1$ ,  $S$  is its focus lying on the positive X-axis

and  $Q = (0, 1)$ . If  $SQ = \sqrt{26}$  and  $SP = 6$ , then  $\theta =$

اور  $SQ = \sqrt{26}$  اور  $Q = (0, 1)$  ،  $S$  ماسک مثبت ہے  $-X$  محور پر اور  $\frac{x^2}{a^2} - \frac{y^2}{9} = 1$  پر ایک نقطہ ہے  $P(\theta)$

$$= \theta \text{ ، } SP = 6$$

Options :

1. ✖  $\frac{\pi}{6}$

2. ✘  $\frac{\pi}{4}$

3. ✔  $\frac{\pi}{3}$

4. ✘  $\text{Cos}^{-1}\left(\frac{2}{3}\right)$

Question Number : 58 Question Id : 3838233738 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If  $A(-2,4,a)$ ,  $B(1,b,3)$ ,  $C(c,0,4)$  and  $D(-5,6,1)$  are collinear points, then  $a+b+c=$

$$= a+b+c \text{ اگر } D(-5,6,1), C(c,0,4), B(1,b,3), A(-2,4,a) \text{ هم خطوط ہوتے ہں}$$

Options :

1. ✘ 4

2. ✔ 8

3. ✘ 12

4. ✘ -4

Question Number : 59 Question Id : 3838233739 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A(1, -2, 1) and B(2, -1, 2) are the end points of a line segment. If D( $\alpha, \beta, \gamma$ ) is the foot of the perpendicular drawn from C(1, 2, 3) to AB, then  $\alpha^2 + \beta^2 + \gamma^2 =$

تو، D( $\alpha, \beta, \gamma$ ) ایک خط قطع کا اختتامی نقطہ C(1, 2, 3) سے AB کو کھینچا گیا عمود کا قدم ہے،  
 $= \alpha^2 + \beta^2 + \gamma^2$

Options :

1. ✓ 18

2. ✗ 14

3. ✗ 9

4. ✗ 27

Question Number : 60 Question Id : 3838233740 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The foot of the perpendicular drawn from the point (-2, -1, 3) to a plane  $\pi$  is (1, 0, -2).

If  $a, b, c$  are the intercepts made by the plane  $\pi$  on X, Y, Z-axes respectively, then

$3a + b + 5c =$

(-2, -1, 3) نقطہ سے  $\pi$  مستوی کو کھینچا گیا عمود کا قدم (1, 0, -2) ،  $\pi$  مستوی X, Y, Z-محور پر بننے والے نقاط قطع ترتیب وار  
 $= 3a + b + 5c$  تب  $a, b, c$

Options :

1. ✗ 39

2. ✖ 26

3. ✔ 13

4. ✖ 0

Question Number : 61 Question Id : 3838233741 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$\lim_{x \rightarrow \frac{3}{2}} \frac{(4x^2 - 6x)(4x^2 + 6x + 9)}{\sqrt[3]{2x} - \sqrt[3]{3}} =$$

Options :

1. ✔  $\sqrt[3]{3^{17}}$

2. ✖  $\sqrt[3]{3^{16}}$

3. ✖  $\sqrt[3]{3^{15}}$

4. ✖  $\sqrt[3]{3^{14}}$

Question Number : 62 Question Id : 3838233742 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If the real valued function  $f(x) = \begin{cases} \frac{(4^x - 1)^4 \cot(x \log 4)}{\sin(x \log 4) \log(1 + x^2 \log 4)} & , \text{ if } x \neq 0 \\ k & , \text{ if } x = 0 \end{cases}$

is continuous at  $x = 0$ , then  $e^k =$

حقیقی تفاعلات پر  $x = 0$

$$f(x) = \begin{cases} \frac{(4^x - 1)^4 \cot(x \log 4)}{\sin(x \log 4) \log(1 + x^2 \log 4)} & , \text{ اگر } x \neq 0 \\ k & , \text{ اگر } x = 0 \end{cases}$$

$= e^k$  تسلسل ہو تب

Options :

1. ✖ 1

2. ✔ 4

3. ✖ e

4. ✖ 2

Question Number : 63 Question Id : 3838233743 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A function  $f : \mathbb{R} \rightarrow \mathbb{R}$  is such that  $yf'(x+y) + \cos mxy = 1 + yf'(x)$ . If  $m = 2$ , then

$f'(x) =$

$= f'(x)$  تب  $m = 2$  ہے اگر  $f : \mathbb{R} \rightarrow \mathbb{R}$  کا ایک تفاعل اس طرح کا ایک تفاعل  $yf'(x+y) + \cos mxy = 1 + yf'(x)$

Options :

1. ✘  $-2 \sin 2xy$

2. ✘  $4x$

3. ✘  $\frac{2 \sin 2xy}{y}$

4. ✔  $2x^2$

Question Number : 64 Question Id : 3838233744 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If  $y = \sqrt{\sin(\log 2x) + \sqrt{\sin(\log 2x) + \sqrt{\sin(\log 2x) + \dots \infty}}$ , then  $\frac{dy}{dx} =$

$$= \frac{dy}{dx} \text{ } y = \sqrt{\sin(\log 2x) + \sqrt{\sin(\log 2x) + \sqrt{\sin(\log 2x) + \dots \infty}}$$

Options :

1. ✘  $\frac{\cos(\log 2x)}{2x(2y-1)}$

2. ✘  $\frac{\cos(\log 2x)}{(2y-1)}$

3. ✔  $\frac{\cos(\log 2x)}{x(2y-1)}$

4. ✘  $\frac{\sin(\log 2x)}{x(2y-1)}$

Question Number : 65 Question Id : 3838233745 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$\text{If } y = \text{Tan}^{-1} \left[ \frac{\sin^3(2x) - 3x^2 \sin(2x)}{3x \sin^2(2x) - x^3} \right], \text{ then } \frac{dy}{dx} =$$
$$= \frac{dy}{dx} \text{ for } y = \text{Tan}^{-1} \left[ \frac{\sin^3(2x) - 3x^2 \sin(2x)}{3x \sin^2(2x) - x^3} \right]$$

Options :

1. ✘  $\frac{6x \cos(2x) - 3 \sin(2x)}{x^2 - \sin^2(2x)}$

2. ✘  $\frac{6x \sin(2x) - 3 \cos(2x)}{x^2 + \sin^2(2x)}$

3. ✘  $\frac{2x \cos(2x) - \sin(2x)}{x^2 + \sin^2(2x)}$

4. ✔  $\frac{6x \cos(2x) - 3 \sin(2x)}{x^2 + \sin^2(2x)}$

Question Number : 66 Question Id : 3838233746 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Derivative of  $(\sin x)^x$  with respect to  $x^{(\sin x)}$  is

$x^{(\sin x)}$  کے لحاظ سے  $(\sin x)^x$  کا مشتق

Options :

1. ✓  $\frac{(\sin x)^{x-1} [(\sin x) \log(\sin x) + x \cos x]}{x^{(\sin x-1)} [x \cos x(\log x) + \sin x]}$

2. ✘  $\frac{(\sin x)^x [(\sin x)(\log(\sin x) + x \cos x)]}{x^{(\sin x)} [x \cos x(\log x) + \sin x]}$

3. ✘  $\frac{x^{\sin x-1} [x \cos x(\log x) + \sin x]}{(\sin x)^{x-1} [(\sin x) \log(\sin x) + x \cos x]}$

4. ✘  $\frac{x^{\sin x} [x \cos x(\log x) + \sin x]}{(\sin x)^x [(\sin x) \log(\sin x) + x \cos x]}$

Question Number : 67 Question Id : 3838233747 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For a given function  $y = f(x)$ ,  $\delta y$  denotes the actual error in  $y$  corresponding to actual error  $\delta x$  in  $x$  and  $dy$  denotes the approximate value of  $\delta y$ . If  $y = f(x) = 2x^2 - 3x + 4$  and  $\delta x = 0.02$ , then the value of  $\delta y - dy$  when  $x = 5$  is

دیا ہوا تفاعل  $y = f(x)$  کو،  $x$  میں صحیح خطا  $\delta x$  کو  $y$  میں ہونے والے صحیح خطا  $\delta y$  کو ظاہر کرتی ہے۔ اور  $\delta y$  میں تقریبی

قیمتیں کو  $dy$  ظاہر کرتی ہے۔  $y = f(x) = 2x^2 - 3x + 4$  اور  $\delta x = 0.02$  ہو تو  $x = 5$  ہونے پر  $\delta y - dy$

کے قیمتیں

Options :

1. ✓ 0.0008

2. ✗ 0.008

3. ✗ 0.0004

4. ✗ 0.004

Question Number : 68 Question Id : 3838233748 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The length of the normal drawn at  $t = \frac{\pi}{4}$  on the curve  $x = 2(\cos 2t + t \sin 2t)$ ,

$y = 4(\sin 2t + t \cos 2t)$  is

منحنی پر  $t = \frac{\pi}{4}$  پر کھینچا گیا نارمل کا طول  $y = 4(\sin 2t + t \cos 2t)$  ،  $x = 2(\cos 2t + t \sin 2t)$

Options :

1. ✗  $\frac{4}{\pi} \sqrt{1 + \pi^2}$

2. ✓  $4\sqrt{1 + \pi^2}$

3. ✗  $4\pi$

4. ✗  $\frac{4}{\pi}$

Question Number : 69 Question Id : 3838233749 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If Water is poured into a cylindrical tank of radius 3.5 ft at the rate of 1 cu ft/min, then  
the rate at which the level of the water in the tank increases (in ft/min) is

اگر پانی کو 3.5 ft کے سینکڑے میں 1 cu ft/min کی شرح سے ڈالا جاتا ہے، تو ٹینک میں پانی کی سطح بڑھنے کی شرح (in ft/min)

Options :

1. ✘  $\frac{1}{154}$

2. ✘  $\frac{8}{77}$

3. ✔  $\frac{2}{77}$

4. ✘  $\frac{1}{11}$

Question Number : 70 Question Id : 3838233750 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$y = 2x^3 - 8x^2 + 10x - 4$  is a function defined on  $[1, 2]$ . If the tangent drawn at a point  
(a, b) on the graph of this function is parallel to X-axis and  $a \in (1, 2)$ , then  $a =$

$y = 2x^3 - 8x^2 + 10x - 4$  میں  $[1, 2]$  پر لینیے پر ایک تفاعل۔ یہ تفاعل کا گراف پر  $(a, b)$  نقطہ پر کھینچا گیا مماس کا خط X-  
محور کے متوازی ہے اور  $a \in (1, 2)$  ہو تو  $a =$

Options :

1. ✘ 0

2. ✘ 5

3. ✘ 1

4. ✔  $\frac{5}{3}$

Question Number : 71 Question Id : 3838233751 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If  $m$  and  $M$  are respectively the absolute minimum and absolute maximum values of a function  $f(x) = 2x^3 + 9x^2 + 12x + 1$  defined on  $[-3, 0]$ , then  $m + M =$

$m$  اور  $M$  میں ترتیب وار  $[-3, 0]$  پر لینے پر ایک تفاعل  $f(x) = 2x^3 + 9x^2 + 12x + 1$  کا بالکل خلیل اور بالکل اعظیم قدریں ہوتے  $m + M =$

Options :

1. ✔ -7

2. ✘ 0

3. ✘ 1

4. ✘ 5

Question Number : 72 Question Id : 3838233752 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$\int \frac{\sec x}{3(\sec x + \tan x) + 2} dx =$$

Options :

1. ✓  $\frac{1}{2} \log \left| \frac{\tan \frac{x}{2} + 1}{\tan \frac{x}{2} + 5} \right| + c$

2. ✘  $\frac{2}{\sqrt{11}} \tan^{-1} \left( \frac{3 \tan \frac{x}{2} + 4}{\sqrt{11}} \right) + c$

3. ✘  $\log |3 \sec x + 2 \tan x| + c$

4. ✘  $\log |3 \tan x + 2 \sec x| + c$

Question Number : 73 Question Id : 3838233753 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$\int \frac{dx}{4 + 3 \cot x} dx =$$

Options :

1. ✘  $-\frac{3}{25} \log |4 + 3 \cot x| + \frac{4}{25} x + c$

2. ✓  $-\frac{3}{25} \log|4 \sin x + 3 \cos x| + \frac{4}{25} x + c$

3. ✗  $\frac{4}{25} \log|4 \sin x + 3 \cos x| - \frac{3}{25} x + c$

4. ✗  $\frac{4}{25} \log|4 + 3 \cot x| - \frac{3}{25} x + c$

Question Number : 74 Question Id : 3838233754 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$\int \frac{dx}{(x+1)\sqrt{x^2+4}} =$$

Options :

1. ✗  $\frac{1}{2} \sqrt{\frac{x+1}{x+2}} + c$

2. ✗  $\log \left| \frac{x+2}{x+1} \right| + c$

3. ✓  $-\frac{1}{\sqrt{5}} \operatorname{Sinh}^{-1} \left( \frac{4-x}{2(x+1)} \right) + c$

4. ✗  $-\frac{1}{\sqrt{5}} \operatorname{Cosh}^{-1} \left( \frac{4+x}{2(x-1)} \right) + c$

Question Number : 75 Question Id : 3838233755 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If  $\int e^x(x^3 + x^2 - x + 4)dx = e^x f(x) + c$ , then  $f(1) =$

$$= f(1) \quad \int e^x(x^3 + x^2 - x + 4)dx = e^x f(x) + c$$

Options :

1. ✖ 0

2. ✖ 1

3. ✖ 2

4. ✔ 3

Question Number : 76 Question Id : 3838233756 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$\int_{\pi/5}^{3\pi/10} \frac{dx}{\sec^2 x + (\tan^{2022} x - 1)(\sec^2 x - 1)} =$$

Options :

1. ✔  $\frac{\pi}{20}$

2. ✖  $\frac{2\pi}{5}$

3. ✘  $\frac{3\pi}{20}$

4. ✘  $\frac{3\pi}{5}$

Question Number : 77 Question Id : 3838233757 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$\int_{-\pi/15}^{\pi/15} \frac{\cos 5x}{1+e^{5x}} dx =$$

Options :

1. ✘  $\frac{1}{5}$

2. ✔  $\frac{\sqrt{3}}{10}$

3. ✘  $\frac{1}{15}$

4. ✘  $\frac{1}{10}$

Question Number : 78 Question Id : 3838233758 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The area of the region (in sq. units) enclosed by the curves  $y = 8x^3 - 1$ ,  $y = 0$ ,  $x = -1$  and  $x = 1$  is

اگر  $x = 1$ ،  $x = -1$ ،  $y = 0$ ،  $y = 8x^3 - 1$  منحنیوں سے گہرا ہوا رقبہ (مربع/یونٹس)

Options :

1. ✘  $\frac{15}{4}$

2. ✘  $\frac{15}{8}$

3. ✔  $\frac{19}{4}$

4. ✘  $\frac{19}{8}$

Question Number : 79 Question Id : 3838233759 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If the equation of the curve which passes through the point (1,1) satisfies the

differential equation  $\frac{dy}{dx} = \frac{2x-5y+3}{5x+2y-3}$ , then the equation of that curve is

اگر (1,1) نقطہ سے گزرتا ہوا منحنی کی مساوت  $\frac{dy}{dx} = \frac{2x-5y+3}{5x+2y-3}$  تفریقی مساوت کو مطمئن کرتا ہو تو وہ منحنی کی مساوت

Options :

1. ✘  $x^2 + 5xy - y^2 + 3x - 3y - 5 = 0$

2. ✖  $x^2 + 5xy - y^2 + 3x + 3y - 11 = 0$

3. ✖  $x^2 - 5xy - y^2 - 3x - 3y + 11 = 0$

4. ✔  $x^2 - 5xy - y^2 + 3x + 3y - 1 = 0$

Question Number : 80 Question Id : 3838233760 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The general solution of the differential equation  
 $(6x^2 - 2xy - 18x + 3y)dx - (x^2 - 3x)dy = 0$  is

تفریقی مساوت کا عام حل  $(6x^2 - 2xy - 18x + 3y)dx - (x^2 - 3x)dy = 0$

Options :

1. ✔  $2x^3 - x^2y - 9x^2 + 3xy + c = 0$

2. ✖  $4x^3 - 2x^2y - 6x^2 + 6xy + c = 0$

3. ✖  $2x^2 - 4xy - y^2 - x + 3y + c = 0$

4. ✖  $3x^2 + 5xy - 2y^2 - 4x - 2y + c = 0$

## Physics

Section Id :

38382382

Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	40
Number of Questions to be attempted :	40
Section Marks :	40
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	38382382
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 81 Question Id : 3838233761 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The range of gravitational forces is

تجاذبی قوتوں کا سعت

Options :

1. ✘  $10^{-15}$  m

2. ✘  $10^{-39}$  m

infinity

3. ✔ لامتناہی

4. ✘  $10^{-2}$  m

Question Number : 82 Question Id : 3838233762 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In a simple pendulum experiment for the determination of acceleration due to gravity, the error in the measurement of the length of the pendulum is 1% and the error in the measurement of the time period is 2%. The error in the estimation of acceleration due to gravity is

ایک سادہ ر قاص کے تجربہ میں اسراع بوجہ جاذبہ زمین کے تعین میں پیمائش کے دوران ر قاص کے طول میں 1%

سہو (غلطی) ہو اور 2% وقت دوران میں سہو (غلطی) پیش آئے تب اسراع بوجہ جاذبہ زمین میں سہو (غلطی) ہو گا۔

Options :

1. ✘ 1%

2. ✘ 3%

3. ✘ 4%

4. ✔ 5%

Question Number : 83 Question Id : 3838233763 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The position  $x$  (in metre) of a particle moving along a straight line is given by  $x=t^3-12t+3$ , where 't' is time (in second). The acceleration of the particle when its velocity becomes  $15\text{ms}^{-1}$  is

ایک خط مستقیم میں حرکت کرنے والا ایک ذرہ کا مقام  $x$  (میٹر میں)  $x=t^3-12t+3$  ہے جہاں پر 't' (سیکنڈ میں) وقت ہے ذرہ کی رفتار  $15\text{ms}^{-1}$  ہو تب اسکی اسراع ہوگی۔

Options :

1. ✘  $15\text{ms}^{-2}$

2. ✘  $24\text{ms}^{-2}$

3. ✔  $18\text{ms}^{-2}$

4. ✘  $12\text{ms}^{-2}$

Question Number : 84 Question Id : 3838233764 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The maximum horizontal range of a ball projected from the ground is 32 m. If the ball is thrown with the same speed horizontally from the top of a tower of height 25 m, the maximum horizontal distance covered by the ball is

(acceleration due to gravity  $=10\text{ms}^{-2}$ )

ایک گیند کو زمین سے 32 میٹر انتہائی افقی سمت سے پھینکا جاتا ہے اگر 25 میٹر کی بلندی کے ایک مینار سے گیند کی اسی

چال سے افقی طور پر پھینکا جائے تب گیند کا طے کردہ انتہائی افقی فاصلہ ہوگا۔

(اسراع بوجہ جاذبہ زمین  $=10\text{ms}^{-2}$ )

Options :

1. ✔ 40 m

2. ✖ 57 m

3. ✖ 60 m

4. ✖ 75 m

Question Number : 85 Question Id : 3838233765 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A block of mass 5 kg is kept on a smooth horizontal surface. A horizontal stream of water coming out of a pipe of area of cross-section  $5 \text{ cm}^2$  hits the block with a velocity of  $5 \text{ ms}^{-1}$  and rebounds back with the same velocity. The initial acceleration of the block is (Density of water is  $1 \text{ g/cc}$ )

5 کلوگرام کمیت والا ایک بلاک کو چکنی افقی سطح پر رکھا گیا ہے  $5 \text{ cm}^2$  کے عرضی تراش رقبہ والے ایک پائپ سے

$5 \text{ ms}^{-1}$  کی رفتار سے افقی طور پر پانی کا دھار بہ رہا ہے پھر یہ پانی بلاک کو ٹکرا کر دوبارہ اسی رفتار سے واپس لوٹتا ہے تب بلاک کی

ابتدائی اسراع۔

(پانی کی کثافت  $1 \text{ g/cc}$ )

Options :

1. ✖  $10 \text{ ms}^{-2}$

2. ✖  $2.5 \text{ ms}^{-2}$

3. ✖  $12.5 \text{ ms}^{-2}$

4. ✔  $5 \text{ ms}^{-2}$

Question Number : 86 Question Id : 3838233766 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A constant force of  $(8\hat{i} - 2\hat{j} + 6\hat{k})$  N acting on a body of mass 2 kg displaces the body  
from  $(2\hat{i} + 3\hat{j} - 4\hat{k})$  m to  $(4\hat{i} - 3\hat{j} + 6\hat{k})$  m. The work done in the process is

2 کلوگرام کیت والے ایک جسم پر مستقل قوت  $(8\hat{i} - 2\hat{j} + 6\hat{k})$  N کو عائد کیا گیا ہے اس جسم کو  
 $(2\hat{i} + 3\hat{j} - 4\hat{k})$  m سے  $(4\hat{i} - 3\hat{j} + 6\hat{k})$  m کو نقل مقام کیا جاتا ہے تب اس عمل میں انجام شدہ کام ہوگا۔

Options :

1. ✖ 72 J

2. ✔ 88 J

3. ✖ 44 J

4. ✖ 36 J

Question Number : 87 Question Id : 3838233767 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A ball 'A' of mass 1.2 kg moving with a velocity of  $8.4 \text{ ms}^{-1}$  makes one dimensional elastic collision with a ball 'B' of mass 3.6 kg at rest. The percentage of kinetic energy transferred by ball 'A' to ball 'B' is

1.2 کلوگرام کمیت والا گیند 'A'  $8.4 \text{ ms}^{-1}$  کی رفتار سے 3.6 کلوگرام کمیت والے ساکن گیند 'B' سے ایک البعدی

لچکدار تصادم کرتا ہے تب گیند 'A' سے گیند 'B' کو منتقل ہونے والی توانائی بالحرکت کا فیصد ہوگا۔

Options :

1. ✘ 25%

2. ✘ 50%

3. ✔ 75%

4. ✘ 60%

Question Number : 88 Question Id : 3838233768 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A metre scale is balanced on a knife edge at its centre. When two coins, each of mass 9 g are kept one above the other at the 10 cm mark, the scale is found to be balanced at 35 cm. The mass of the metre scale is

ایک میٹر پیمانہ (اسکیل) اسکے مرکز میں چاقو کے کنارے پر متوازن ہوتا ہے جب 9 گرام کمیت کے دو سکے 10 سینٹی میٹر

کے نشان سے ایک دوسرے کے اوپر رکھے جاتے ہیں پیمانہ (اسکیل) 35 سینٹی میٹر پر متوازن پایا جاتا ہے تب میٹر پیمانہ (اسکیل) کی

کمیت ہوگی۔

Options :

1. ✘ 15 g

2. ✓ 30 g

3. ✘ 45 g

4. ✘ 60 g

Question Number : 89 Question Id : 3838233769 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A body of mass 'm' and radius 'r' rolling horizontally with a velocity 'V', rolls up an inclined plane to a vertical height  $\frac{V^2}{g}$ . The body is

ایک جسم جسکی کمیت 'm' اور نصف قطر 'r' جو 'V' رفتار سے افقی طور پر گھوم رہا ہے یہ جسم مائل سطح پر عمودی

بلندی  $\frac{V^2}{g}$  پر گھومتا ہے تب جسم ہے

Options :

a sphere

1. ✘ ایک کرہ

a circular disc

2. ✘ ایک دائروی قرص

a circular ring

3. ✓ ایک دائروی رنگ

4. ✘

a solid cylinder

ایک ٹھوس استوانہ

Question Number : 90 Question Id : 3838233770 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A massless spring of length ' $l$ ' and spring constant ' $k$ ' oscillates with a time period ' $T$ ' when loaded with a mass ' $m$ '. The spring is now cut into three equal parts and are connected in parallel. The frequency of oscillation of the combination when it is loaded with a mass ' $4m$ ' is

طول ' $l$ ' اور مرغولہ (اسپرنگ) کا مستقل ' $k$ ' والا ایک بغیر کمیت کا (اسپرنگ) مرغولہ پر ' $m$ ' کمیت کے وزن کو لگایا جاتا

ہے جو ' $T$ ' وقت دوران کے ساتھ اہتزاز کرتا ہے اس مرغولہ (اسپرنگ) کو تین مساوی حصوں میں کاٹ کر اسکو متوازی جوڑ دیا جاتا

ہے اس جوڑے ہوئے مرغولہ پر ' $4m$ ' کمیت کے وزن کو لگانے پر اہتزاز کا تعدد ہو گا۔

Options :

1. ✘  $\frac{2}{T}$

2. ✘  $\frac{2}{3T}$

3. ✘  $\frac{3}{T}$

4. ✔  $\frac{3}{2T}$

Question Number : 91 Question Id : 3838233771 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

An object of mass 'm' at a distance of '20R' from the centre of a planet of mass 'M' and radius 'R' has an initial velocity 'u'. The velocity with which the object hits the surface of the planet is

(G-Universal gravitational constant)

'M' کیت 'R' قطر والے ایک سیارہ کے مرکز سے '20R' کے فاصلہ پر 'm' کیت والے جسم کی ابتدائی رفتار 'u' ہے تب

اس جسم کو سیارہ کے سطح کو چھونے کیلئے رفتار

(G-کائناتی تجاذبی مستقل)

Options :

1. ✓  $\left[ u^2 + \frac{19 GM}{10 R} \right]^{\frac{1}{2}}$

2. ✗  $\left[ u^2 + \frac{19 Gm}{10 R} \right]^{\frac{1}{2}}$

3. ✗  $\left[ u^2 - \frac{19 GM}{10 R} \right]^{\frac{1}{2}}$

4. ✗  $\left[ u^2 - \frac{19 Gm}{10 R} \right]^{\frac{1}{2}}$

Question Number : 92 Question Id : 3838233772 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A simple pendulum is made of a metal wire of length 'L', area of cross-section 'A', material of Young's modulus 'Y' and a bob of mass 'm'. This pendulum is hung in a bus moving with a uniform speed 'V' on a horizontal circular road of radius 'R'. The elongation in the wire is

ایک سادہ ر قاص تار کا طول 'L'، عرضی تراش ر قبه 'A'، یگ کا مقیاس 'Y' اور 'm' کیت والے ر قاص سے بنایا گیا

ہے اس سادہ ر قاص کو افقی طور پر 'R' قطر والے دائرہ وی سڑک پر ابتدائی ر قدار 'V' سے چلنے والی بس (Bus) میں لٹکا یا گیا ہے تب تار

کا کھینچاؤ ہو گا۔

Options :

1. ✓  $\frac{mL}{RAY} \sqrt{g^2 R^2 + V^4}$

2. ✗  $\frac{mgL}{AY}$

3. ✗  $\frac{mLV^2}{RAY}$

4. ✗  $\frac{L}{AY} \sqrt{mg + \frac{mV^2}{R}}$

Question Number : 93 Question Id : 3838233773 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If the excess pressures inside two soap bubbles are in the ratio 2:3, then the ratio of the volumes of the soap bubbles is

دو صابن کے بلبوں کی اضافی دباؤ کی نسبت 2:3 ہے تب صابن کے بلبوں کی حجم کی نسبت ہوگی۔

Options :

1. ✗ 3:2

2. ✖ 9:4

3. ✔ 27:8

4. ✖ 81:16

Question Number : 94 Question Id : 3838233774 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The velocities of air above and below the surfaces of a flying aeroplane wing are  $50 \text{ ms}^{-1}$  and  $40 \text{ ms}^{-1}$  respectively. If the area of the wing is  $10 \text{ m}^2$  and the mass of the aeroplane is  $500 \text{ kg}$ , then as time passes by (density of air =  $1.3 \text{ kg m}^{-3}$ )

ایک اڑنے والی ہوائی جہاز کے پر کے اوپری اور نچلی سطحوں پر ہوائی رفتار بالترتیب  $50 \text{ ms}^{-1}$  اور  $40 \text{ ms}^{-1}$  ہے۔

پر کا رقبہ  $10 \text{ m}^2$  اور ہوائی جہاز کی کمیت  $500 \text{ kg}$  ہے، تب وقت کے گزرنے کے لحاظ سے۔

(density of air =  $1.3 \text{ kg m}^{-3}$ )

Options :

the aeroplane will gain altitude

1. ✔ ہوائی جہاز اونچائی حاصل کریگا

the aeroplane will experience weightlessness

2. ✖ ہوائی جہاز بے وزنی محسوس کریگا

the aeroplane will fly horizontally

3. ✖ ہوائی جہاز افقی طور پر اڑھنے لگے گا

the aeroplane will loose altitude

4. ✘ ہوائی جہاز اونچائی کھو دیگا

Question Number : 95 Question Id : 3838233775 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A pendulum clock loses 10.8 seconds a day when the temperature is  $38^{\circ}\text{C}$  and gains 10.8 seconds a day when the temperature is  $18^{\circ}\text{C}$ . The coefficient of linear expansion of the metal of the pendulum clock is

ایک ر قاص والی گھڑی میں  $38^{\circ}\text{C}$  کی تپش پر روزانہ 10.8 سیکنڈس وقت کا نقصان ہوتا ہے اور  $18^{\circ}\text{C}$  تپش پر روزانہ 10.8 سیکنڈس وقت کا فائدہ ہوتا ہے تب ر قاص والی گھڑی کے مادہ کی طولی پھیلاؤ کی شرح ہوگی۔

Options :

1. ✘  $7 \times 10^{-5} \text{ }^{\circ}\text{C}^{-1}$

2. ✘  $1.25 \times 10^{-5} \text{ }^{\circ}\text{C}^{-1}$

3. ✘  $5 \times 10^{-5} \text{ }^{\circ}\text{C}^{-1}$

4. ✔  $2.5 \times 10^{-5} \text{ }^{\circ}\text{C}^{-1}$

Question Number : 96 Question Id : 3838233776 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A liquid cools from a temperature of 368 K to 358 K in 22 minutes. In the same room, the same liquid takes 12.5 minutes to cool from 358 K to 353 K. The room temperature is

ایک ماٹھ 22 منٹ میں 368K تپش سے 358K پر ٹھنڈا ہو جاتا ہے۔ اسی کمرے میں وہی ماٹھ 12.5 منٹ میں 358K تپش سے 353K پر ٹھنڈا ہوتا ہے۔ تب کمرے کی تپش ہوگی۔

Options :

1. ✓ 27.5°C
2. ✗ 27.5 K
3. ✗ 30.5°C
4. ✗ 30.5 K

Question Number : 97 Question Id : 3838233777 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For a gas in a thermodynamic process, the relation between internal energy (U), the pressure (P) and the volume (V) is  $U = 3 + 1.5PV$ . The ratio of the specific heat capacities of the gas at constant volume and constant pressure is

ایک گیس کے حرکیاتی عمل میں ایک گیس کے اندرونی توانائی (U) دباؤ (P) حجم (V) کے درمیان رشتہ  
 $U = 3 + 1.5PV$  ہے تب مستقل حجم اور مستقل دباؤ پر گیس کے حرارت نوعیوں کی نسبت ہوگی۔

Options :

1. ✗  $\frac{5}{3}$

2. ✓

$$\frac{3}{5}$$

3. ✘  $\frac{4}{3}$

4. ✘  $\frac{3}{4}$

**Question Number : 98 Question Id : 3838233778 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

At a pressure P and temperature 127 °C, a vessel contains 21 g of a gas. A small hole is made into the vessel so that the gas in it leaks out. At a pressure of  $\frac{2P}{3}$  and a temperature of t °C, the mass of the gas leaked out is 5 g. Then t =

دباؤ P اور تپیش 127 °C پر ایک برتن میں 21g گیس پائی جاتی ہے گیس کے برتن سے گیس باہر جانے کیلئے برتن کو

تھوٹا سا سوراخ کیا گیا ہے دباؤ  $\frac{2P}{3}$  اور تپیش t °C پر 5g گیس برتن سے باہر جائے گی تب t =

**Options :**

1. ✘ 273 °C

2. ✔ 77 °C

3. ✘ 350 °C

4. ✘ 87 °C

Question Number : 99 Question Id : 3838233779 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The tension applied to a metal wire of one metre length produces an elastic strain of 1%.  
The density of the metal is  $8000 \text{ kgm}^{-3}$  and Young's modulus of the metal is  
 $2 \times 10^{11} \text{ Nm}^{-2}$ . The fundamental frequency of the transverse waves in the metal wire is

ایک میٹر طول والے ایک مادہ کی تار پر تناؤ عائد کرنے پر 1% کا پگھلاؤ پیدا ہوتا ہے۔ مادہ کی کثافت  $8000 \text{ kgm}^{-3}$   
اور مادہ کے ینگ کا مقیاس  $2 \times 10^{11} \text{ Nm}^{-2}$  ہے مادہ کے تار میں عرضی موجوں کا بنیادی تعدد ہوگا۔

Options :

1. ✘ 500 Hz
2. ✘ 375 Hz
3. ✔ 250 Hz
4. ✘ 125 Hz

Question Number : 100 Question Id : 3838233780 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Two closed pipes when sounded simultaneously in their fundamental modes produce 6 beats per second. If the length of the shorter pipe is 150 cm, then the length of the longer pipe is

(Speed of sound in air =  $336 \text{ ms}^{-1}$ )

دو بند پائپ اپنے بنیادی موڈ میں بیک وقت بجائیں تو (آواز پیدا کی جائے) 6 تال فی سیکنڈ پیدا ہوتے ہیں اگر پست پائپ کا

طول 150 سینٹی میٹر ہے تب طویل پائپ کا طول ہوگا

(آواز کی رفتار ہوا میں  $= 336 \text{ ms}^{-1}$ )

Options :

1. ✓ 168 cm

2. ✗ 184 cm

3. ✗ 176 cm

4. ✗ 192 cm

Question Number : 101 Question Id : 3838233781 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

An object placed at a distance of 24 cm from a concave mirror forms an image at a distance of 12 cm from the mirror. If the object is moved with a speed of  $12 \text{ ms}^{-1}$ , then the speed of the image is

ایک مقعر آئینہ سے 24 سینٹی میٹر کے فاصلہ پر ایک شے کو رکھا گیا ہے آئینہ سے اس کا خیال 12 سینٹی میٹر فاصلہ بنتا ہے

اگر شے کو  $12 \text{ ms}^{-1}$  کی چال سے حرکت دی جائے تب خیال کی چال ہوگی۔

Options :

1. ✗  $24 \text{ ms}^{-1}$

2. ✓  $3 \text{ ms}^{-1}$

3. ✗  $6 \text{ ms}^{-1}$

4. ✗  $12 \text{ ms}^{-1}$

Question Number : 102 Question Id : 3838233782 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

When the object and the screen are 90 cm apart, it is observed that a clear image is formed on the screen when a convex lens is placed at two positions separated by 30 cm between the object and the screen. The focal length of the lens is

شے اور پردہ 90 سینٹی میٹر کے فاصلہ پر رکھا گیا ہے ایک محدب عدسہ کو 30 سینٹی میٹر کے فاصلہ پر موجود دو مقامات پر شے

اور پردہ کے درمیان رکھنے پر صحیح خیال کو نوٹ کیا گیا تب عدسہ کا اسکی طول ہوگا۔

Options :

1. ✗ 21.4 cm

2. ✓ 20 cm

3. ✗ 30 cm

4. ✗ 30.8 cm

Question Number : 103 Question Id : 3838233783 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

When a monochromatic light is incident on a surface separating two media, both the reflected and refracted lights have the same

جب ایک رنگی شعاع کسی سطح پر واقع ہوتی ہے تو دو میڈیا میں علیحدہ ہوتی ہے تب انعکاس نور اور انعطاف نور دونوں ایک

ہی — میں ہوتے ہیں۔

Options :

frequency

1. ✓ تعداد

wavelength

2. ✗ طول موج

velocity

3. ✗ رفتار

amplitude

4. ✗ حیث ارتعاش

Question Number : 104 Question Id : 3838233784 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The electric flux due to an electric field  $\vec{E} = (8\hat{i} + 13\hat{j}) \text{ NC}^{-1}$  through an area  $3 \text{ m}^2$  lying in the XZ plane is

3 m<sup>2</sup> سطح میں 'XZ' سے وجہ سے  $\vec{E} = (8\hat{i} + 13\hat{j}) \text{ NC}^{-1}$  برقی میدان کی وجہ سے 'XZ' سطح میں 3 m<sup>2</sup> رقبہ کے ذریعہ برقی نفوذ ہوگا۔

Options :

1. ✓ 39 Wb

2. ✗ 24 Wb

3. ✗ 63 Wb

4. ✗ 15 Wb

Question Number : 105 Question Id : 3838233785 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A capacitor of capacitance 'C' is charged to a potential 'V' and disconnected from the battery. Now if the space between the plates is completely filled with a substance of dielectric constant 'K', the final charge and the final potential on the capacitor are respectively

ایک ظرفیہ کی ظرفیت C کو قوتہ 'V' کے ذریعہ چارج کیا گیا اور برقی خانہ سے الگ کیا جاتا ہے اب تختیوں کے درمیان  
جگہ کو ذوبرتی مستقل 'K' سے بھرا جاتا ہے تب ظرفیہ کی اختتامی چارج اور اختتامی قوتہ بالترتیب ہوگی۔

Options :

1. ✗  $KCV$  and  $\frac{V}{K}$

2. ✓  $CV$  and  $\frac{V}{K}$

3. ✗  $\frac{CV}{K}$  and  $KV$

4. ✘  $\frac{CV}{K}$  and  $\frac{V}{K}$

Question Number : 106 Question Id : 3838233786 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A voltmeter of resistance  $400 \Omega$  is used to measure the emf of a cell with an internal resistance of  $4 \Omega$ . The error in the measurement of emf of the cell is

4  $\Omega$  اندرونی مزاحمت والے cell کا emf کی پیمائش کیلئے  $400 \Omega$  مزاحمت والے وولٹ میٹر کو استعمال

کیا گیا تب cell کے emf کے پیمائش کے دوران حاصل ہوا سہو (غلطی)۔

Options :

1. ✘ 1.01%

2. ✘ 2.01%

3. ✘ 1.99%

4. ✔ 0.99%

Question Number : 107 Question Id : 3838233787 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

When two wires are connected in the two gaps of a meter bridge, the balancing length is 50 cm. When the wire in the right gap is stretched to double its length and again connected in the same gap, then the new balancing length from the left end of the bridge wire is

ایک میٹر پل کے دو خالی جگہوں میں دو تار جوڑنے پر توازی طول 50 سینٹی میٹر ہے دائیں جانب خالی جگہ کی تار کو دو گنا طول کھینچ کر پھر اسی خالی جگہ میں جوڑ دیا جائے تب پل کی تار کے بائیں آخری سے نیا توازی طول (لمبائی) حاصل ہوگی۔

**Options :**

1. ✘ 80 cm
2. ✔ 20 cm
3. ✘ 33.3 cm
4. ✘ 66.6 cm

**Question Number : 108 Question Id : 3838233788 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

A magnetic field is applied in y-direction on an  $\alpha$  – particle travelling along x-direction. The motion of the  $\alpha$  – particle will be

X-رخ میں سفر کردہ ایک  $\alpha$  ذرہ پر y-رخ میں مقناطیسی میدان کو عائد کیا گیا تب  $\alpha$  - ذرہ کی حرکت۔

**Options :**

along x-axis

1. ✘ -x محور کے ساتھ

a circle in xz plane

2. ✔ xz سطح میں دائرہ کی شکل میں

a circle in yz plane

3. ✖ سطح میں دائرہ کی شکل میں yz

a circle in xy plane

4. ✖ سطح میں دائرہ کی شکل میں xy

Question Number : 109 Question Id : 3838233789 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A straight wire carrying a current of  $2\sqrt{2}$  A is making an angle of  $45^\circ$  with the direction of uniform magnetic field of 3 T. The force per unit length on the wire due to the magnetic field is

$2\sqrt{2}$  A برقی رو والی ایک سیدھی تار 3T کے ہموار مقناطیسی میدان کی سمت سے  $45^\circ$  زاویہ بناتی ہے، تب مقناطیسی میدان کے ذریعہ تار کے فی اکائی طول پر عمل کرنے والی قوت ہوگی۔

Options :

1. ✖  $4 \text{ Nm}^{-1}$

2. ✖  $8 \text{ Nm}^{-1}$

3. ✔  $6 \text{ Nm}^{-1}$

4. ✖  $3 \text{ Nm}^{-1}$

Question Number : 110 Question Id : 3838233790 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The magnetizing field which produces a magnetic flux of  $22 \times 10^{-6}$  Wb in a metal bar of area of cross-section  $2 \times 10^{-5} \text{ m}^2$  is (susceptibility of the metal = 699)

کے  $2 \times 10^{-5} \text{ m}^2$  کے عرضی تراشی رقبہ والے سلاخی مقناطیس میں  $22 \times 10^{-6}$  Wb مقناطیسی نفوذ پیدا کرنے کے

لئے مقناوی میدان (مادہ کی صلاحیت = 699) ہوگا

Options :

1. ✘  $2500 \text{ Am}^{-1}$

2. ✔  $1250 \text{ Am}^{-1}$

3. ✘  $3750 \text{ Am}^{-1}$

4. ✘  $5000 \text{ Am}^{-1}$

Question Number : 111 Question Id : 3838233791 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The energy stored in a coil of inductance 80 mH carrying a current of 2.5 A is

2.5A برقی رو 80 mH اہاریت والے تار کے لچھے میں جمع شدہ توانائی۔

Options :

1. ✘ 1.25 J

2. ✘ 0.75 J

3. ✔ 0.25 J

4. ✘ 0.50 J

Question Number : 112 Question Id : 3838233792 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A capacitor and a resistor are connected in series to an ac source. If the ratio of the capacitive reactance of the capacitor and the resistance of the resistor is 4:3, then the power factor of the circuit is

ایک ظرفیہ اور مزاحمہ کو سلسلہ وار ac مبداء سے جوڑا گیا ہے اگر ظرفیہ کی ظرفیہ اثریت اور مزاحمہ کی مزاحمت 4:3 نسبت

میں ہو تب Circuit کے طاقت جز ضربی۔

Options :

1. ✘ 0.3

2. ✘ 0.8

3. ✔ 0.6

4. ✘ 0.5

Question Number : 113 Question Id : 3838233793 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For the displacement current through the plates of a parallel plate capacitor of capacitance  $30 \mu\text{F}$  to be  $150 \mu\text{A}$ , the potential difference across the plates of the capacitor has to vary at the rate of

30  $\mu\text{F}$  ظرفیت والا ایک متوازی تختیوں والا ظرفیہ کے ذریعہ  $150 \mu\text{A}$  برقی رو کے نقل مکان ہونے کیلئے ظرفیہ کے تختیوں کے درمیان تفاوت قوتہ تبدیلی شرح ہوگا۔

Options :

1. ✘  $10 \text{ Vs}^{-1}$
2. ✔  $5 \text{ Vs}^{-1}$
3. ✘  $15 \text{ Vs}^{-1}$
4. ✘  $20 \text{ Vs}^{-1}$

Question Number : 114 Question Id : 3838233794 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The work functions of two photosensitive metal surfaces A and B are in the ratio 2:3. If  $x$  and  $y$  are the slopes of the graphs drawn between the stopping potential and frequency of incident light for the surfaces A and B respectively, then  $x : y =$

تفاعل کام والے دو ضیائی حساس مادوں کے سطح A اور B، بہ نسبت 2:3 میں ہیں اگر ساکت قوتہ اور وقوع پذیر شعاع کے سطحوں کو A اور B کو گراف میں بالترتیب  $x$  اور  $y$  ڈھلوان سے بتلایا گیا ہے تب  $x:y =$

Options :

1. ✔ 1:1
2. ✘ 2:3

3. ✖ 4:9

4. ✖ 2:5

Question Number : 115 Question Id : 3838233795 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In hydrogen atom, the frequency of the photon emitted when an electron jumps from second orbit to first orbit is 'f'. The frequency of the photon emitted when an electron jumps from third excited state to first excited state is

ایک ہائیڈروجن جوہر میں ایک الیکٹران دوسرے مدار سے پہلے مدار پر چھلانگ لگاتا ہے تب فونان 'f' تعدد کے ساتھ خارج ہوتا ہے اگر الیکٹران تیسرے اکسائی حالت سے پہلے اکسائی حالت کو چھلانگ لگانے پر خارج ہونے والے فونان کا تعدد ہوگا۔

Options :

1. ✖  $\frac{f}{2}$

2. ✔  $\frac{f}{4}$

3. ✖  $\frac{f}{8}$

4. ✖ f

Question Number : 116 Question Id : 3838233796 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If the ratio of the radii of nuclei  ${}_{52}X^A$  and  ${}_{13}Al^{27}$  is 5:3, then the number of neutrons in the nucleus X is

اور  ${}_{52}X^A$  مرکزوں کے نصف قطروں کی نسبت 5:3 ہے تب X مرکزہ میں نیوٹرانس کی تعداد

Options :

1. ✘ 52

2. ✘ 63

3. ✘ 27

4. ✔ 73

Question Number : 117 Question Id : 3838233797 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Half-life periods of two nuclei A and B are T and 2T respectively. Initially A and B have same number of nuclei. After a time of 4T, the ratio of the remaining number of nuclei of A and B is

A اور B دو مرکزوں کے نصف مدت عمر بالترتیب T اور 2T ہیں ابتداء میں A اور B کے مرکزوں کی تعداد مساوی تھی

4T وقت کے بعد A اور B کے بقیہ مرکزوں کی نسبت

Options :

1. ✘ 1:16

2. ✔ 1:4

3. ✖ 1:1

4. ✖ 1:2

Question Number : 118 Question Id : 3838233798 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Match the devices given in List-I with their uses given in List-II

فہرست - I میں دئے گئے آلات کو فہرست - II میں دئے گئے انکے استعمالات سے جوڑئے۔

List - I فہرست - I		List - II فہرست - II	
a	Transistor ٹرانسسٹر	e	Filter circuit فلٹر دور (سرکیوٹ)
b	Diode ڈائیوڈ	f	Voltage regulator ووٹیج ریگولیٹر
c	Zener diode زینر ڈائیوڈ	g	Rectifier راست گر
d	Capacitor ظرفیہ	h	Amplifier افزوں گر کار

Correct answer is

صحیح جواب ہے

Options :

1. ✖ a - h, b - g, c - e, d - f

2. ✖ a - h, b - f, c - e, d - g

3. ✓ a – h, b – g, c – f, d – e

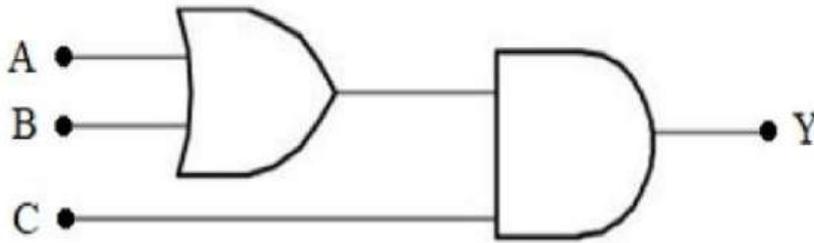
4. ✗ a – e, b – h, c – g, d – f

Question Number : 119 Question Id : 3838233799 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

To get output 1 for the following logic circuit, the correct choice of the inputs is

مندرجہ ذیل میں دئے گئے منطقی سرکیوٹ سے نخرجہ 1 حاصل کرنے کے لئے مدخلہ کا صحیح انتخاب



Options :

1. ✗ A = 1, B = 1, C = 0

2. ✗ A = 0, B = 1, C = 0

3. ✓ A = 1, B = 0, C = 1

4. ✗ A = 0, B = 0, C = 1

Question Number : 120 Question Id : 3838233800 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The maximum distance between the transmitting and receiving antennas is  $D$ . If the heights of both transmitting and receiving antennas are doubled, then the maximum distance between the two antennas is

ترسیل اور حاصل شدہ انٹینا کے درمیان انتہائی فاصلہ  $D$  ہے اگر ترسیل اور حاصل شدہ انٹینا کی بلندی کو دوگنا کر دیا جائے تب دو انٹینا کے درمیان انتہائی فاصلہ

Options :

1. ✖  $2D$

2. ✔  $D\sqrt{2}$

3. ✖  $4D$

4. ✖  $\frac{D}{\sqrt{2}}$

## Chemistry

Section Id :	38382383
Section Number :	3
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	40
Number of Questions to be attempted :	40
Section Marks :	40
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1

Sub-Section Id : 38382383

Question Shuffling Allowed : No

Is Section Default? : null

Question Number : 121 Question Id : 3838233801 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If  $n, l$  represent the principal and azimuthal quantum numbers respectively, the formula used to know the number of radial nodes possible for a given orbital is

اگر  $n, l$  صددری اور سمتی مقادیری اعداد کی نمائندگی کرتے ہیں۔ دئے گئے آر بیٹل کے لئے ممکنہ نصف قطری عقدے کی تعداد کو معلوم کرنے کے لئے استعمال ہونے والا ضابطہ ہے۔

Options :

1. ✘  $(n-l)$

2. ✘  $(n-l+1)$

3. ✔  $(n-l-1)$

4. ✘  $(n-2)$

Question Number : 122 Question Id : 3838233802 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If the radius of first orbit of hydrogen like ion is  $1.763 \times 10^{-2}$  nm, the energy associated with that orbit (in J) is

ہائیڈروجن جیسے رواں کے پہلے مدار کا نصف قطر  $1.763 \times 10^{-2}$  nm ہے۔ اس مدار کی توانائی (J میں) میں ہوگی۔

Options :

1. ✘  $+1.962 \times 10^{-17}$

2. ✔  $-1.962 \times 10^{-17}$

3. ✘  $-0.872 \times 10^{-17}$

4. ✘  $-2.18 \times 10^{-18}$

Question Number : 123 Question Id : 3838233803 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If first ionization enthalpy ( $\Delta_i H$ ) values of Na, Mg and Si are respectively 496, 737 and 786  $\text{kJ mol}^{-1}$ , the first ionization enthalpy value of Al (in  $\text{kJ mol}^{-1}$ ) will be

Na، Mg اور Si کی پہلی روانی لہنتھالپی بالترتیب 496، 737 اور  $786 \text{ kJ mol}^{-1}$  ہے۔ Al کی پہلی روانی لہنتھالپی

کی قدر ( $\text{kJ mol}^{-1}$  میں) ہوگی۔

Options :

1. ✔ 575

2. ✘ 760

3. ✘ 400

4. ✖ 790

Question Number : 124 Question Id : 3838233804 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Among the oxides  $\text{SiO}_2$ ,  $\text{SO}_2$ ,  $\text{Al}_2\text{O}_3$  and  $\text{P}_2\text{O}_3$ , the correct order of acidic strength is

آکسائیڈس  $\text{SiO}_2$ ,  $\text{SO}_2$ ,  $\text{Al}_2\text{O}_3$  اور  $\text{P}_2\text{O}_3$  میں ترشی طاقت کی صحیح ترتیب ہے۔

Options :

1. ✖  $\text{SiO}_2 < \text{SO}_2 < \text{Al}_2\text{O}_3 < \text{P}_2\text{O}_3$

2. ✖  $\text{SO}_2 < \text{P}_2\text{O}_3 < \text{Al}_2\text{O}_3 < \text{SiO}_2$

3. ✔  $\text{Al}_2\text{O}_3 < \text{SiO}_2 < \text{P}_2\text{O}_3 < \text{SO}_2$

4. ✖  $\text{Al}_2\text{O}_3 < \text{P}_2\text{O}_3 < \text{SiO}_2 < \text{SO}_2$

Question Number : 125 Question Id : 3838233805 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

According to molecular orbital theory, which of the following statement is not correct?

سالمی آرینال کے نظریے کے مطابق، مندرجہ ذیل بیان صحیح نہیں ہے؟

Options :

1. ✖

$C_2$  molecule is diamagnetic in nature

$C_2$  سالمہ ڈیامقناطیسی خاصیت رکھتا ہے۔

Bond order of  $C_2$  molecule is 2

2. ✖  $C_2$  سالمہ کا بانڈ آرڈر 2 ہے۔

$C_2^-$  ion is paramagnetic in nature

3. ✖  $C_2^-$  رواں پیرامقناطیسی خاصیت رکھتا ہے۔

$C_2$  consists of 1  $\sigma$  and 1  $\pi$  bond

4. ✔  $C_2$  میں 1  $\sigma$  اور 1  $\pi$  بند موجود ہوتا ہے۔

Question Number : 126 Question Id : 3838233806 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The melting point of o-hydroxybenzaldehyde (A) is lower than that of p-hydroxybenzaldehyde (B). This is because

o-ہائیڈراکسی بینزال ڈیہائیڈ (A) کا نقطہ اامت، p-ہائیڈراکسی بینزال ڈیہائیڈ (B) سے کم ہوتا ہے۔ اس کی وجہ

Options :

(A) has intermolecular H-bonding and (B) has intramolecular H-bonding

1. ✖ (A) بین سالمی H-بندش اور (B) دروں سالمی H-بندش رکھتا ہے۔

Both (A) and (B) have intermolecular H-bonding

2. ✖ (A) اور (B) دونوں بین سالمی H-بندش رکھتا ہے۔

Both (A) and (B) have intramolecular H-bonding

3. ✘ (A) اور (B) دونوں دروں سالمی H-بندش رکھتا ہے۔

(A) has intramolecular H-bonding and (B) has intermolecular H-bonding

4. ✔ (A) دروں سالمی H-بندش اور (B) بین سالمی H-بندش رکھتے ہیں۔

Question Number : 127 Question Id : 3838233807 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

At what temperature will the RMS velocity of sulphur dioxide molecules at 400 K be the same as the most probable velocity of oxygen molecules?

کس تپش پر سلفر ڈائی آکسائیڈ کی RMS رفتار 400 K پر آکسیجن سالمے کی اعظم امکانی رفتار کے مساوی ہوتی ہے؟

Options :

1. ✘ 600 K

2. ✘ 200 K

3. ✘ 400 K

4. ✔ 300 K

Question Number : 128 Question Id : 3838233808 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

0.43 g of a metal of valence 2 was dissolved in 50 mL of 0.5M H<sub>2</sub>SO<sub>4</sub> solution. The unreacted acid required 14.2 mL of 1M NaOH solution for neutralization. The atomic weight of the metal is

0.43 گرام دھات جس کی گرفت 2 valence ہے 50 mL، 0.5M H<sub>2</sub>SO<sub>4</sub> محلول میں حل کیا گیا ہے۔

غیر تعاملی ترشہ کو تعدیل کے لیے 14.2 mL، 1M NaOH محلول درکار ہوتا ہے۔ دھات کا جوہرہ وزن کیا ہوگا۔

Options :

1. ✘ 56 u

2. ✘ 40 u

3. ✘ 27 u

4. ✔ 24 u

Question Number : 129 Question Id : 3838233809 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

At 300 K, 3.0 moles of an ideal gas at 3.0 atm pressure is compressed isothermally to one half of its volume by an external pressure of 6.0 atm. The work done (in kJ) is (Given, R=0.082 L atm K<sup>-1</sup>mol<sup>-1</sup>) (1 L atm = 101.3 J)

300 K اور 3.0 کرہ ہوائی دباؤ پر 3.0 مول والی مثالی گیس کو مستقل تپش پر چمکایا گیا ہے۔ اس سے اس کا حجم

(کرہ ہوائی) 6.0 کے بیرونی دباؤ پر نصف ہو جاتا ہے۔ انجام شدہ کام (kJ میں)

دیا گیا ہے (R=0.082 L atm K<sup>-1</sup> mol<sup>-1</sup>) (1 L atm = 101.3 J)

Options :

1. ✔ 7.476

2. ✖ 11.214

3. ✖ 3.738

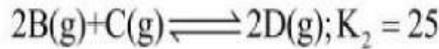
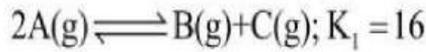
4. ✖ 14.952

Question Number : 130 Question Id : 3838233810 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

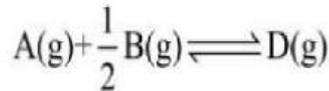
At T(K) the equilibrium constants for the following two reactions are given below

T(K) پر ذیل میں دیئے گئے دو تعاملات کے لئے توازنی مستقل



What is the value of equilibrium constant (K) for the reaction given below at T(K)?

نیچے دیئے گئے تعامل کے لئے T(K) پر توازنی مستقل (K) کی قدر کیا ہے؟



Options :

1. ✖ 100

2. ✖ 50

3. ✔ 20

4. ✖ 75

Question Number : 131 Question Id : 3838233811 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Identify the pair of hydrides which have polymeric structure

ہمہ سالمی ساخت رکھنے والی ہائیڈرائڈس کی جوڑی کی نشاندہی کیجئے۔

Options :

1. ✘ LiH, NaH
2. ✔ BeH<sub>2</sub>, MgH<sub>2</sub>
3. ✘ NH<sub>3</sub>, CH<sub>4</sub>
4. ✘ B<sub>2</sub>H<sub>6</sub>, H<sub>2</sub>O

Question Number : 132 Question Id : 3838233812 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Match the following

مندرجہ ذیل کی جوڑیاں بنائیے۔

List - I (فہرست - I)		List - II (فہرست - II)	
Alloy		Use	
بھرت		استعمال	
A	Li-Pb	I	In aircraft construction ہوائی جہاز کی تیاری میں
B	Be-Cu	II	To make bearings for motor engines موٹر انجن کے بیرنگ کی تیاری میں
C	Mg-Al	III	To make tetraethyl lead ٹیٹرا ایٹھائل لیڈ کی تیاری میں
D	Na-Pb	IV	To make high strength springs زیادہ طاقت والی اسپرنگ کی تیاری میں

Correct answer is

صحیح جواب ہے

Options :

1. ✘ A-II; B-IV; C-III; D-I

2. ✔ A-II; B-IV; C-I; D-III

3. ✘ A-IV; B-I; C-II; D-III

4. ✘ A-III; B-II; C-I; D-IV

Question Number : 133 Question Id : 3838233813 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The hydroxide of which of the following metal reacts with both acid and alkali?

مندرجہ ذیل میں کونسی دھات کے ہائیڈروآکسائیڈ تڑپ اور اساس دونوں سے تعامل کرتے ہیں۔

Options :

1. ✖ Mg

2. ✖ Na

3. ✔ Be

4. ✖ Ca

Question Number : 134 Question Id : 3838233814 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The correct formula of borax is  $\text{Na}_2[\text{B}_4\text{O}_5(\text{OH})_x] \cdot y\text{H}_2\text{O}$ . The sum of  $x$  and  $y$  is

بوراکس کا صحیح ضابطہ  $\text{Na}_2[\text{B}_4\text{O}_5(\text{OH})_x] \cdot y\text{H}_2\text{O}$  ہے۔  $x$  اور  $y$  کی جملہ قدر

Options :

1. ✖ 14

2. ✖ 09

3. ✔ 12

4. ✖ 10

Question Number : 135 Question Id : 3838233815 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Formic acid on heating with concentrated  $H_2SO_4$  at 373 K gives X, a colourless substance and Y, a good reducing agent. The number of  $\sigma$  and  $\pi$  bonds in X, Y are respectively

فارمک ترشہ کو مرکوز  $H_2SO_4$  کے ساتھ 373 K پر گرم کرنے پر ایک بے رنگ شے اور Y اچھا تھوئیلی عامل حاصل

ہوتا ہے۔ X اور Y میں  $\sigma$  اور  $\pi$  بند کی تعداد بالترتیب

Options :

1. ✓ X = 2, 0; Y = 1, 2
2. ✗ X = 1, 2; Y = 2, 2
3. ✗ X = 2, 1; Y = 1, 1
4. ✗ X = 1, 2; Y = 3, 3

Question Number : 136 Question Id : 3838233816 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Eutrophication can lead to  
یوٹروفیکیشن (کامل تغذیہ) اس کا باعث بنتی ہے۔

Options :

- 1.

Decrease in nutrients

✖ مقویات میں کمی

Increase in dissolved salts

2. ✖ حل شدہ نمکیات میں اضافہ

Decrease in dissolved oxygen

3. ✔ حل شدہ آکسیجن میں کمی

Decrease in water pollution

4. ✖ آبی آلودگی میں کمی

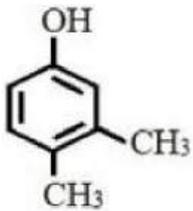
Question Number : 137 Question Id : 3838233817 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In which of the following options, the IUPAC name is not correctly matched with the of structure of the compound?

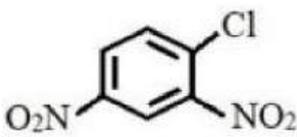
مندرجہ ذیل میں کونسے انتخاب میں مرکب کا IUPAC نام اس کی ساخت کے ساتھ مشابہت نہیں رکھتا۔

Options :



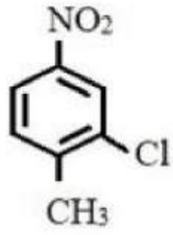
1. ✖

3,4 - Dimethylphenol  
3,4-ڈائی میتھائل فینال



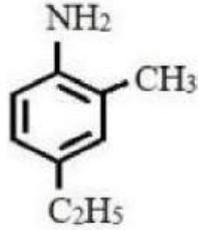
2. ✔

4 - Chloro - 1,3 - dinitrobenzene  
4-کلورو - 1,3 - ڈائی نائیٹرو بنزین



2 - Chloro - 1 - methyl - 4 - nitrobenzene  
2-کلورو-1- میتھائل -4- نائیٹرو بنزین

3. ✖



4 - Ethyl - 2 - methylaniline  
4-ایتھائل -2- میتھائل انیلین

4. ✖

Question Number : 138 Question Id : 3838233818 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider the following carbocations

مندرجہ ذیل کاربوکیٹیاں کو غور کریں۔

$\text{C}_6\text{H}_5\text{CH}_2^+$	$\text{CH}_2=\text{CH}^+$	$\text{CH}_3-\overset{+}{\text{C}}(\text{H})-\text{CH}_3$	$\text{CH}_3-\overset{+}{\text{C}}\text{H}_2$	$\text{HC}\equiv\overset{+}{\text{C}}$
I	II	III	IV	V

Arrange the above carbocations in the order of decreasing stability

گھٹی ہوئی قیام پذیری کے اعتبار سے اوپر دیئے گئے کاربوکیٹیاں کو ترتیب دیجئے۔

Options :

1. ✓ I > III > IV > II > V

2. ✖ V > II > IV > III > I

3. ✖ V > II > III > I > IV

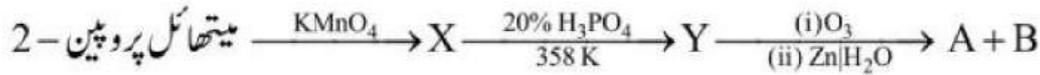
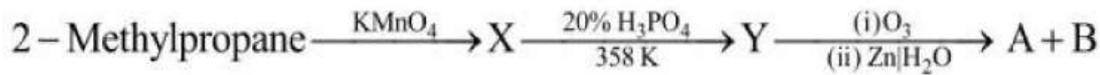
4. ✖ II > III > IV > V > I

Question Number : 139 Question Id : 3838233819 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider the following reaction sequence

مندرجہ ذیل تعالیٰ سلسلے کو غور کریں



What are A and B?

A اور B کیا ہیں؟

Options :

1. ✖  $\text{CH}_3\text{CH}=\text{O}$ ,  $\text{CH}_3\text{CH}=\text{O}$

2. ✔  $(\text{CH}_3)_2\text{C}=\text{O}$ ,  $\text{CH}_2=\text{O}$

3. ✖  $(\text{CH}_3)_2\text{C}=\text{O}$ ,  $\text{CH}_3\text{CH}=\text{O}$

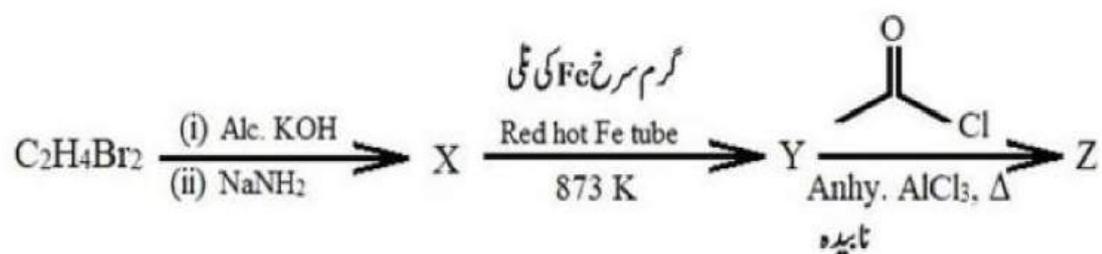
4. ✖  $\text{CH}_3\text{CH}=\text{O}$ ,  $\text{CH}_2=\text{O}$

Question Number : 140 Question Id : 3838233820 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

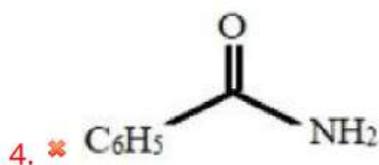
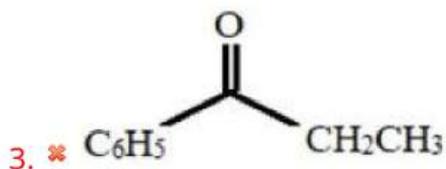
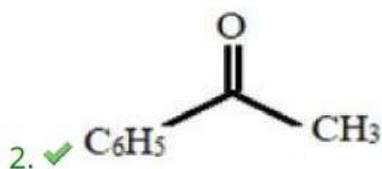
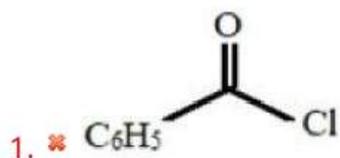
Correct Marks : 1 Wrong Marks : 0

Identify the end product (Z) in the sequence of the following reactions

مندرجہ ذیل تعاملات کے سلسلے میں آخری محاصل (Z) کی نشاندہی کیجئے۔



Options :



Question Number : 141 Question Id : 3838233821 Question Type : MCQ Option Shuffling : No  
 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In bcc lattice containing X and Y type of atoms, X type of atoms are present at the corners and Y type of atoms are present at the centers. In its unit cell, if three atoms are missing in the corners, the formula of the compound is

bcc قلمی جالی X اور Y قسم کے جوہروں پر مشتمل ہوتی ہے۔ X قسم کے جوہر کونوں پر موجود ہوتے ہیں اور Y قسم کے جوہر مرکز میں

موجود ہوتے ہیں۔ ان کے اکائی خانے میں اگر تین جوہر کونوں سے غائب ہوں۔ تب مرکب کا ضابطہ کیا ہوگا۔

Options :

1. ✓  $X_5 Y_8$

2. ✗  $X_8 Y_5$

3. ✗  $X_3 Y_5$

4. ✗  $X_5 Y_3$

Question Number : 142 Question Id : 3838233822 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

At 300 K, the vapour pressure of toluene and benzene are 3.63 kPa and 9.7 kPa respectively. What is the composition of vapour in equilibrium with the solution containing 0.4 mole fraction of toluene?

(Assume the solution is ideal)

300 K پر ٹالوین اور بینزن کا بخاری دباؤ بالترتیب 3.63 kPa اور 9.7 kPa ہے۔ محلول میں ٹالوین کی سلمی کسر 0.4 ہے۔

وہ بخارات کے ساتھ تعادلی حالت میں ہو تو اس کی بخاری پیت معلوم کرو؟ (فرض کرو کہ محلول مثالی ہے)

Options :

1. ✗ 0.40

2. ✘ 0.60

3. ✘ 0.80

4. ✔ 0.20

Question Number : 143 Question Id : 3838233823 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

0.592 g of copper is deposited in 60 minutes by passing 0.5 amperes current through a solution of copper (II) sulphate. The electro chemical equivalent of copper (II) (in  $\text{g C}^{-1}$ ) is  
( $F = 96500 \text{ C mol}^{-1}$ )

کاپر (II) سلفیٹ کے محلول میں 0.5 امپیر برقی رو کو 60 منٹ تک گزرنے پر 0.592 گرام کاپر جمع ہوتا ہے۔  
کاپر (II) کا برقی کیمیائی معادل ( $\text{g C}^{-1}$  میں)  
( $F = 96500 \text{ C mol}^{-1}$ )

Options :

1. ✘  $3.3 \times 10^{-3}$

2. ✔  $3.3 \times 10^{-4}$

3. ✘  $6.6 \times 10^{-3}$

4. ✘  $6.6 \times 10^{-4}$

Question Number : 144 Question Id : 3838233824 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For the gaseous reaction,  $N_2O_5 \rightarrow 2NO_2 + \frac{1}{2}O_2$  the rate can be expressed as

گیسی تعامل  $N_2O_5 \rightarrow 2NO_2 + \frac{1}{2}O_2$  کیلئے، تعامل کی شرح کو ظاہر کیا جاتا ہے۔

$$-\frac{d[N_2O_5]}{dt} = K_1[N_2O_5]$$

$$+\frac{d[NO_2]}{dt} = K_2[N_2O_5]$$

$$+\frac{d[O_2]}{dt} = K_3[N_2O_5]$$

The correct relation between  $K_1$ ,  $K_2$  and  $K_3$  is

$K_3$  اور  $K_2$ ،  $K_1$  کے مابین موزوں رشتہ

Options :

1. ✘  $K_1 = 2K_2 = 4K_3$

2. ✔  $2K_1 = K_2 = 4K_3$

3. ✘  $2K_1 = 3K_2 = 4K_3$

4. ✘  $4K_1 = 2K_2 = K_3$

Question Number : 145 Question Id : 3838233825 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Match the following

مندرجہ ذیل کی جوڑیاں بنائیے۔

List – I (I - فہرست) Industrial process صنعتی عمل		List – II (II - فہرست) Catalyst used استعمال شدہ تھمائی عامل	
A	Ostwald's process آسٹوالڈ کا طریقہ	I	CuCl <sub>2</sub>
B	Haber's process ہابر کا طریقہ	II	Zeolites زیولائٹ
C	Deacon's process ڈیکان کا قاعدہ	III	Pt gauze پت گج
D	Cracking of hydrocarbons ہائیڈروجن کا ٹوٹنا	IV	Fe

Correct answer is

صحیح جواب ہے

Options :

- ✘ A – II, B – I, C – IV, D – III
- ✘ A – IV, B – I, C – II, D – III
- ✘ A – III, B – IV, C – II, D – I
- ✔ A – III, B – IV, C – I, D – II

Question Number : 146 Question Id : 3838233826 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Copper matte is a mixture of

غیر خالص تانبہ (کاپرمائی) ان کا آمیزہ ہے۔

Options :

Oxides of Cu and Fe

1. ✘ Cu اور Fe کے آکسائیڈس

Carbonates of Cu and Fe

2. ✘ Cu اور Fe کے کاربونیٹس

Sulphides of Cu and Fe

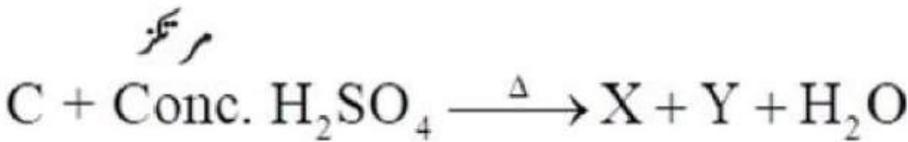
3. ✔ Cu اور Fe کے سلفائیڈس

Silicates of Cu and Fe

4. ✘ Cu اور Fe کے سلیکیٹس

Question Number : 147 Question Id : 3838233827 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0



X and Y in the above reaction are

اوپر کے تعامل میں X اور Y ہیں۔

Options :

1. ✘ CO, SO<sub>3</sub>

2. ✓ CO<sub>2</sub>, SO<sub>2</sub>

3. ✗ CO, SO<sub>2</sub>

4. ✗ C<sub>3</sub>O<sub>2</sub>, SO<sub>2</sub>

Question Number : 148 Question Id : 3838233828 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which among the following oxoacids of phosphorous will have P–O–P bonds?

مندرجہ ذیل میں فاسفورس کے کون سے آکسوترشہ میں P–O–P بند موجود ہوتا ہے۔

- I. H<sub>4</sub>P<sub>2</sub>O<sub>5</sub>
- II. H<sub>4</sub>P<sub>2</sub>O<sub>6</sub>
- III. H<sub>4</sub>P<sub>2</sub>O<sub>7</sub>
- IV. (HPO<sub>3</sub>)<sub>3</sub>

Note: For this question, discrepancy is found in question/answer. Full Marks is being awarded to all candidates.

Options :

1. III & IV
2. I & II
3. I & III

4. II & IV

Question Number : 149 Question Id : 3838233829 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The bond angles  $\overset{\wedge}{\text{H}}-\overset{\wedge}{\text{O}}-\overset{\wedge}{\text{N}}$  and  $\overset{\wedge}{\text{O}}-\overset{\wedge}{\text{N}}-\overset{\wedge}{\text{O}}$  in the planar structure of nitric acid molecule are respectively

نائٹریک تریشہ کی مستوی ساخت میں  $\overset{\wedge}{\text{H}}-\overset{\wedge}{\text{O}}-\overset{\wedge}{\text{N}}$  اور  $\overset{\wedge}{\text{O}}-\overset{\wedge}{\text{N}}-\overset{\wedge}{\text{O}}$  میں بند کا زاویہ بالترتیب

Options :

1. ✘  $130^\circ, 102^\circ$

2. ✔  $102^\circ, 130^\circ$

3. ✘  $134^\circ, 100^\circ$

4. ✘  $100^\circ, 134^\circ$

Question Number : 150 Question Id : 3838233830 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Observe the following f-block elements

Eu (Z = 63) ; Pu (Z = 94) ; Cf (Z = 98) ; Sm (Z = 62) ; Gd (Z = 64) ; Cm (Z = 96)

How many of the above have half-filled f-orbitals in their ground state?

مندرجہ ذیل میں f- بلاک عناصر کا مشاہدہ کیجئے۔

Eu (Z = 63) ; Pu (Z = 94) ; Cf (Z = 98) ; Sm (Z = 62) ; Gd (Z = 64) ; Cm (Z = 96)

اوپر دیئے گئے کتنے عناصر سکونی حالت میں نصف بھرے ہوئے f- آر۔بٹل رکھتے ہیں۔

Options :

1. ✓ 3

2. ✗ 4

3. ✗ 2

4. ✗ 5

Question Number : 151 Question Id : 3838233831 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

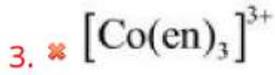
Which one of the following complex ions has geometrical isomers?

مندرجہ ذیل میں کونسا پیچیدہ رواں ہندسی ہم ترکیبی رکھتا ہے۔

Options :

1. ✓  $[\text{Co}(\text{Cl})_2(\text{en})_2]^+$

2. ✗  $[\text{Cr}(\text{NH}_3)_4(\text{en})]^{3+}$



Question Number : 152 Question Id : 3838233832 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which one of the following is not an example of condensation polymer?

مندرجہ ذیل میں کونسی تکثیفی ہمہ سالمے کی مثال نہیں ہے۔

Options :

Terylene

1. ✘ ٹیریلین

Nylon 6,6

2. ✘ نائیلاں 6,6

Bakelite

3. ✘ بیک لائٹ

Polystyrene

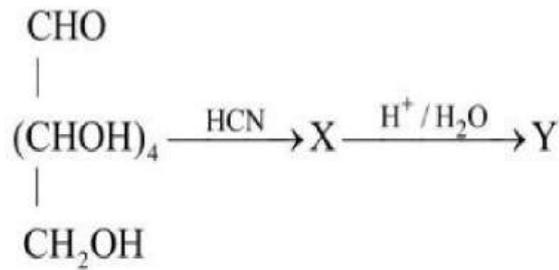
4. ✔ پالی اسٹائرن

Question Number : 153 Question Id : 3838233833 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What is the IUPAC name of the product Y in the given reaction sequence?

دیئے گئے تعاملی سلسلے میں محصول Y کا IUPAC نام کیا ہے؟



Options :

2,3,4,5,6,7 – hexahydroxyheptanoic acid

1. ✓ 2,3,4,5,6,7 – ہیکسا ہائیڈراکسی ہپٹانوئک ترشہ

2,3,4,5,6 – pentahydroxyhexanoic acid

2. ✘ 2,3,4,5,6 – پینٹا ہائیڈراکسی ہیکسانوئک ترشہ

3,4,5 – trihydroxyheptanoic acid

3. ✘ 3,4,5 – ٹرائی ہائیڈراکسی ہپٹانوئک ترشہ

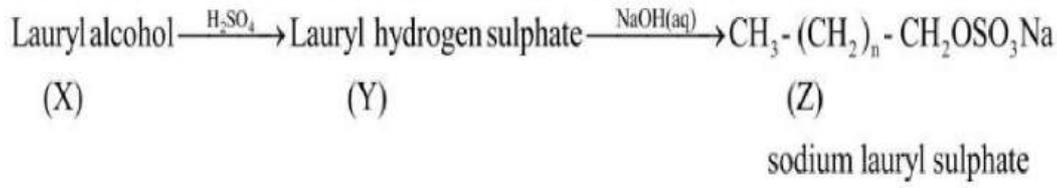
3,4,5 – trihydroxyhexanoic acid

4. ✘ 3,4,5 – ٹرائی ہائیڈراکسی ہیکسانوئک ترشہ

Question Number : 154 Question Id : 3838233834 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What is the value of 'n' in 'Z' of the following sequence?



ذیل کے تعاقبی سلسلے کے 'Z' میں 'n' کی قدر کیا ہے؟



Options :

1. ✓ 10
2. ✗ 12
3. ✗ 16
4. ✗ 14

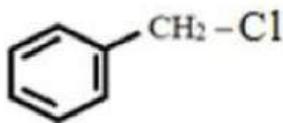
Question Number : 155 Question Id : 3838233835 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

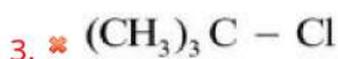
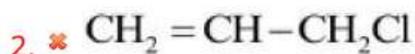
The organic halide, which does not undergo hydrolysis by  $S_N1$  mechanism is

$S_N1$  میکانیت کے ذریعہ کس نامیاتی ہالائیڈ میں آب پاشیدگی کا عمل واقع نہیں ہوتا۔

Options :



1. ✗

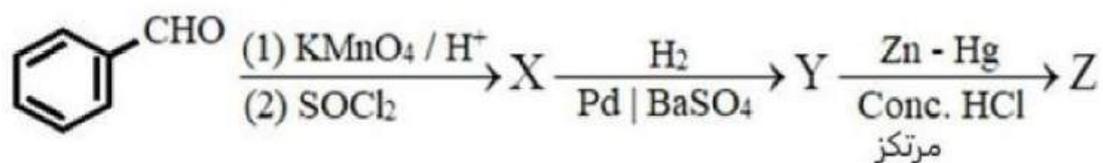


Question Number : 156 Question Id : 3838233836 Question Type : MCQ Option Shuffling : No  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

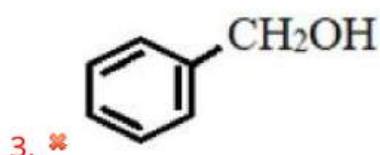
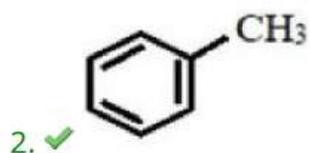
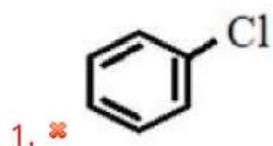
Correct Marks : 1 Wrong Marks : 0

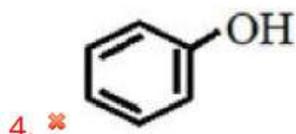
What is 'Z' in the given sequence of reactions?

دیئے گئے تعاملی سلسلے میں 'Z' کیا ہے؟



Options :



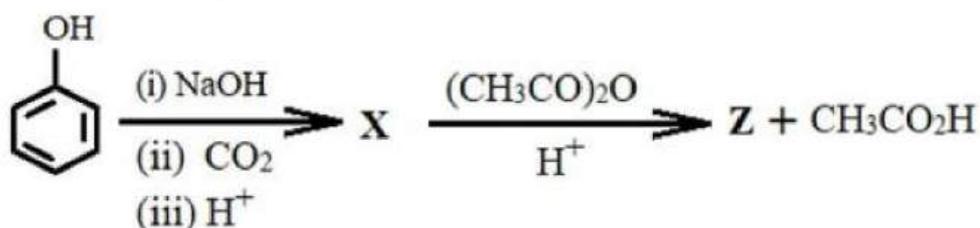


Question Number : 157 Question Id : 3838233837 Question Type : MCQ Option Shuffling : No  
 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
 : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What is the % of carbon in the product 'Z' formed in the reaction?

تفاعل میں تیار ہونے والے محاصل 'Z' میں کاربن کا فیصد (%) کیا ہے؟



Options :

1. ✖ 40

2. ✖ 50

3. ✖ 70

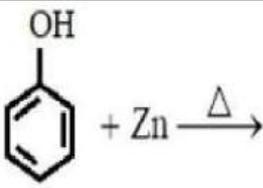
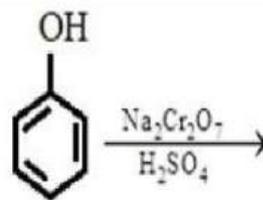
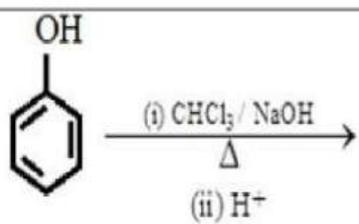
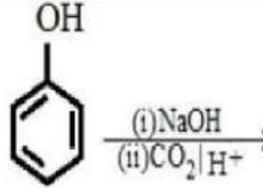
4. ✔ 60

Question Number : 158 Question Id : 3838233838 Question Type : MCQ Option Shuffling : No  
 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
 : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Match the following

مندرجہ ذیل کی جوڑیاں بنائیے۔

List – I (Reactants) (مفاعلات) – I فہرست		List – II (Product) (محاصلات) – II فہرست	
A	 $\text{C}_6\text{H}_5\text{OH} + \text{Zn} \xrightarrow{\Delta}$	I	Benzoquinone بنزو کوئنون
B	 $\text{C}_6\text{H}_5\text{OH} \xrightarrow[\text{H}_2\text{SO}_4]{\text{Na}_2\text{Cr}_2\text{O}_7}$	II	Benzene بنزین
C	 $\text{C}_6\text{H}_5\text{OH} \xrightarrow[\Delta]{\text{(i) CHCl}_3 / \text{NaOH}}$ $\xrightarrow{\text{(ii) H}^+}$	III	Salicylic acid سالکک ترش
D	 $\text{C}_6\text{H}_5\text{OH} \xrightarrow{\text{(i) NaOH}}$ $\xrightarrow{\text{(ii) CO}_2 / \text{H}^+}$	IV	Salicylaldehyde سیاسیال ڈیہائیڈ

Correct answer is

صحیح جواب ہے

Options :

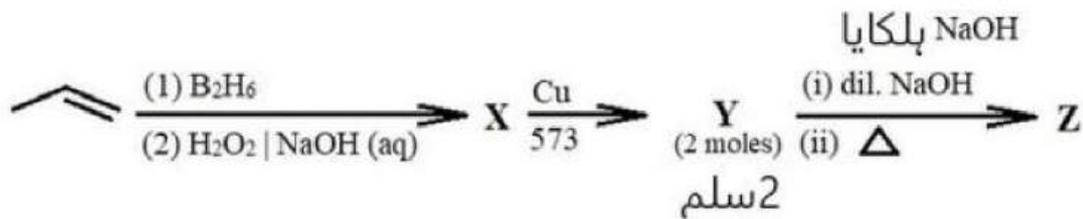
- ✓ A – II; B – I; C – IV; D – III
- ✗ A – II; B – III; C – I; D – IV
- ✗ A – III; B – II; C – IV; D – I
- ✗ A – III; B – IV; C – I; D – II

Question Number : 159 Question Id : 3838233839 Question Type : MCQ Option Shuffling : No  
 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

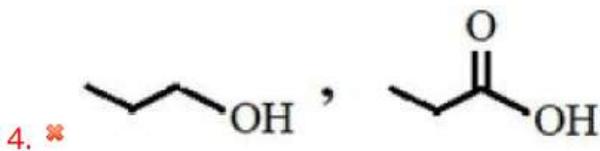
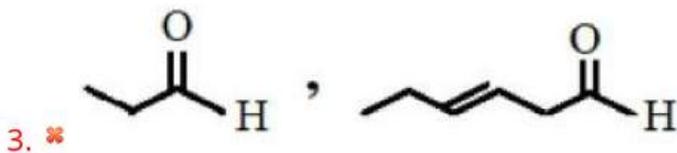
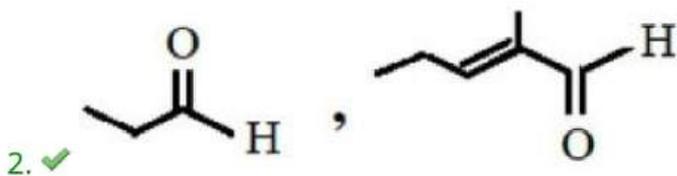
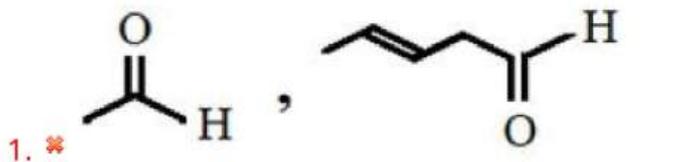
Correct Marks : 1 Wrong Marks : 0

What are Y and Z respectively in the given reaction sequence?

دیئے گئے تعاملی سلسلے میں Y اور Z کیا ہیں؟



Options :

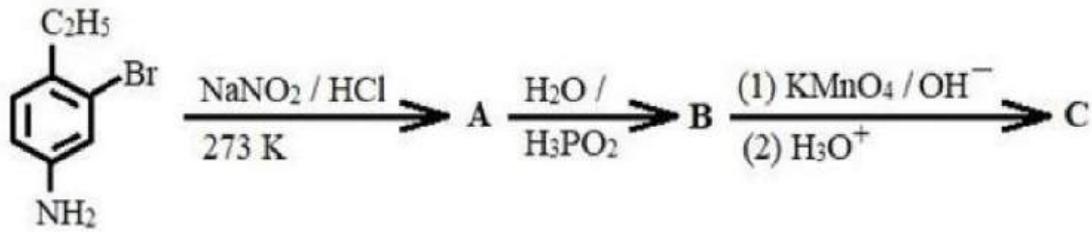


Question Number : 160 Question Id : 3838233840 Question Type : MCQ Option Shuffling : No  
 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What is 'C' in the given sequence of reactions?

دیئے گئے تعاملی سلسلے میں 'C' کیا ہے؟



Options :

