

# 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 14th May 2023 Shift 2
<b>Subject Name :</b>	Engineering URDU
<b>Creation Date :</b>	2023-05-14 23:29:15
<b>Duration :</b>	180
<b>Total Marks :</b>	160
<b>Display Marks:</b>	No
<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
<b>Show Reports :</b>	No
<b>Show Progress Bar :</b>	No

## Engineering Urdu

Group Number :	1
Group Id :	28393637
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 :	283936127
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 :	283936127
Question Shuffling Allowed :	Yes

Is Section Default? :

null

Question Number : 1 Question Id : 2839365761 Question Type : MCQ Option Shuffling : Yes  
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

Let  $f : \mathbb{R} \rightarrow \mathbb{R}$  be a function defined by  $f(x) = \begin{cases} x^2 - 4x + 3, & \text{if } x < 2 \\ x - 3, & \text{if } x \geq 2 \end{cases}$

Then the number of real numbers  $x$  for which  $f(x) = 8$  is

$$f(x) = 8 \text{ ہو تب } f(x) = \begin{cases} x^2 - 4x + 3, & x < 2 \\ x - 3, & x \geq 2 \end{cases} \text{ اگر } f : \mathbb{R} \rightarrow \mathbb{R} \text{ ایک تفاعل کی تعریف}$$

ہونے والی حقیقی اعداد میں  $x$  کی عدد

Options :

28393623041. ✖ 1

28393623042. ✔ 2

28393623043. ✖ 3

28393623044. ✖ 4

Question Number : 2 Question Id : 2839365762 Question Type : MCQ Option Shuffling : Yes  
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  $f(x)$  and  $g(x)$  are two real valued functions such that  $f(x) = 3x - 2$  and  $g(x) = x^2 + 2$  then  $[(gof) + (fog)](x) =$

اگر  $f(x)$  اور  $g(x)$  دو حقیقی تفاعلات  $f(x) = 3x - 2$  اور  $g(x) = x^2 + 2$  ہو تو تب

$$[(gof) + (fog)](x) =$$

Options :

28393623045. ✖  $2g(x) + 2f(x)$

28393623046. ✔  $12g(x) - 4f(x) - 22$

28393623047. ✖  $3g(x) + f(x) - 2$

28393623048. ✖  $2f(x) + 4g(x) - 32$

Question Number : 3 Question Id : 2839365763 Question Type : MCQ Option Shuffling : Yes  
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 real valued function defined by

$$f(x) = \frac{ax^{10} + bx^8 + cx^6 + dx^4 + ex^2 + 12x + 15}{x} \quad (x \neq 0) \text{ and } f(4) = -4, \text{ then } f(-4) =$$

اگر  $f(x)$  ایک حقیقی تفاعل ہو  $(x \neq 0)$  سے تعریف کی گئی ہے اور  $f(x) = \frac{ax^{10} + bx^8 + cx^6 + dx^4 + ex^2 + 12x + 15}{x}$

$$f(-4) = \text{ ہو تو تب } f(4) = -4$$

Options :

28393623049. ✔ 28

28393623050. ✖ 39

28393623051. ✖ 4

28393623052. ✖ 24

Question Number : 4 Question Id : 2839365764 Question Type : MCQ Option Shuffling : Yes  
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  $X_{4 \times 3}$ ,  $Y_{4 \times 3}$  and  $P_{2 \times 3}$  are the matrices then the order of the matrix  $\left[ P(X^T Y)^{-1} P^T \right]^T$   
is

اگر  $X_{4 \times 3}$ ,  $Y_{4 \times 3}$  اور  $P_{2 \times 3}$  ماتریسوں ہوں تو تب ماتریس  $\left[ P(X^T Y)^{-1} P^T \right]^T$  کا رتبہ

Options :

28393623053. ✖  $4 \times 3$

28393623054. ✖  $3 \times 4$

28393623055. ✖  $3 \times 3$

28393623056. ✔  $2 \times 2$

Question Number : 5 Question Id : 2839365765 Question Type : MCQ Option Shuffling : Yes  
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  $A = \begin{bmatrix} 1 & 2 \\ 3 & 5 \end{bmatrix}$  and  $\alpha, \beta \in \mathbb{R}$  are such that  $\alpha A^2 - \beta A = 2I$ , then  $\alpha^2 + \beta =$

$$\alpha^2 + \beta = \text{?} \because \alpha A^2 - \beta A = 2I \quad \alpha, \beta \in \mathbb{R} \quad A = \begin{bmatrix} 1 & 2 \\ 3 & 5 \end{bmatrix}$$

Options :

28393623057. ✖ -8

28393623058. ✔ 16

28393623059. ✖ 12

28393623060. ✖ 20

Question Number : 6 Question Id : 2839365766 Question Type : MCQ Option Shuffling : Yes  
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  $\begin{vmatrix} (1+\alpha)^2 & (1+2\alpha)^2 & (1+3\alpha)^2 \\ (2+\alpha)^2 & (2+2\alpha)^2 & (2+3\alpha)^2 \\ (3+\alpha)^2 & (3+2\alpha)^2 & (3+3\alpha)^2 \end{vmatrix} = k$ , and  $\alpha = -2$  then  $k =$

$$k = \text{?} \because \alpha = -2 \quad \begin{vmatrix} (1+\alpha)^2 & (1+2\alpha)^2 & (1+3\alpha)^2 \\ (2+\alpha)^2 & (2+2\alpha)^2 & (2+3\alpha)^2 \\ (3+\alpha)^2 & (3+2\alpha)^2 & (3+3\alpha)^2 \end{vmatrix} = k$$

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

# all candidates.

## Options :

28393623061. 0

28393623062. -24

28393623063. 24

28393623064. 66

**Question Number : 7 Question Id : 2839365767 Question Type : MCQ Option Shuffling : Yes 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 system of equations  $x + y + z = 5$ ,  $x + 2y + 2z = 6$  and  $x + 3y + \lambda z = \mu$  ( $\lambda, \mu \in \mathbb{R}$ ) is solvable by Matrix Inversion Method, then

مساتوتوں کے نظام کو ماتریس معکوس طریقے سے  $x + 3y + \lambda z = \mu$  ( $\lambda, \mu \in \mathbb{R}$ ) اور  $x + 2y + 2z = 6$  '  $x + y + z = 5$  حل کرے

## Options :

28393623065. ✓  $\lambda \neq 3, \mu \in \mathbb{R}$

28393623066. ✗  $\lambda = 3, \mu = 0$

28393623067. ✗  $\lambda \neq 3, \mu \neq 5$

28393623068. ✗  $\lambda = 3, \mu \in \mathbb{R}$

Question Number : 8 Question Id : 2839365768 Question Type : MCQ Option Shuffling : Yes  
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  $x = a + b$ ,  $y = a\alpha + b\beta$ ,  $z = a\beta + b\alpha$  and  $\alpha, \beta$  are the complex cube roots of unity,

then  $x^3 + y^3 + z^3 =$

$$x^3 + y^3 + z^3 = \text{ایک اکاؤن کا جزو راٹھکب ہو تب } \alpha, \beta \text{ اور } z = a\beta + b\alpha 'y = a\alpha + b\beta 'x = a + b \text{ اگر}$$

Options :

28393623069. ✘  $a^3 + b^3$

28393623070. ✔  $3(a^3 + b^3)$

28393623071. ✘  $a^3 - b^3$

28393623072. ✘  $3(a^3 - b^3)$

Question Number : 9 Question Id : 2839365769 Question Type : MCQ Option Shuffling : Yes  
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  $Z = \frac{3 + 2i \cos \theta}{1 - 2i \sin \theta}$  is a purely imaginary number, then  $\sin^2 \theta + \cos^2 3\theta =$

$$\sin^2 \theta + \cos^2 3\theta = \text{ایک خالص خیال عدد ہو تب } Z = \frac{3 + 2i \cos \theta}{1 - 2i \sin \theta} \text{ اگر}$$

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



# all candidates.

Options :

28393623073.  $\frac{3}{4}$

28393623074.  $\frac{7}{4}$

28393623075. 1

28393623076.  $\frac{5}{4}$

Question Number : 10 Question Id : 2839365770 Question Type : MCQ Option Shuffling : Yes  
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  $z = x + iy$  is a complex number such that  $z\bar{z}^3 + \bar{z}z^3 = 350$  and  $x, y$  are integers, then  $|z| =$

$$|z| = \text{ایک مثبت عدد اور } z = x + iy \text{ ہو اگر } z\bar{z}^3 + \bar{z}z^3 = 350 \text{ صحیح عدد ہو تب } y, x$$

Options :

28393623077. ✖  $\sqrt{41}$

28393623078. ✔ 5

28393623079. ✖ 25

28393623080. ✖  $\sqrt{13}$

Question Number : 11 Question Id : 2839365771 Question Type : MCQ Option Shuffling : Yes  
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  $\alpha, \beta$  are the roots of the equation  $x^2 + x + 1 = 0$ , then

$$(\alpha + \beta)^2 + (\alpha^2 + \beta^2)^2 + (\alpha^3 + \beta^3)^2 + \dots + (\alpha^{12} + \beta^{12})^2 =$$

اگر مساوات  $x^2 + x + 1 = 0$  کے ریٹے  $\alpha, \beta$  ہوں تو

$$(\alpha + \beta)^2 + (\alpha^2 + \beta^2)^2 + (\alpha^3 + \beta^3)^2 + \dots + (\alpha^{12} + \beta^{12})^2 =$$

Options :

28393623081. ✖ 48

28393623082. ✖ 12

28393623083. ✔ 24

28393623084. ✖ 36

Question Number : 12 Question Id : 2839365772 Question Type : MCQ Option Shuffling : Yes  
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 least positive integral value of  $n$  such that  $\left[ \frac{1 + \sin \frac{2\pi}{9} + i \cos \frac{2\pi}{9}}{1 + \sin \frac{2\pi}{9} - i \cos \frac{2\pi}{9}} \right]^n = 1$  is

ہو تب  $n$  کی اقل ترین مثبت عدد کی قدر  $\left[ \frac{1 + \sin \frac{2\pi}{9} + i \cos \frac{2\pi}{9}}{1 + \sin \frac{2\pi}{9} - i \cos \frac{2\pi}{9}} \right]^n = 1$

Options :

28393623085. ✖ 9

28393623086. ✖ 18

28393623087. ✔ 36

28393623088. ✖ 72

Question Number : 13 Question Id : 2839365773 Question Type : MCQ Option Shuffling : Yes  
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  $\alpha, \beta$  are the roots of  $x^2 + ax + 2 = 0$  and  $\frac{1}{\alpha}, \frac{1}{\beta}$  are the roots of  $x^2 - bx + c = 0$ , then

$$\left( \alpha + \frac{1}{\beta} \right) \left( \beta + \frac{1}{\alpha} \right) \left( \alpha - \frac{1}{\alpha} \right) \left( \beta - \frac{1}{\beta} \right) =$$

ہو تب  $\frac{1}{\beta}$  اور  $\frac{1}{\alpha}$  کے ریشے  $x^2 - bx + c = 0$  اور  $\alpha, \beta$  کے ریشے  $x^2 + ax + 2 = 0$  کے ریشے

$$\left( \alpha + \frac{1}{\beta} \right) \left( \beta + \frac{1}{\alpha} \right) \left( \alpha - \frac{1}{\alpha} \right) \left( \beta - \frac{1}{\beta} \right) =$$

Options :

28393623089. ✓  $\frac{9}{4}(9 - a^2)$

28393623090. ✗  $\frac{9}{4}(9 + a^2)$

28393623091. ✗  $\frac{9}{4}(9 - b^2)$

28393623092. ✗  $\frac{9}{4}(9 + b^2)$

Question Number : 14 Question Id : 2839365774 Question Type : MCQ Option Shuffling : Yes  
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 real values of  $x$  satisfying the equation  $(x^2 - 7x + 11)^{x^2 - 6x - 7} = 1$  is

$$(x^2 - 7x + 11)^{x^2 - 6x - 7} = 1$$

مسوات کو مطمئن کرنا ہو تب  $x$  کے تمام حقیقی قدروں کا مجموعہ

Options :

28393623093. ✗ 14

28393623094. ✗ 20

28393623095. ✗ 13

28393623096. ✓ 16

Question Number : 15 Question Id : 2839365775 Question Type : MCQ Option Shuffling : Yes  
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 polynomial  $P(x)$  given by  $P(x) = 2x^4 + ax^3 + bx^2 + cx + d$  is such that  $P(1) = 4$ ,  $P(2) = 7$ ,  
 $P(3) = 12$  and  $P(4) = 19$ , then  $P(5) =$

$P(5) =$  اگر  $P(x) = 2x^4 + ax^3 + bx^2 + cx + d$  ہے اور  $P(1) = 4$ ،  $P(2) = 7$ ،  $P(3) = 12$ ،  $P(4) = 19$  ہے تو  $P(5) =$

Options :

28393623097. ✖ 28

28393623098. ✔ 76

28393623099. ✖ 26

28393623100. ✖ 72

Question Number : 16 Question Id : 2839365776 Question Type : MCQ Option Shuffling : Yes  
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 roots of the equation  $kx^3 - 18x^2 - 36x + 8 = 0$  are in harmonic progression, then  $k =$

اگر  $kx^3 - 18x^2 - 36x + 8 = 0$  مساوات کے ریشے ہارمونک ترقی میں ہوں تو  $k =$

Options :

28393623101. ✖ 64

28393623102. ✖ 45

28393623103.

28393623104. ✖ 27

Question Number : 17 Question Id : 2839365777 Question Type : MCQ Option Shuffling : Yes  
 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  $x^3 + x^2 + x + 1 = 0$  then match the items of List I  
 with those of List II

اگر  $\alpha, \beta, \gamma$  مساوات  $x^3 + x^2 + x + 1 = 0$  کے ریٹھے ہوتے ہیں تو I میں کے اشیاء کو فہرست II میں کے اشیاء کو جوڑئے۔

List I  
 (فہرست I)

List II  
 (فہرست II)

(i)  $\frac{1}{\alpha} + \frac{1}{\beta} + \frac{1}{\gamma}$

a) -1

b) -4

(ii)  $\alpha^3 + \beta^3 + \gamma^3$

c) 1

(iii)  $\alpha^4 + \beta^4 + \gamma^4$

d) 3

(iv)  $(\alpha - \beta)^2 + (\beta - \gamma)^2 + (\gamma - \alpha)^2$

e) 0

Then the correct match is

تب اس کو جوڑئے

Options :

28393623105. ✓ (i) → a, (ii) → a, (iii) → d, (iv) → b

28393623106. ✖ (i) → c, (ii) → a, (iii) → e, (iv) → b

28393623107. ✖ (i) → a, (ii) → c, (iii) → d, (iv) → b

28393623108. ✖ (i) → c, (ii) → a, (iii) → b, (iv) → e

Question Number : 18 Question Id : 2839365778 Question Type : MCQ Option Shuffling : Yes  
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 odd numbers greater than 6,00,000 that can be formed by using the digits  
3,6,7,8,9,0 without repetition is

ہندسوں 0'9'8'7'6'3 کو بغیر تکرار کے استعمال کرتے ہوئے بننے والے 6,00,000 سے اعظیم طاق عددوں کا عدد

Options :

28393623109. ✖ 480

28393623110. ✔ 240

28393623111. ✖ 288

28393623112. ✖ 500

Question Number : 19 Question Id : 2839365779 Question Type : MCQ Option Shuffling : Yes  
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 men and 4 women can be seated around a table so that a particular  
man and a particular woman never sit adjacent to each other is

ایک خالص طور پر مرد اور ایک خالص عورت ہمیشہ بازو بازو نہ ہو 6 مرد اور چار عورتوں کو ایک میز کے اطراف ترتیب دینے  
کے طریقوں کی تعداد

Options :

28393623113. ✖ 9!

28393623114. ✔ 7 × 8!

28393623115. ✖ 8 × 8!

28393623116. ✖ 6 × 7!

Question Number : 20 Question Id : 2839365780 Question Type : MCQ Option Shuffling : Yes  
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

There are three sections in a question paper, each section containing 4 questions. If a candidate has to answer only 5 questions from this paper without leaving any section, then the number of ways in which a candidate can make the choice of questions is

ایک سوالی پرچہ تین سیکشنوں میں ہر سیکشن میں 4 سوالات ہیں اس میں سے کوئی سیکشن کو چھوڑے بغیر ایک شخص 5 سوالات ہی کے جواب لکھنا ہوتا، وہ شخص سوال کو کتنے طریقوں سے ترتیب دیا جاتا ہے۔

Options :

28393623117. ✔ 624

28393623118. ✖ 704

28393623119. ✖ 384

28393623120. ✖ 432



Question Number : 21 Question Id : 2839365781 Question Type : MCQ Option Shuffling : Yes  
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 term independent of  $x$  in the expansion of  $(1-3x+2x^3)\left(\frac{3x^2}{2}-\frac{1}{3x}\right)^9$  is

$$\text{کے پھیلاؤ میں } x \text{ کو خارج کیا جائے۔} \quad (1-3x+2x^3)\left(\frac{3x^2}{2}-\frac{1}{3x}\right)^9$$

Options :

28393623121. ✘  $\frac{7}{18}$

28393623122. ✘  $\frac{5}{18}$

28393623123. ✘  $\frac{19}{54}$

28393623124. ✔  $\frac{17}{54}$

Question Number : 22 Question Id : 2839365782 Question Type : MCQ Option Shuffling : Yes  
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  $\sum_{r=0}^{20} {}^{20+r}C_r = \frac{p}{q} {}^{40}C_{20}$  and GCD of  $(p, q) = 1$ , then  $p^2 - q^2 =$

$$p^2 - q^2 = \text{مربعوں کا فرق} \quad (p, q) \text{ کا GCD } = 1 \text{ ہے تو} \quad \sum_{r=0}^{20} {}^{20+r}C_r = \frac{p}{q} {}^{40}C_{20}$$

Options :

28393623125. ✖ 1302

28393623126. ✖ 1220

28393623127. ✔ 1240

28393623128. ✖ 1364

Question Number : 23 Question Id : 2839365783 Question Type : MCQ Option Shuffling : Yes  
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  $x = \frac{2.5}{2!3} + \frac{2.5.7}{3!3^2} + \frac{2.5.7.9}{4!3^3} + \dots$ , then  $x^2 + 8x + 8 =$

$$x^2 + 8x + 8 = \text{ Ans } x = \frac{2.5}{2!3} + \frac{2.5.7}{3!3^2} + \frac{2.5.7.9}{4!3^3} + \dots \text{ Ans}$$

Options :

28393623129. ✖ 108

28393623130. ✖ 54

28393623131. ✔ 100

28393623132. ✖ 144

Question Number : 24 Question Id : 2839365784 Question Type : MCQ Option Shuffling : Yes

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 coefficient of  $x^4$  in the expansion of  $\frac{x}{(x-1)^2(x-2)}$  is  $\frac{m}{n}$  and  $|m|, |n|$  are coprimes,

then  $\sqrt{|m+n|} =$

$$\sqrt{|m+n|} = \text{ہو تب } \frac{m}{n} \text{ کا ضرب } x^4 \text{ کے پھیلاؤ میں } \frac{x}{(x-1)^2(x-2)} \text{ اگر } |m|, |n| \text{ ہم پر طبعی مرکب عدد اور}$$

Options :

28393623133. ✖ 9

28393623134. ✔  $\sqrt{33}$

28393623135. ✖ 7

28393623136. ✖  $6\sqrt{2}$

Question Number : 25 Question Id : 2839365785 Question Type : MCQ Option Shuffling : Yes 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  $\frac{\sin^4 x}{2} + \frac{\cos^4 x}{3} = \frac{1}{5}$ , then  $27 \sec^6 \alpha + 8 \operatorname{cosec}^6 \alpha =$

$$27 \sec^6 \alpha + 8 \operatorname{cosec}^6 \alpha = \text{ہو تب } \frac{\sin^4 x}{2} + \frac{\cos^4 x}{3} = \frac{1}{5} \text{ اگر}$$

Options :

28393623137. ✔ 250

28393623138. ✖ 125

28393623139. ✖ 175

28393623140. ✖ 350

Question Number : 26 Question Id : 2839365786 Question Type : MCQ Option Shuffling : Yes  
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  $\tan \beta = \frac{n \sin \alpha \cos \alpha}{1 - n \cos^2 \alpha}$ , then  $\tan(\alpha + \beta) \cdot \cot \alpha =$

$$\tan(\alpha + \beta) \cdot \cot \alpha \text{ ہے: } \tan \beta = \frac{n \sin \alpha \cos \alpha}{1 - n \cos^2 \alpha}$$

Options :

28393623141. ✔  $\frac{-1}{n-1}$

28393623142. ✖  $n+1$

28393623143. ✖  $1-n$

28393623144. ✖  $\frac{1}{n+1}$

Question Number : 27 Question Id : 2839365787 Question Type : MCQ Option Shuffling : Yes  
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  $\cos A + \cos B + \cos C = 0 = \sin A + \sin B + \sin C$ , then

$$\cos(A - B) + \cos(B - C) + \cos(C - A) =$$

$$\cos A + \cos B + \cos C = 0 = \sin A + \sin B + \sin C$$

$$\cos(A - B) + \cos(B - C) + \cos(C - A) =$$

Options :

28393623145. ✖ 0

28393623146. ✖  $\frac{1}{2}$

28393623147. ✖  $\frac{3}{2}$

28393623148. ✔  $\frac{-3}{2}$

Question Number : 28 Question Id : 2839365788 Question Type : MCQ Option Shuffling : Yes  
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  $\sin x \cdot \cosh y = \cos \theta$  and  $\cos x \cdot \sinh y = \sin \theta$  then  $\sin^2 x + \cosh^2 y =$

$$\sin^2 x + \cosh^2 y = \cos x \cdot \sinh y = \sin \theta \text{ or } \sin x \cdot \cosh y = \cos \theta$$

Options :

28393623149. ✖ 1

28393623150. ✔ 2

28393623151. ✖

$$\frac{3}{2}$$

$$28393623152. \times \frac{1}{2}$$

Question Number : 29 Question Id : 2839365789 Question Type : MCQ Option Shuffling : Yes  
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  $\Delta ABC$ , if  $a, b, c$  are in arithmetic progression and  $A = 2C$ , then  $b:c=$

اگر  $\Delta ABC$  میں  $a, b, c$  حسابی تصاعد میں ہیں اور  $A = 2C$  ہو تو  $b:c=$

Options :

$$28393623153. \times 4:5$$

$$28393623154. \times 2:3$$

$$28393623155. \checkmark 5:4$$

$$28393623156. \times 5:6$$

Question Number : 30 Question Id : 2839365790 Question Type : MCQ Option Shuffling : Yes  
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

Assertion (A): In  $\Delta ABC$ , if  $r = 6$ ,  $r_2 = 36$ ,  $R = 15$  then  $c^2 + a^2 = b^2$

Reason (R): In  $\Delta ABC$ , if  $r : R : r_2 = 1 : 2.5 : 6$  then  $B = 90^\circ$

The correct option among the following is

دعوہ (A):  $\Delta ABC$  میں اگر  $r = 6$  '  $r_2 = 36$  '  $R = 15$  تب  $c^2 + a^2 = b^2$

وجہ (R):  $\Delta ABC$  میں اگر  $r : R : r_2 = 1 : 2.5 : 6$  ہو تو  $B = 90^\circ$

درجہ ذیل میں سے صحیح انتخاب ہے۔

Options :

Both (A) and (R) are true. (R) is a correct explanation of (A)

28393623157. ✓ (A) اور (R) دونوں درست ہیں۔ (A) کے لئے (R) درست وضاحت ہے۔

Both (A) and (R) are true, but (R) is not a correct explanation of (A)

28393623158. ✘ (A) اور (R) دونوں درست ہیں۔ (R) کے لئے (A) درست وضاحت نہیں ہے۔

(A) is true and (R) is false

28393623159. ✘ (A) درست ہے اور (R) غلط ہے

(A) is false and (R) is true

28393623160. ✘ (A) غلط ہے اور (R) درست ہے

Question Number : 31 Question Id : 2839365791 Question Type : MCQ Option Shuffling : Yes  
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  $\bar{a}, \bar{b}, \bar{c}$  are unit vectors such that  $\bar{a}$  is perpendicular to both  $\bar{b}, \bar{c}$  and angle between  $\bar{b}, \bar{c}$  is

$\frac{2\pi}{3}$ , then  $|\bar{a} + 3\bar{b} - 4\bar{c}|^2 =$

$|\bar{a} + 3\bar{b} - 4\bar{c}|^2 =$  ہو تب  $\frac{2\pi}{3}$  سمت کا درمیانی زاویہ  $\bar{b}, \bar{c}$  عمودی ہو اور  $\bar{a}$  کو دونوں کو بھی  $\bar{b}, \bar{c}$  اکائی سمت  $\bar{a}, \bar{b}, \bar{c}$

Options :

28393623161. ✖ 6

28393623162. ✖ 14

28393623163. ✔ 38

28393623164. ✖ 26

Question Number : 32 Question Id : 2839365792 Question Type : MCQ Option Shuffling : Yes  
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

Let  $\vec{a} = 2\vec{i} - \vec{j} + \vec{k}$  be the position vector of a point A. Let  $\vec{b} = \vec{i} + 2\vec{j} - \vec{k}$  and  $\vec{c} = \vec{i} + \vec{j} - 2\vec{k}$  be two vectors and  $\vec{r}$  be a vector passing through the point  $A(\vec{a})$  and parallel to the vector  $\vec{b}$ . If

the projection of  $\vec{r}$  on  $\vec{c}$  is  $\frac{9}{\sqrt{6}}$  then  $|\vec{r}| =$

فرض کرو کہ A ایک نقطہ کا مقام سمت  $\vec{a} = 2\vec{i} - \vec{j} + \vec{k}$  اور  $\vec{b} = \vec{i} + 2\vec{j} - \vec{k}$  اور  $\vec{c} = \vec{i} + \vec{j} - 2\vec{k}$  دو سمتیوں اور  $A(\vec{a})$  نقطہ پر سے گزرتا ہو فرض کیجئے کہ  $\vec{b}$  سمت کو متوازی ہونے والی سمتی  $\vec{r}$  پر  $\vec{c}$  کا پروجیکشن

$$|\vec{r}| = \frac{9}{\sqrt{6}}$$

Options :

28393623165. ✔  $\sqrt{26}$

28393623166. ✖ 5

28393623167. ✖  $\sqrt{5}$



28393623168. ✖  $\sqrt{34}$

Question Number : 33 Question Id : 2839365793 Question Type : MCQ Option Shuffling : Yes  
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 S is the circumcentre, O is the orthocentre and G is the centroid of a triangle ABC, then match the items of the List -I with those of the items of List-II given below.

مثلاً ABC میں S محیطی مرکز O عمودی مرکز G وسطانی مرکز ہو تو حسب ذیل کے فہرست I میں کے اشیاء کو، فہرست II میں کے اشیاء سے جوڑئے۔

List-I (فہرست - I)	List-II (فہرست - II)
i) $\overline{SA} + \overline{SB} + \overline{SC}$	a) $2\overline{OS}$
ii) $\overline{GA} + \overline{GB} + \overline{GC}$	b) $\frac{2}{3}\overline{OS}$
iii) $\overline{OA} + \overline{OB} + \overline{OC}$	c) $\overline{O}$
iv) $\overline{OG}$	d) $\overline{SO}$
	e) $\overline{OS}$

Then the correct match is

تب صحیح جوڑی ہے

Options :

28393623169. ✖  $i \rightarrow c, ii \rightarrow b, iii \rightarrow e, iv \rightarrow a$

28393623170. ✖  $i \rightarrow b, ii \rightarrow c, iii \rightarrow a, iv \rightarrow d$

28393623171. ✖  $i \rightarrow d, ii \rightarrow a, iii \rightarrow c, iv \rightarrow e$

28393623172. ✔  $i \rightarrow d, ii \rightarrow c, iii \rightarrow a, iv \rightarrow b$

Question Number : 34 Question Id : 2839365794 Question Type : MCQ Option Shuffling : Yes  
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

Let  $\vec{a}, \vec{b}, \vec{c}$  be three vectors such that  $\vec{a} \cdot \vec{a} = \vec{b} \cdot \vec{b} = \vec{c} \cdot \vec{c} = 5$  and

$$|\vec{a} + \vec{b} - \vec{c}|^2 + |\vec{b} + \vec{c} - \vec{a}|^2 + |\vec{c} + \vec{a} - \vec{b}|^2 = 50 \text{ then } \vec{a} \cdot \vec{b} + \vec{b} \cdot \vec{c} + \vec{c} \cdot \vec{a} =$$

تین سمتی ہوتے ہیں  $\vec{a}, \vec{b}, \vec{c}$  اور  $|\vec{a} + \vec{b} - \vec{c}|^2 + |\vec{b} + \vec{c} - \vec{a}|^2 + |\vec{c} + \vec{a} - \vec{b}|^2 = 50$  اور  $\vec{a} \cdot \vec{a} = \vec{b} \cdot \vec{b} = \vec{c} \cdot \vec{c} = 5$

$$\vec{a} \cdot \vec{b} + \vec{b} \cdot \vec{c} + \vec{c} \cdot \vec{a} =$$

Options :

28393623173. ✖  $\frac{5}{2}$

28393623174. ✔  $-\frac{5}{2}$

28393623175. ✖ 10

28393623176. ✖ -10

Question Number : 35 Question Id : 2839365795 Question Type : MCQ Option Shuffling : Yes  
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**

Let  $\vec{c}$  be a vector coplanar with the unit vectors  $\vec{a}, \vec{b}$  and let  $\vec{d}$  be the unit vector perpendicular to  $\vec{a}, \vec{b}$  and  $\vec{c}$ . If  $[\vec{abd}]\vec{c} - [\vec{abc}]\vec{d} = \vec{i} + 2\vec{j} + 2\vec{k}$  and the angle between  $\vec{a}$  and  $\vec{b}$  is  $30^\circ$ , then  $|\vec{c}| =$

فرض کرو کہ  $\vec{c}$  سمتی  $\vec{a}, \vec{b}$  کو اکائی مطابق سمت ہے اور فرض کرو کہ  $\vec{d}$  '  $\vec{a}, \vec{b}, \vec{c}$  کو عمودی اکائی سمت ہو

$$|\vec{c}| = \text{تو } 30^\circ \text{ کے درمیانی ضاویہ } \vec{b}'\vec{a} \text{ اور } [\vec{abd}]\vec{c} - [\vec{abc}]\vec{d} = \vec{i} + 2\vec{j} + 2\vec{k}$$

**Options :**

28393623177. ✖ 3

28393623178. ✖  $\frac{3}{2}$

28393623179. ✔ 6

28393623180. ✖ 1

**Question Number : 36 Question Id : 2839365796 Question Type : MCQ Option Shuffling : Yes 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 standard deviation of 100 observations were calculated as 40 and 5.1 respectively. Later on it was found that one of the observations was taken as 50 in the place of 40. If the wrong entry is replaced by the correct one, then the sum of the squares of all the observations is

100 مشاہدوں کے اوسط اور معیاری انحراف بالترتیب 40 اور 5.1 سے ضرب کیا گیا۔ دوبارہ اس میں سے ایک مشاہدہ 40 واں مقام میں

50 کو لینے کا خیال کیا۔ غلط اشیاء کو نکال کر درست اشیاء سے پورہ کیا۔ تمام مشاہدوں کو مربعوں مجموع

**Options :**

28393623181.

✘ 162701

28393623182. ✘ 163501

28393623183. ✘ 162601

28393623184. ✔ 161701

**Question Number : 37 Question Id : 2839365797 Question Type : MCQ Option Shuffling : Yes 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 matrix is chosen at random from the set of all  $3 \times 3$  non zero matrices whose entries are the elements of the set  $\{-1, 0, 1\}$ , then the probability that the matrix is skew symmetric is

ایک  $3 \times 3$  تمام 3 کے عناصروں سے بننے والے تمام  $3 \times 3$  غیر صفر ماتریس کے سٹ سے بلا منصوبہ ایک ماتریس کو منتخب کرنے پر وہ ماتریس

ایک عوجی تشاکل ماتریس ہونے کے لئے اس کا احتمال

**Options :**

28393623185. ✘  $\frac{1}{729}$

28393623186. ✔  $\frac{1}{757}$

28393623187. ✘  $\frac{1}{703}$

28393623188. ✘  $\frac{1}{742}$

Question Number : 38 Question Id : 2839365798 Question Type : MCQ Option Shuffling : Yes  
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 boy throws an unbiased die. Whenever he gets 1 on the die he has a further chance to throw it once again immediately. The probability that the boy gets a score of 7 in this process is

ایک لڑکا ایک پانسہ پھیلتا ہے اس کے پانسہ پر 1 نشان آنے پر دوبارہ پانسہ پھینکنے کا موقع ملتا ہے۔ تب اس سلسلے میں وہ لڑکا 7 نشانات حاصل کرنے کا  
احتمال

Options :

28393623189. ✘  $\frac{1}{5} \left( 1 - \frac{1}{6^5} \right)$

28393623190. ✘  $\frac{1}{30} \left( 1 - \frac{1}{6^4} \right)$

28393623191. ✔  $\frac{1}{30} \left( 1 - \frac{1}{6^5} \right)$

28393623192. ✘  $\frac{1}{5} \left( 1 - \frac{1}{6^4} \right)$

Question Number : 39 Question Id : 2839365799 Question Type : MCQ Option Shuffling : Yes  
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

There are 10 coins in a box out of which 8 are normal and the remaining are with heads on both sides.

A coin is chosen at random from the box and tossed 6 times. If it shows heads each time, then the

probability that the selected coin has head on both sides is

ایک صندوق میں 10 سکوں میں 8 حسب معمول ہیں اور بقیہ دونوں جانب چھت ہیں اس صندوق سے بلا منصوبہ ایک سکے کو نکال کر اس کو 6

مرتبہ اچھالا جائے ہر بار وہ چھت ہی آتا ہے۔ نکالے گئے وہ سکے کے دونوں جانب چھت کو حاصل کرنے کا احتمال

Options :

28393623193. ✓  $\frac{16}{17}$

28393623194. ✗  $\frac{32}{41}$

28393623195. ✗  $\frac{8}{9}$

28393623196. ✗  $\frac{12}{13}$

Question Number : 40 Question Id : 2839365800 Question Type : MCQ Option Shuffling : Yes  
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 random variable X has the following distribution.

ایک بلا منصوبہ متغیر X کی ایک احتمالی تقسیم کو حسب ذیل میں دیا گیا ہے۔

$X = x_i$	-2	-1	0	1	2	3
$P(X=x_i)$	0.1	k	0.2	2k	3k	k

Then the variance of this distribution is

ایک بلا منصوبہ X کا تغیر

Options :

28393623197. ✖ 2.64

28393623198. ✖ 2.8

28393623199. ✔ 2.16

28393623200. ✖ 1.86

Question Number : 41 Question Id : 2839365801 Question Type : MCQ Option Shuffling : Yes  
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 line passing through a fixed point  $(-3,4)$  intersects the coordinate axes at  
A and B. If 'O' is the origin and OABC forms a rectangle, then the locus of C is

$(-3,4)$  مقام نقطہ سے گزرنے والی ایک خطہ مستقیم محدود محور کو A اور B پر قطع کرتی ہے 'O' مبداء اور

OABC ایک مستطیل بننے پر C کا طریق

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

Options :

28393623201.  $xy + 3x - 4y = 0$

28393623202.  $xy - 3x + 4y = 0$

28393623203.  $xy - 3x - 4y = 0$

28393623204.  $xy + 3x + 4y = 0$

**Question Number : 42 Question Id : 2839365802 Question Type : MCQ Option Shuffling : Yes 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 origin is shifted to the point P by translation of axes, the equation

$2x^2 + y^2 - 4x + 4y = 0$  is transformed to  $2x^2 + y^2 - 8x + 8y + 18 = 0$ . Then the transformed equation of the straight line  $x + 2y + 2 = 0$  if the origin is shifted to the same point P is

مبدأ کو اور نقطہ P کو محاور کی خطی منتقلی کے ذریعہ  $2x^2 + y^2 - 4x + 4y = 0$  مساوات

$2x^2 + y^2 - 8x + 8y + 18 = 0$  میں تحویل ہو تب مبدأ کو وہی نقطہ P کو  $x + 2y + 2 = 0$  تحویل کرنے پر

خطی مستقیم کی تحویل شدہ مساوات

**Options :**

28393623205. ✘  $x + 2y - 1 = 0$

28393623206. ✘  $x + 2y - 3 = 0$

28393623207. ✘  $x + 2y + 7 = 0$

28393623208. ✔  $x + 2y + 5 = 0$

**Question Number : 43 Question Id : 2839365803 Question Type : MCQ Option Shuffling : Yes 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 Circumcenter of the triangle formed by the points  $A(a,3)$ ,  $B(b,5)$  and  $C(a, b)$  is  $(1,1)$ , then out of all the possible coordinates of  $C$  the sum of the absolute values of the distinct coordinates of  $C$  is

ہونے والے تمام محوروں میں مختلف محوروں کے تمام قدروں کا مجموعہ  
ہوئے  $C(a, b)$  نقطہ سے بننے والے مثلث کا محیطی مرکز  $(1,1)$  ہو تو  $C$  سے حاصل  
 $B(b,5)$ ,  $A(a,3)$

Options :

28393623209. ✖ 8

28393623210. ✔ 9

28393623211. ✖ 12

28393623212. ✖ 4

Question Number : 44 Question Id : 2839365804 Question Type : MCQ Option Shuffling : Yes  
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 lines  $x + y - 1 = 0$ ,  $kx + 2y + 1 = 0$  and  $4x + 2ky + 7 = 0$  are concurrent, then  $k =$

$k =$  خطوط ہم نقطہ خطوط ہو تو تب  $4x + 2ky + 7 = 0$  اور  $kx + 2y + 1 = 0$ ,  $x + y - 1 = 0$

Options :

28393623213. ✖ 2

28393623214. ✖  $\frac{13}{2}$

28393623215. ✓  $\frac{-13}{2}$

28393623216. ✘ -2

Question Number : 45 Question Id : 2839365805 Question Type : MCQ Option Shuffling : Yes  
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  $\alpha, \beta$  ( $\alpha > \beta$ ) are two values of  $k$  such that the equations

$2x + (3 - 2k)y + (2k + 1) = 0$  and  $kx + (k - 1)y - 4 = 0$  represent two perpendicular lines,

then  $\alpha^2 + 2\beta =$

اگر  $\alpha, \beta$  ( $\alpha > \beta$ ) دو قدریں  $k$  کے دو قدریں ہوں تو جب  $kx + (k - 1)y - 4 = 0$  اور  $2x + (3 - 2k)y + (2k + 1) = 0$  مساوات دو

عمودی خطوط کو ظاہر کرتے ہو تو جب  $k$  کے دو قدریں ہوں تب  $\alpha^2 + 2\beta =$

Options :

28393623217. ✘ 1

28393623218. ✘  $\frac{7}{4}$

28393623219. ✘ 7

28393623220. ✓ 10

Question Number : 46 Question Id : 2839365806 Question Type : MCQ Option Shuffling : Yes  
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  $k = \frac{a+b}{ab}$  is a non-zero constant then the point which lies on the straight line  $\frac{x}{a} + \frac{y}{b} = 1$  is

اگر  $k = \frac{a+b}{ab}$  ایک غیر صفری مستقل ہوتی ہے تو  $\frac{x}{a} + \frac{y}{b} = 1$  کا خط مستقیم پر کا نقطہ

Options :

28393623221. ✖ (k, k)

28393623222. ✖  $\left(k, \frac{1}{k}\right)$

28393623223. ✖  $\left(\frac{1}{k}, k\right)$

28393623224. ✔  $\left(\frac{1}{k}, \frac{1}{k}\right)$

Question Number : 47 Question Id : 2839365807 Question Type : MCQ Option Shuffling : Yes

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 point of concurrence of all the chords of the curve  $3x^2 - y^2 - 2x + 4y = 0$  which subtend a right angle at the origin is

منحنی  $3x^2 - y^2 - 2x + 4y = 0$  پر کھینچا گیا کارڈ میں مبداء پر بننے والی عمودی زاویہ کے تمام کارڈ کے ہم نقطہ خطوط

Options :

28393623225. ✖ (1, 2)

28393623226. ✓ (1, -2)

28393623227. ✘ (-1, 2)

28393623228. ✘ (-1, -2)

Question Number : 48 Question Id : 2839365808 Question Type : MCQ Option Shuffling : Yes  
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 of a circle passing through (-6,3) and touching both the coordinate axes is

(-6,3) نقطہ پر سے گزرتا ہو، دو محدود محور کو مس کرنے والی ایک دائرہ کی مساوات

Options :

28393623229. ✘  $x^2 + y^2 + 20x - 20y + 100 = 0$

28393623230. ✘  $x^2 + y^2 + 10x - 10y + 25 = 0$

28393623231. ✓  $x^2 + y^2 + 6x - 6y + 9 = 0$

28393623232. ✘  $x^2 + y^2 - 30x + 30y + 225 = 0$

Question Number : 49 Question Id : 2839365809 Question Type : MCQ Option Shuffling : Yes  
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 (in Sq. units) of the triangle formed by the X-axis, the tangent and the normal drawn to the circle  $x^2 + y^2 = 10x$  at the point (9, 3) is

X - محور اور (9, 3) نقطہ پر  $x^2 + y^2 = 10x$  دائرہ کو کھینچا گیا مماس اور نارمل خطوط سے بننے والا مثلث کا رقبہ (مربع یونٹس)

Options :

28393623233. ✖  $\frac{75}{4}$

28393623234. ✔  $\frac{75}{8}$

28393623235. ✖ 75

28393623236. ✖ 25

Question Number : 50 Question Id : 2839365810 Question Type : MCQ Option Shuffling : Yes  
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 common tangents of the circles  $x^2 + y^2 - 4 = 0$  and  $x^2 + y^2 - 6x - 8y - 24 = 0$  is

$x^2 + y^2 - 4 = 0$  اور  $x^2 + y^2 - 6x - 8y - 24 = 0$  دائروں کا مشترک مماسوں کی تعداد

Options :

28393623237. ✔ 1

28393623238. ✖ 2

28393623239. ✖ 3

28393623240. ✖ 4

Question Number : 51 Question Id : 2839365811 Question Type : MCQ Option Shuffling : Yes  
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 circle whose radius is  $\sqrt{10}$  and which touches the circle  
 $x^2 + y^2 + 2x + 8y - 23 = 0$  externally at the point  $(1, 2)$  is  $x^2 + y^2 + ax + by + c = 0$ , then  
 $|a + b + c| =$

دائرہ  $x^2 + y^2 + 2x + 8y - 23 = 0$  کو اندرونی طور پر  $(1, 2)$  پر مس کرتا ہے،  $\sqrt{10}$  نصف قطر والی دائرہ کی  
مساوات  $x^2 + y^2 + ax + by + c = 0$  ہو تو  $|a + b + c| =$

Options :

28393623241. ✔ 5

28393623242. ✖ 13

28393623243. ✖ 33

28393623244. ✖ 23

Question Number : 52 Question Id : 2839365812 Question Type : MCQ Option Shuffling : Yes  
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 circle 'S' passing through the origin and having its centre on the line  $x - y = 0$  cuts the circle  $x^2 + y^2 - 4x - 6y + 10 = 0$  orthogonally, then the diameter of 'S' is

مبدأ سے گزرتا ہو اور مرکز کو  $x - y = 0$  خط پر 'S' ایک دائرہ  $x^2 + y^2 - 4x - 6y + 10 = 0$  دائرہ کو عموداً

قطع کرتا ہے تب وہ دائرہ 'S' کا قطر

Options :

28393623245. ✖  $\sqrt{2}$

28393623246. ✖ 2

28393623247. ✔  $2\sqrt{2}$

28393623248. ✖ 4

Question Number : 53 Question Id : 2839365813 Question Type : MCQ Option Shuffling : Yes  
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 of the circle passing through the points of intersection of the circles  $x^2 + y^2 + 6x + 4y - 12 = 0$ ,  $x^2 + y^2 - 4x - 6y - 12 = 0$  and having radius  $\sqrt{13}$  is

دائرہوں نقطہ تقاطع سے گزرتا ہو اور نصف قطر  $\sqrt{13}$  ہو تب دائرہ کی مساوات  
اور  $x^2 + y^2 + 6x + 4y - 12 = 0$  اور  $x^2 + y^2 - 4x - 6y - 12 = 0$  دائرہوں نقطہ تقاطع سے گزرتا ہو اور نصف

Options :

28393623249. ✖  $x^2 + y^2 - 2x - 12 = 0$

28393623250. ✖  $x^2 + y^2 - 4x - 6y = 0$

28393623251. ✔  $x^2 + y^2 - 2y - 12 = 0$

28393623252. ✖  $x^2 + y^2 + 6x - 4y = 0$

Question Number : 54 Question Id : 2839365814 Question Type : MCQ Option Shuffling : Yes  
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  $\overline{AB}$  is the focal chord of the parabola  $y^2 = 16x$  and  $A = (1, -4)$ , then the equation of the normal to the parabola at the point B is

مکانی  $y^2 = 16x$  کو  $\overline{AB}$  ایک ماسکہ کا کارڈ اور  $A = (1, -4)$  ہو تو مکانی کو نقطہ B پر نارمل کی مساوات

Options :

28393623253. ✖  $2x + y - 32 = 0$

28393623254. ✔  $2x + y - 48 = 0$

28393623255. ✖  $x - 2y + 16 = 0$

28393623256. ✖  $x + 2y - 48 = 0$

Question Number : 55 Question Id : 2839365815 Question Type : MCQ Option Shuffling : Yes  
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 one of the vertices of an equilateral triangle inscribed in the parabola  $y^2 = 12x$  coincides with the vertex of the parabola, then the area (in sq. units) of that triangle is

اگر ایک مکافی  $y^2 = 12x$  میں اندرونی طور پر ایک مساوی الضلع مثلث کا ایک راسوں میں ایک مکافی کے راس سے موافق ہے تب مثلث کا رقبہ (مربع یونٹس)

Options :

28393623257. ✖  $192\sqrt{3}$

28393623258. ✖  $864\sqrt{3}$

28393623259. ✖  $216\sqrt{3}$

28393623260. ✔  $432\sqrt{3}$

Question Number : 56 Question Id : 2839365816 Question Type : MCQ Option Shuffling : Yes 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 an ellipse with its axes as coordinate axes,  $2a$  and  $2b$  as the lengths of its major and minor axes respectively passes through the points  $(2, 2)$  and  $(3, 1)$ , then  $3a^2 + 5b^2 =$

محدود محاور کے محوروں کو  $2a$  اور  $2b$  کو ترتیب وار اکبر اور اصغر محاور کے طولوں کو رکھنے والا ناقص  $(2,2)$  اور  $(3,1)$  نقاط

$$3a^2 + 5b^2 =$$

Options :

28393623261. ✖ 32

28393623262. ✖ 8

28393623263. ✓ 64

28393623264. ✘ 16

Question Number : 57 Question Id : 2839365817 Question Type : MCQ Option Shuffling : Yes  
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 values of  $c$  such that the line  $y = 4x + c$  touches the ellipse  $\frac{x^2}{4} + \frac{y^2}{1} = 1$  is

ناقص  $\frac{x^2}{4} + \frac{y^2}{1} = 1$  کو  $y = 4x + c$  خط مس کرتا ہے تو تب  $c$  کی قدریں

Options :

28393623265. ✘  $\pm 13$

28393623266. ✘  $\pm 7$

28393623267. ✓  $\pm\sqrt{65}$

28393623268. ✘  $\pm\sqrt{74}$

Question Number : 58 Question Id : 2839365818 Question Type : MCQ Option Shuffling : Yes  
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 line  $2x + \sqrt{6}y = 2$  touches the hyperbola  $x^2 - 2y^2 = 4$ , then the coordinates of the point of contact are

زائد  $x^2 - 2y^2 = 4$  کو  $2x + \sqrt{6}y = 2$  خط مس کرتا ہے تب مماسوں کے محدودات

Options :

28393623269. ✖  $\left(\frac{1}{2}, \frac{1}{\sqrt{6}}\right)$

28393623270. ✔  $(4, -\sqrt{6})$

28393623271. ✖  $(4, \sqrt{6})$

28393623272. ✖  $(-2, \sqrt{6})$

Question Number : 59 Question Id : 2839365819 Question Type : MCQ Option Shuffling : Yes  
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 circumcenter of the triangle formed by the points  $(1, 2, 3)$ ,  $(3, -1, 5)$  and  $(4, 0, -3)$  is  $(\alpha, \beta, \gamma)$ , then  $|\alpha| + |\beta| =$

$|\alpha| + |\beta| =$  ہو تب  $(\alpha, \beta, \gamma)$  مرکز  $(4, 0, -3)$  اور  $(3, -1, 5)$ ,  $(1, 2, 3)$  لے مثاٹ کا محیطی مرکز

Options :

28393623273. ✖  $|\gamma|$

28393623274. ✖  $3|\gamma|$

28393623275. ✔  $4|\gamma|$

28393623276. ✖  $\frac{2}{\sqrt{3}}$

Question Number : 60 Question Id : 2839365820 Question Type : MCQ Option Shuffling : Yes  
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 the acute angle between the two lines whose direction cosines are connected  
by the relations  $l + m + n = 0$  and  $2lm + 2nl - mn = 0$ , then  $\cos \theta =$

کے رشتوں سے تعلق رکھنے والے کو سائین  $2lm + 2nl - mn = 0$  اور  $l + m + n = 0$   
سمت ہو دو خطوطوں کا درمیانی حادہ زاویہ  $\theta$  ہو تو تب  $\cos \theta =$

Options :

28393623277. ✔  $\frac{1}{2}$

28393623278. ✖  $\frac{\sqrt{3}}{2}$

28393623279. ✖  $\frac{5}{6}$

28393623280. ✖  $\frac{3}{5}$

Question Number : 61 Question Id : 2839365821 Question Type : MCQ Option Shuffling : Yes  
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 foot of the perpendicular drawn from the point  $(1, 0, -2)$  to the plane  $\pi$  is  $(2, 0, -1)$  and the equation of the plane  $\pi$  is  $ax + by + cz = 2$  then  $a^2 + b^2 + c^2 =$

$ax + by + cz = 2$  مستوی  $\pi$  اور  $(2, 0, -1)$  کا قدام  $(1, 0, -2)$  نقطہ سے کھینچا گیا عمود کا قدام  $\pi$  مستوی کی مساوات  $a^2 + b^2 + c^2 =$  ہو تو تب

Options :

28393623281. ✖ 2

28393623282. ✔ 8

28393623283. ✖ 4

28393623284. ✖ 9

Question Number : 62 Question Id : 2839365822 Question Type : MCQ Option Shuffling : Yes 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

$$\lim_{x \rightarrow 0} \frac{2 \tan x + \cos x - 1 + x}{\sqrt{4 \sin^2 x + 2 \tan x + 1} - \sqrt{3 \tan^2 x + \sin x + 1}} =$$

Options :

28393623285. ✖ 1

28393623286. ✖ 3

28393623287. ✔ 6

28393623288. ✖

Question Number : 63 Question Id : 2839365823 Question Type : MCQ Option Shuffling : Yes  
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 function  $f$  is defined by  $f(x) = \frac{\cot^3 x - \tan x}{\cos(x + \pi/4)}$  ( $x \neq \pi/4$ ), then  $\lim_{x \rightarrow \pi/4} f(x) =$

$$\lim_{x \rightarrow \pi/4} f(x) = \text{ایک تفاعل } f \text{ کی تعریف کی گئی تب } (x \neq \pi/4) \text{ ، } f(x) = \frac{\cot^3 x - \tan x}{\cos(x + \pi/4)}$$

Options :

28393623289. ✖ 4

28393623290. ✔ 8

28393623291. ✖  $\frac{8}{3}$

28393623292. ✖ 16

Question Number : 64 Question Id : 2839365824 Question Type : MCQ Option Shuffling : Yes  
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  $f(x) = \sqrt{x}$  ( $x \geq 0$ ) and  $g(x) = 1 + x^2$ , then  $(f \circ g)'(1) =$

$$(f \circ g)'(1) = \text{ہو تب } g(x) = 1 + x^2 \text{ اور } f(x) = \sqrt{x} \text{ (} x \geq 0 \text{)}$$

**Options :**

28393623293. ✖ 1

28393623294. ✖  $\frac{1}{2}$

28393623295. ✖  $\sqrt{2}$

28393623296. ✔  $\frac{1}{\sqrt{2}}$

**Question Number : 65 Question Id : 2839365825 Question Type : MCQ Option Shuffling : Yes  
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 values of  $\frac{dy}{dx}$  at  $x = \frac{\pi}{3}$  for the following system of curves in parametric form given in List-I with those of the items in List-II

فہرست I- میں دئے گئے پیرامیٹری شکلوں میں ذیل کے منحنیوں کے نظام کو  $x = \pi/3$  پر  $\frac{dy}{dx}$  کی قدریں فہرست-II میں کے اشیاء سے جوڑئے۔

List-I  
فہرست-I

- i)  $x = a(\theta - \sin \theta), y = a(1 - \cos \theta)$   
 ii)  $x = 3\cos \theta - 2\cos^3 \theta, y = 3\sin \theta - 2\sin^3 \theta$   
 iii)  $x = 3\cos \theta - \cos^3 \theta, y = 3\sin \theta - \sin^3 \theta$   
 iv)  $x = a \log \sin \theta, y = a \tan \theta$

List-II  
فہرست-II

- a)  $4\sqrt{3}$   
 b)  $\frac{-1}{3\sqrt{3}}$   
 c)  $\sqrt{3}$   
 d)  $\frac{1}{\sqrt{3}}$   
 e)  $\frac{1}{3\sqrt{3}}$

Options :

28393623297. ✓ (i) → c, (ii) → d, (iii) → b, (iv) → a

28393623298. ✘ (i) → c, (ii) → e, (iii) → d, (iv) → a

28393623299. ✘ (i) → d, (ii) → c, (iii) → b, (iv) → a

28393623300. ✘ (i) → d, (ii) → c, (iii) → e, (iv) → b

Question Number : 66 Question Id : 2839365826 Question Type : MCQ Option Shuffling : Yes  
 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  $y = x \sin x$  and  $\frac{dy}{dx} - \frac{y}{x}$  at  $x = \alpha$  is 1, then  $\alpha =$

$\alpha =$  قدر 1 ہو تو تب  $\frac{dy}{dx} - \frac{y}{x}$  اور  $x = \alpha$  اور  
 $y = x \sin x$

Options :

28393623301. ✖  $\sqrt{2}$

28393623302. ✖ 2

28393623303. ✔ 1

28393623304. ✖  $\frac{1}{\sqrt{2}}$

Question Number : 67 Question Id : 2839365827 Question Type : MCQ Option Shuffling : Yes  
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 ladder of length 13 mts has one end resting against a vertical wall and the other on the ground. If the lower end moves away from the wall at a speed of 2 mts/minute, then the speed (in mts/min) at which upper end falls when the bottom is 5 mts away from the wall is

13 میٹر لمبائی والی ایک سیڑھی کا ایک کنارہ سیدھے دیوار پر، دوسرا کنارہ زمین پر ہے اس کا نیچلا کنارہ 2 میٹر / سیکنڈس کے رفتار سے دیوار سے دور حرکت کرتا ہو تو، نیچلا کنارہ دیوار سے 5 میٹر دور میں ہو اس پر اوپر کا کنارہ نیچے کو ڈھلنے کی رفتار (میٹر / سیکنڈس)

Options :

28393623305. ✘  $\frac{6}{5}$

28393623306. ✘  $\frac{12}{5}$

28393623307. ✔  $\frac{5}{6}$

28393623308. ✘  $\frac{5}{12}$

Question Number : 68 Question Id : 2839365828 Question Type : MCQ Option Shuffling : Yes  
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 angle between the curves  $x^2 - y^2 = 4$  and  $x^2 + y^2 = 4\sqrt{2}$  is

منحنیوں کا درمیانی کا ایک زاویہ  $x^2 + y^2 = 4\sqrt{2}$  اور  $x^2 - y^2 = 4$

Options :

28393623309. ✘  $\frac{\pi}{6}$

28393623310. ✔  $\frac{\pi}{4}$

28393623311. ✘  $\frac{\pi}{3}$

28393623312. ✘  $\frac{\pi}{2}$

Question Number : 69 Question Id : 2839365829 Question Type : MCQ Option Shuffling : Yes  
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 volume (in cu. units) of the cylinder which can be inscribed in a sphere of  
radius 12 units is

12 یونٹس نصف قطر کا ایک کرہ میں اندرونی طور پر استوانہ کا اعظم حجم (مکعب یونٹس)

Options :

28393623313. ✖  $384\sqrt{3}\pi$

28393623314. ✔  $768\sqrt{3}\pi$

28393623315. ✖  $\frac{768\pi}{\sqrt{3}}$

28393623316. ✖  $\frac{1152\pi}{\sqrt{3}}$

Question Number : 70 Question Id : 2839365830 Question Type : MCQ Option Shuffling : Yes  
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

$$\int \frac{\tan x}{\sec^2 x(1+\sec^6 x)^{\frac{1}{2}}} dx =$$

Options :

28393623317. ✖  $-\frac{1}{2}(1+\sec^6 x)^{\frac{1}{3}} + c$

28393623318. ✘  $2(1 + \sec^6 x)^{\frac{4}{3}} + c$

28393623319. ✔  $\frac{-1}{2}(1 + \cos^6 x)^{\frac{1}{3}} + c$

28393623320. ✘  $2(1 + \cos^6 x)^{\frac{1}{3}} + c$

Question Number : 71 Question Id : 2839365831 Question Type : MCQ Option Shuffling : Yes  
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

$$\int \frac{1}{(x-1)^{\frac{5}{7}}(x+1)^{\frac{9}{7}}} dx =$$

Options :

28393623321. ✘  $\frac{7}{4} \left( \frac{x+1}{x-1} \right)^{\frac{2}{7}} + c$

28393623322. ✘  $\frac{-7}{4} \left( \frac{x+1}{x-1} \right)^{\frac{2}{7}} + c$

28393623323. ✔  $\frac{7}{4} \left( \frac{x-1}{x+1} \right)^{\frac{2}{7}} + c$

28393623324. ✘

$$\frac{-7}{4} \left( \frac{x-1}{x+1} \right)^{\frac{2}{7}} + c$$

Question Number : 72 Question Id : 2839365832 Question Type : MCQ Option Shuffling : Yes  
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

$$\int \frac{1 + \sqrt{3} \cot x}{1 - \sqrt{3} \cot x} dx =$$

Options :

28393623325. ✓  $-\frac{x}{2} + \frac{\sqrt{3}}{2} \log \left| \sin \left( x - \frac{\pi}{3} \right) \right| + c$

28393623326. ✗  $\frac{x}{2} + \frac{\sqrt{3}}{2} \log \left| \sin \left( x - \frac{\pi}{3} \right) \right| + c$

28393623327. ✗  $-\frac{x}{2} - \frac{\sqrt{3}}{2} \log \left[ \sin \left( x - \frac{\pi}{3} \right) \right] + c$

28393623328. ✗  $\frac{x}{2} - \frac{\sqrt{3}}{2} \log \left| \sin \left( x - \frac{\pi}{3} \right) \right| + c$

Question Number : 73 Question Id : 2839365833 Question Type : MCQ Option Shuffling : Yes  
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  $\int \frac{1}{\operatorname{cosec} x + \cos x} dx = \frac{1}{2\sqrt{3}} \log|f(x)| - \int \frac{\cos x - \sin x}{2 + \sin 2x} dx + c$  then at  $x = \frac{\pi}{3}$ ,  $|f(x)| =$

$$\text{ہو تو تب } \int \frac{1}{\operatorname{cosec} x + \cos x} dx = \frac{1}{2\sqrt{3}} \log|f(x)| - \int \frac{\cos x - \sin x}{2 + \sin 2x} dx + c$$

$$|f(x)| = \text{؟ } x = \frac{\pi}{3}$$

Options :

28393623329. ✓  $\frac{3\sqrt{3}-1}{\sqrt{3}+1}$

28393623330. ✗  $\frac{3\sqrt{3}+1}{\sqrt{3}+1}$

28393623331. ✗  $\frac{6\sqrt{3}-2}{\sqrt{3}+1}$

28393623332. ✗  $\frac{6\sqrt{3}+2}{\sqrt{3}+1}$

Question Number : 74 Question Id : 2839365834 Question Type : MCQ Option Shuffling : Yes  
 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

$$\int_0^{\frac{\pi}{2}} \frac{x \tan x \sec^2 x}{\tan^4 x + 1} dx =$$

Options :

28393623333. ✓  $\frac{\pi^2}{16}$

28393623334. ✘  $\frac{\pi^2}{4}$

28393623335. ✘  $\frac{\pi^2}{8}$

28393623336. ✘  $\frac{\pi^2}{32}$

Question Number : 75 Question Id : 2839365835 Question Type : MCQ Option Shuffling : Yes  
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

$$\int_3^6 \frac{\sqrt{x}}{\sqrt{9-x} + \sqrt{x}} dx =$$

Options :

28393623337. ✘  $\frac{1}{2}$

28393623338. ✓  $\frac{3}{2}$

28393623339. ✘ 2

28393623340. ✘ 1

Question Number : 76 Question Id : 2839365836 Question Type : MCQ Option Shuffling : Yes  
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

$$\lim_{n \rightarrow \infty} \left[ \left(1 + \frac{1}{n^2}\right) \left(1 + \frac{2^2}{n^2}\right) \dots (2) \right]^{\frac{1}{n}} =$$

Options :

28393623341. ✘  $2e^{\pi-4}$

28393623342. ✘  $e^{\frac{\pi-4}{2}}$

28393623343. ✔  $2e^{\frac{\pi-4}{2}}$

28393623344. ✘  $\frac{1}{2}e^{\frac{\pi-4}{2}}$

Question Number : 77 Question Id : 2839365837 Question Type : MCQ Option Shuffling : Yes  
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 ( in Sq. units) of the region bounded by the circle  $x^2 + y^2 = 64$ , positive X – axis and the  
line  $y = \sqrt{3}x$  is

رہ  $x^2 + y^2 = 64$  مثبت -X محور اور  $y = \sqrt{3}x$  خطوط مستقیم کا درمیان گھیرا ہوا علاقہ کا رقبہ (مربع-یونٹس)

Options :

28393623345. ✘  $\frac{16\pi}{3}$



28393623346. ✖  $\frac{8\pi}{3}$

28393623347. ✖  $\frac{64\pi}{3}$

28393623348. ✔  $\frac{32\pi}{3}$

Question Number : 78 Question Id : 2839365838 Question Type : MCQ Option Shuffling : Yes  
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 and b are the arbitrary constants, then the differential equation corresponding to the family of curves given by  $y = x[a \cos(\log x) + b \sin(\log x)]$  is

منحنیوں کی قبیلہ تفریقی مساوات  $y = x[a \cos(\log x) + b \sin(\log x)]$  صوابدیدی مستقل ہو اور a

Options :

28393623349. ✖  $x \frac{d^2 y}{dx^2} + x \frac{dy}{dx} - 2y = 0$

28393623350. ✔  $x^2 \frac{d^2 y}{dx^2} - x \frac{dy}{dx} + 2y = 0$

28393623351. ✖  $x^2 \frac{d^2 y}{dx^2} - x \frac{dy}{dx} - 2y = 0$

28393623352. ✖  $x^2 \frac{d^2 y}{dx^2} - x \frac{dy}{dx} + y = 0$

Question Number : 79 Question Id : 2839365839 Question Type : MCQ Option Shuffling : Yes  
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 solution for the differential equation  $y^2 dx + (x^2 - xy - y^2) dy = 0$  at  $(2,1)$  is  
 $x + y = k(xy^2 - y^3)$ , then  $k =$

$k =$   $x + y = k(xy^2 - y^3)$  کا عام حل  $y^2 dx + (x^2 - xy - y^2) dy = 0$  پر تفریقی مساوات  $(2,1)$

Options :

28393623353. ✖ -3

28393623354. ✖ -4

28393623355. ✖ 4

28393623356. ✔ 3

Question Number : 80 Question Id : 2839365840 Question Type : MCQ Option Shuffling : Yes  
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  $\frac{dy}{dx} + \frac{y}{x} = x^2$  is

تفریقی مساوات  $\frac{dy}{dx} + \frac{y}{x} = x^2$  کا عام حل

Options :

28393623357. ✖  $xy = \frac{x^2}{2} + c$

28393623358. ✖  $xy = \frac{x^3}{3} + c$

28393623359. ✔  $xy = \frac{x^4}{4} + c$

28393623360. ✖  $xy = \frac{x^5}{5} + c$

## Physics

Section Id :	283936128
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 :	283936128
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 81 Question Id : 2839365841 Question Type : MCQ Option Shuffling : Yes  
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.

(Take the relative strength of the strongest fundamental forces in nature as one)

درجہ ذیل کو جوڑئے۔ (فطرت میں مضبوط ترین بنیادی قوتوں کی اضافی طاقت (نسبتی طاقت) کو ایک کے طور پر لیں)

I	II
Fundamental forces in nature	Relative strength
فطرت میں بنیادی قوتیں	اضافی طاقت (نسبتی طاقت)
A) Strong nuclear force	e) $10^{-2}$
طاقتور مرکزائی قوتیں	
B) Weak nuclear force	f) 1
کمزور مرکزائی قوتیں	
C) Electromagnetic force	g) $10^{10}$
برقی مقناطیسی قوتیں	
D) Gravitational force	h) $10^{-13}$
تجاذبی قوتیں	
	i) $10^{-39}$

Options :

28393623361. ✘ A-f, B-i, C-e, D-h

28393623362. ✘ A-f, B-h, C-e, D-g

28393623363. ✔ A-f, B-h, C-e, D-i

28393623364. ✘ A-f, B-e, C-h, D-i

Question Number : 82 Question Id : 2839365842 Question Type : MCQ Option Shuffling : Yes  
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 physical quantity  $X$  is given by  $X = \frac{2k^3l^2}{m\sqrt{n}}$ . The percentage errors in the measurements of  $k$ ,

$l$ ,  $m$  and  $n$  are 1%, 2%, 3% and 4% respectively. The value of  $X$  is uncertain by

ایک طبعی مقدار  $X$  کی قدر  $X = \frac{2k^3l^2}{m\sqrt{n}}$  ہے پیمائش کے دوران  $k$ ،  $l$ ،  $m$  اور  $n$  کی فیصدی غلطیاں

بالترتیب 1%، 2%، 3% اور 4% ہیں تب  $X$  کی قدر میں غیر یقینی

Options :

28393623365. ✘ 8%

28393623366. ✘ 10%

28393623367. ✔ 12%

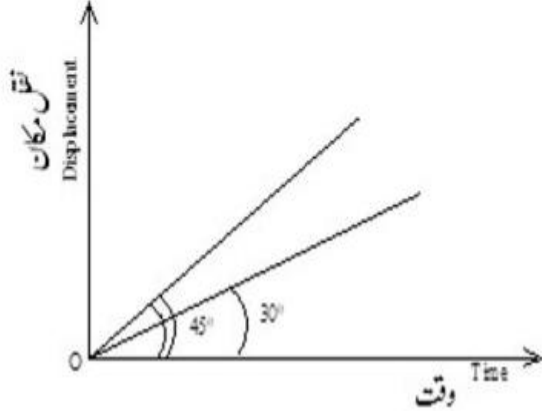
28393623368. ✘ 14%

Question Number : 83 Question Id : 2839365843 Question Type : MCQ Option Shuffling : Yes  
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 displacement-time graphs of two moving particles make angles of  $30^\circ$  and  $45^\circ$  with the time axis. The ratio of their velocities is

ایک نقل مکان-وقت کے ترسیم میں دو ذرات وقت کے محور سے  $30^\circ$  اور  $45^\circ$  زاویہ بناتے ہوئے متحرک ہوتے ہیں تب ان کے رفتاروں کی نسبت ہوگی



Options :

28393623369. ✘  $\sqrt{3}:2$

28393623370. ✘  $1:1$

28393623371. ✘  $1:2$

28393623372. ✔  $1:\sqrt{3}$

Question Number : 84 Question Id : 2839365844 Question Type : MCQ Option Shuffling : Yes  
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 projectile is given an initial velocity of  $\hat{i} + 2\hat{j} \text{ ms}^{-1}$ . The cartesian equation of its path is

( $x$  and  $y$  are in metres and  $g = 10 \text{ ms}^{-2}$ )

ایک پروجیکٹائل کی ابتدائی رفتار  $\hat{i} + 2\hat{j} \text{ ms}^{-1}$  ہے۔ تب اس راستے کی قرطیسی مساوات

( $g = 10 \text{ ms}^{-2}$  اور  $x$  اور  $y$  میٹرس میں) (کارٹیسین مساوات ہوگی)

Options :

28393623373. ✖  $y = x - 5x^2$

28393623374. ✔  $y = 2x - 5x^2$

28393623375. ✖  $y = 2x - 15x^2$

28393623376. ✖  $y = 2x - 25x^2$

Question Number : 85 Question Id : 2839365845 Question Type : MCQ Option Shuffling : Yes  
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 radii of circular paths of two particles of same mass are in the ratio of 1 : 2 , then to have  
a constant centripetal force, the ratio of their speeds should be

اگر ایک ہی کمیت کے دو ذرات کے دائروں کے نصف قطر 1:2 کے تناسب میں ہے ان کے

مرکزے جو قوت مستقل رہنے کے لئے ان کے رفتاروں کی نسبت ہونی چاہئے

Options :

28393623377. ✖ 4 : 1

28393623378.

✓ 1:√2

28393623379. ✖ 1:4

28393623380. ✖ √2:1

Question Number : 86 Question Id : 2839365846 Question Type : MCQ Option Shuffling : Yes  
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 angle between force  $\vec{F} = 3\hat{i} + 4\hat{j} - 5\hat{k}$  and displacement  $\vec{d} = 5\hat{i} + 4\hat{j} + 3\hat{k}$  is

اگر  $\vec{F} = 3\hat{i} + 4\hat{j} - 5\hat{k}$  قوت اور  $\vec{d} = 5\hat{i} + 4\hat{j} + 3\hat{k}$  نقل مکان ہے تب انکے درمیان زاویہ ہے

Options :

28393623381. ✖  $\cos^{-1}(0.16)$

28393623382. ✓  $\cos^{-1}(0.32)$

28393623383. ✖  $\cos^{-1}(0.24)$

28393623384. ✖  $\cos^{-1}(0.64)$

Question Number : 87 Question Id : 2839365847 Question Type : MCQ Option Shuffling : Yes  
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 bomb of mass 16 kg explodes into two pieces of masses 4 kg and 12 kg.

The velocity of the 12 kg mass is  $4 \text{ ms}^{-1}$ . The kinetic energy of the second piece is

16kg کمیت والا ایک بم پھٹ کر دو ٹکڑوں میں بٹ جاتا ہے جن کی کمیت 4kg اور 12kg ہیں  
12kg کمیت کی رفتار  $4 \text{ ms}^{-1}$  ہے دوسرے ٹکڑے کی توانائی بالحرکت ہوگی

Options :

28393623385. ✘ 144 J

28393623386. ✘ 192 J

28393623387. ✘ 96 J

28393623388. ✔ 288 J

Question Number : 88 Question Id : 2839365848 Question Type : MCQ Option Shuffling : Yes  
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 torque acting on a uniform circular wheel changes its angular momentum from  $A_0$  to  $4A_0$  in 4 seconds. The magnitude of the torque is

ایک ہموار دائری چکری پر مستقل گردشہ عمل کر رہا ہے جو اس چکری (پہیہ) کی زاویائی معیار حرکت  
کو 4 sec میں  $A_0$  سے  $4A_0$  میں تبدیل کرتا ہے تب گردشہ کی قدر ہوگی

Options :

28393623389. ✔  $\frac{3A_0}{4}$

28393623390. ✘  $A_0$

28393623391. ✖  $4A_0$

28393623392. ✖  $12A_0$

Question Number : 89 Question Id : 2839365849 Question Type : MCQ Option Shuffling : Yes  
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 particle performs uniform circular motion with an angular momentum  $L$ . If the frequency of the particle's motion is doubled and its kinetic energy is halved, then its angular momentum becomes

ایک ذرہ ہمواردائری حرکت میں ہے جس کا زاویائی معیار حرکت  $L$  ہے اگر ذرہ کے حرکت کے تعدد کو دگناہ اور اسکی توانائی بالحرکت کو نصف کر دیا جائے تو زاویائی معیار حرکت ہوگا

Options :

28393623393. ✖  $2L$

28393623394. ✖  $4L$

28393623395. ✖  $\frac{L}{2}$

28393623396. ✔  $\frac{L}{4}$

Question Number : 90 Question Id : 2839365850 Question Type : MCQ Option Shuffling : Yes

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 displacement of a particle is given by the relation  $x = 4(\cos \pi t + \sin \pi t)$ . The amplitude of the particle is

ایک ذرہ کے نقل مکان  $x = 4(\cos \pi t + \sin \pi t)$  کو دیا گیا ہے تب ذرہ کا حیثہ ارتعاش ہوگا

Options :

28393623397. ✖ - 4

28393623398. ✖ 4

28393623399. ✔  $4\sqrt{2}$

28393623400. ✖ 8

Question Number : 91 Question Id : 2839365851 Question Type : MCQ Option Shuffling : Yes 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  $m$  is at height  $R$  from the surface of the earth where  $R$  is the radius of the earth.

If the body is taken from here to a height of  $3R$  from the surface of the earth, the increase in the gravitational potential energy of the body is

( $g$  is acceleration due to gravity on the surface of the earth)

$m$  کمیت والا ایک جسم سطح زمین سے  $R$  بلندی پر ہے یہاں پر زمین کا نصف قطر  $R$  ہے اگر جسم کو یہاں سے سطح زمین سے

$3R$  کی بلندی پر پہنچایا جائے تو جسم کی تجاذبی توانائی بالقواہ میں اضافہ ( $g$  سطح زمین پر اسراع بوجہ جاذبہ زمین ہے)

Options :

28393623401. ✖ 3 mgR

28393623402. ✖  $\frac{\text{mgR}}{3}$

28393623403. ✖ 4 mgR

28393623404. ✔  $\frac{\text{mgR}}{4}$

Question Number : 92 Question Id : 2839365852 Question Type : MCQ Option Shuffling : Yes  
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 ratio of the areas of cross sections of three wires is 1:2:3 and the ratio of the Young's moduli of their materials is 3:2:1. If the three wires are of same length and same stretching force is applied to the three wires, then the ratio of the elongations of the three wires is

تین تار جنکے عرضی تراشی رقبوں کی نسبت 1:2:3 ہے اور ان کے ینگ مقیاس کی قدر کی نسبت  
3:2:1 ہے جو مساوی طول کے ہیں اور تینوں تاروں پر مساوی تناؤ قوت لگایا جائے تب تینوں تاروں کی کھینچاؤ  
کی نسبت ہوگی۔

Options :

28393623405. ✔ 4:3:4

28393623406. ✖ 1:1:1

28393623407. ✖ 9:4:1

28393623408. ✖ 3:4:3

Question Number : 93 Question Id : 2839365853 Question Type : MCQ Option Shuffling : Yes  
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 large bubble rises from the bottom of a lake to the surface, the volume of the bubble becomes 5 times its volume at the bottom of the lake. If  $H$  is the atmospheric pressure expressed in terms of water column height, then the depth of the lake is  
(The temperature of the water in the lake is same at all points)

جب ایک بڑا بلبلہ جھیل کے نچلے حصے سے اوپری سطح پر پہنچتا ہے تو بلبلہ کا حجم جھیل کے نیچلے حصے سے 5 گنا ہو جاتا ہے اگر  
 $H$  پانی کے کالم کی اونچائی کے لحاظ سے ظاہر ہونے والا ماحولیاتی دباؤ ہے تو جھیل کی گہرائی ہوگی۔ (جھیل میں پانی کی تپش  
ہر نقطہ پر مساوی ہے)

Options :

28393623409. ✖ 2H

28393623410. ✔ 4H

28393623411. ✖ 5H

28393623412. ✖ 3H

Question Number : 94 Question Id : 2839365854 Question Type : MCQ Option Shuffling : Yes  
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 water drop breaks into 64 identical droplets of each surface area  $10^{-7} \text{ m}^2$ . If the surface tension of water is  $0.07 \text{ Nm}^{-1}$ , the increase in the surface energy in the process is

ایک پانی کا قطرہ  $10^{-7} \text{ m}^2$  سطحی رقبہ والے 64 مساوی چھوٹے قطرہوں میں بٹ جاتا ہے اگر سطحی تناؤ  $0.07 \text{ Nm}^{-1}$  ہے تب اس عمل میں سطحی توانائی میں اضافہ ہوگا

Options :

28393623413. ✖  $158 \times 10^{-9} \text{ J}$

28393623414. ✖  $432 \times 10^{-9} \text{ J}$

28393623415. ✖  $216 \times 10^{-9} \text{ J}$

28393623416. ✔  $336 \times 10^{-9} \text{ J}$

Question Number : 95 Question Id : 2839365855 Question Type : MCQ Option Shuffling : Yes 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

Steam at  $100^\circ\text{C}$  is added to 150 g water to increase its temperature from  $20^\circ\text{C}$  to  $40^\circ\text{C}$ .

The total mass of the water at  $40^\circ\text{C}$  is

(specific heat capacity of water =  $1 \text{ cal g}^{-1} \text{ }^\circ\text{C}^{-1}$  and latent heat of steam =  $540 \text{ cal g}^{-1}$ )

150g پانی کی تپیش کو  $20^\circ\text{C}$  سے  $40^\circ\text{C}$  بڑھانے کے لئے (اضافہ کے لئے)  $100^\circ\text{C}$  پر موجود بھاپ کو پانی میں ملایا جاتا ہے تب  $40^\circ\text{C}$  پر پانی کی کل کمیت ہوگی

(پانی کی حرارت نوعی =  $1 \text{ cal g}^{-1} \text{ }^\circ\text{C}^{-1}$  اور بھاپ کی حرارت مخفی =  $540 \text{ cal g}^{-1}$ )

Options :



28393623417. ✓ 155 g

28393623418. ✘ 150 g

28393623419. ✘ 145 g

28393623420. ✘ 5 g

Question Number : 96 Question Id : 2839365856 Question Type : MCQ Option Shuffling : Yes  
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 blacksmith fixes circular iron frame on the wooden wheel of a bullock cart. The diameter of wooden wheel and circular iron frame are 5.012 m and 5 m respectively at 27 °C. The temperature (in °C) to which the iron ring must be heated so as to fit the wooden wheel is  
(Coefficient of linear expansion of iron =  $1.2 \times 10^{-5} \text{ } ^\circ\text{C}^{-1}$ )

ایک لوہار بیل گاڑی کے لکڑی کے پیسے پر دائری لوہے کا فریم لگاتا ہے 27°C پر لکڑی کے پیسے اور لوہے کے فریم کا قطر

بالترتیب 5.012 m اور 5m ہے لوہے کی رینگ کو پیسے پر لگانے کے لئے (°C میں) کونسی تپش پر گرم کرنا

پڑیگا۔ (لوہے کی خطی پھیلاؤ کی قدر  $1.2 \times 10^{-5} \text{ } ^\circ\text{C}^{-1}$ )

Options :

28393623421. ✘ 200

28393623422. ✓ 227

28393623423. ✘ 254

28393623424. ✖ 300

Question Number : 97 Question Id : 2839365857 Question Type : MCQ Option Shuffling : Yes  
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 moles of a triatomic gas  $\left(\gamma = \frac{4}{3}\right)$  at temperature  $327^\circ\text{C}$  expands adiabatically such that its volume becomes 8 times its initial volume. Later the temperature of the gas is doubled in an isochoric process. The total work done in the two processes is  
(R – universal gas constant)

مان لیجئے کہ  $327^\circ\text{C}$  پر ایک تھری جوہری گیس  $\left(\gamma = \frac{4}{3}\right)$  حرما گزار پھیلاؤ سے اس کے ابتدائی حجم سے 8 گنا ہو جاتا ہے پھر ہم حجمی طریق سے گیس کی تپیش دگنا ہو جاتی ہے تب دونوں دور عمل میں کل انجام شدہ کام ہو گا  
(کائناتی گیس مستقل - R)

Options :

28393623425. ✖ 900 R

28393623426. ✔ 1800 R

28393623427. ✖ 1200 R

28393623428. ✖ 300 R

Question Number : 98 Question Id : 2839365858 Question Type : MCQ Option Shuffling : Yes



**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 temperature of a gas is increased from  $27^{\circ}\text{C}$  to  $159^{\circ}\text{C}$ , then the percentage increase in the rms speed of the gas molecules is

ایک گیس کے تپش کو  $27^{\circ}\text{C}$  سے  $159^{\circ}\text{C}$  بڑھانے سے گیس سالمات کی rms رفتار میں اضافہ ہونے والا فیصد

**Options :**

28393623429. ✖ 5

28393623430. ✖ 10

28393623431. ✖ 15

28393623432. ✔ 20

**Question Number : 99 Question Id : 2839365859 Question Type : MCQ Option Shuffling : Yes 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 source emitting sound is tied to one end of a string of length 50 cm and is rotated with an angular speed of  $40 \text{ rad s}^{-1}$  in the horizontal plane. The ratio of the maximum and minimum frequencies of the sound heard by an observer standing at a distance of 10 m from the fixed end of the string is

(speed of sound in air =  $340 \text{ ms}^{-1}$ )

آواز کو خارج کرنے والے ایک مبدے کو  $50 \text{ cm}$  طول والی تار کے ایک سرے سے باندھا جاتا ہے اور اسے افقی سطح

میں  $40 \text{ rad s}^{-1}$  کی زاویائی رفتار کے ساتھ گھمایا جاتا ہے تار کے مقررہ اختتام سرے سے  $10 \text{ m}$  کے فاصلے پر

کھڑے مشاہد کو سنائی دینے والی آواز کی اعظم ترین اور اقل ترین تعدد کا تناسب ہوگا

(ہو ایس آواز کی رفتار =  $340 \text{ ms}^{-1}$ )

Options :

28393623433. ✖ 2:1

28393623434. ✖ 4:3

28393623435. ✖ 6:5

28393623436. ✔ 9:8

Question Number : 100 Question Id : 2839365860 Question Type : MCQ Option Shuffling : Yes

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

One end of a string is tied to the ceiling of a lift and a load is attached at the bottom end of the string. When the lift is moving upwards with an acceleration of  $2.1 \text{ ms}^{-2}$ , the speed of the transverse wave at the lower end of the string is  $88 \text{ ms}^{-1}$ . If the lift moves downwards with an acceleration of  $1.9 \text{ ms}^{-2}$ , the speed of the transverse wave at the lower end of the string is  $(g = 10 \text{ ms}^{-2})$

تار کے ایک آخری سرے کو لفٹ کے چھت سے باندھ کر دوسرے آخری سرے کو اوزان لگایا جاتا ہے  $2.1 \text{ ms}^{-2}$  کی  
اسراع سے لفٹ اوپر کی طرف متحرک ہے تب تار کے نیچلے آخری سطح پر عرضی موجوں کی رفتار  $88 \text{ ms}^{-1}$  ہے اگر  
لفٹ  $1.9 \text{ ms}^{-2}$  کے اسراع سے نیچے کی طرف متحرک ہے تب تار کے نیچلے آخری سرے پر عرضی موجوں کی رفتار  
ہوگی  $(g = 10 \text{ ms}^{-2})$

**Options :**

28393623437. ✖  $88 \text{ ms}^{-1}$

28393623438. ✖  $102 \text{ ms}^{-1}$

28393623439. ✖  $119 \text{ ms}^{-1}$

28393623440. ✔  $72 \text{ ms}^{-1}$

**Question Number : 101 Question Id : 2839365861 Question Type : MCQ Option Shuffling : Yes  
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 focal lengths of the objective and the eyepiece of a compound microscope are 2 cm and 3 cm respectively and the distance between them is 15 cm. The final image formed by the eyepiece is at infinity. The distances of the object and the image produced by the object from the objective lens are respectively

مرکب خورد بین کے بینہ اور چشمہ کے ماسکی طول  $2\text{cm}$  اور  $3\text{cm}$  بالترتیب ہیں جو ایک دوسرے سے  $15\text{cm}$  کے فاصلے پر پائے جاتے ہیں چشمہ سے شے کا آخری خیال لامتناہی مقام پر حاصل ہوتا ہے، بینہ سے شے کا خیال، اور بینہ سے عدسہ کا فاصلہ کتنا ہوگا

Options :

28393623441. ✓ 2.4 cm, 12 cm

28393623442. ✗ 2.4 cm, 15 cm

28393623443. ✗ 2.3 cm, 12 cm

28393623444. ✗ 2.3 cm, 3 cm

Question Number : 102 Question Id : 2839365862 Question Type : MCQ Option Shuffling : Yes  
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 single slit diffraction, the slit is illuminated with light of wavelength  $6000 \text{ \AA}$ . If the slit were illuminated by a light of wavelength  $\lambda$  the angular width of the central maximum decreases by 30 %. Then  $\lambda$  is

ایک واحد شکاف کے انکسار کے تجربے میں شکاف کو  $6000 \text{ \AA}$  کے طول موج والی شعاع سے روشن کیا گیا ہے اگر شکاف کو  $\lambda$  کے طول موج والی شعاع سے روشن کیا جائے تب اعظم ترین مرکز زاویائی چوڑائی 30% کی کمی واقع ہوگی تب  $\lambda$  کی قدر

**Options :**

28393623445. ✘  $6000 \text{ \AA}$

28393623446. ✔  $4200 \text{ \AA}$

28393623447. ✘  $3000 \text{ \AA}$

28393623448. ✘  $1800 \text{ \AA}$

**Question Number : 103 Question Id : 2839365863 Question Type : MCQ Option Shuffling : Yes**

**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 hollow spherical shell of radius  $r$  has a uniform charge density  $\sigma$ . It is kept in a cube of edge  $3r$  such that the centres of the cube and the shell coincide. Then the electric flux coming out of one face of a cube is

( $\epsilon_0$  - permittivity of free space)

ایک کھوکھلا کروی خول جس کا نصف قطر  $r$  اور ہموار چارج کثافت  $\sigma$  ہے اس کو مکعب کے  $3r$  کنارے پر رکھا گیا ہے مان لیجئے کہ مکعب اور خول کے مرکزے موافق ہو رہے ہیں پھر مکعب کے ایک چہرے سے نکلنے والا برقی فلکس ہو گا۔ (آزاد فضاء کی برقی اجازیت  $\epsilon_0$ )

Options :

28393623449. ✘  $\frac{\pi r^2 \sigma}{\epsilon_0}$

28393623450. ✘  $\frac{5 \epsilon_0}{2 \pi r^2 \sigma}$

28393623451. ✘  $\frac{\pi r^2 \sigma}{6 \epsilon_0}$

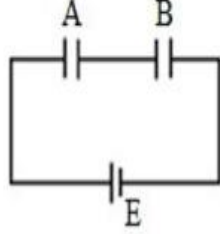
28393623452. ✔  $\frac{2 \pi r^2 \sigma}{3 \epsilon_0}$

Question Number : 104 Question Id : 2839365864 Question Type : MCQ Option Shuffling : Yes  
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 circuit shows two capacitors A and B of capacitances C and 2C respectively. When they are fully charged, the cell is removed and the capacitors are connected with their plates of opposite polarities touching each other. Then

دو ظرفیہ A اور B جنکی ظرفیت بالترتیب C اور 2C دور میں رکھا گیا ہے جب یہ پوری طرح چارج ہوتے ہیں تو برقی خانہ

کو نکال دیا جاتا ہے اور ظرفیوں کے تختیوں کے ضد قطبیت کو اس طرح جوڑا جاتا ہے کہ وہ ایک دوسرے کو چھوتے ہیں تب



a) Charge on A is  $\frac{4CE}{9}$

$\frac{4CE}{9}$  پر چارج A

b) Charge on B is zero

B پر چارج صفر

c) Loss of energy in this process is  $\left(\frac{CE^2}{3}\right)$

اس عمل میں توانائی کا نقصان  $\left(\frac{CE^2}{3}\right)$

The correct statement/s is/are

اوپر دئے گئے بیان میں صحیح ہے / ہیں

Options :

a and b are correct

28393623453. ✘ صحیح ہیں b اور a

b and c are correct

28393623454. ✔ صحیح ہیں c اور b

a, b and c are correct

28393623455. ✘ صحیح ہیں c اور a, b

c alone is correct

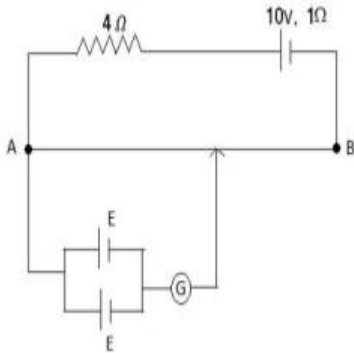
28393623456. ✖ صرف c صحیح ہے

Question Number : 105 Question Id : 2839365865 Question Type : MCQ Option Shuffling : Yes  
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 uniform conducting wire AB of length 5 m and resistance  $5 \Omega$  is connected as shown in the circuit. If the balancing point is obtained at 3 m from A, then the value of E is

5m لمبی اور  $5 \Omega$  مزاحمت والی ایک ہموار انعقاد تار AB کو اس طرح جوڑا جاتا ہے دور میں دکھایا گیا ہے A سے  
3m کے فاصلے پر توازنی نقطہ حاصل ہوتا ہے E کی قدر



Options :

28393623457. ✖ 1.5 V

28393623458. ✔ 3 V

28393623459. ✖ 0.67 V

28393623460. ✖ 1.33 V

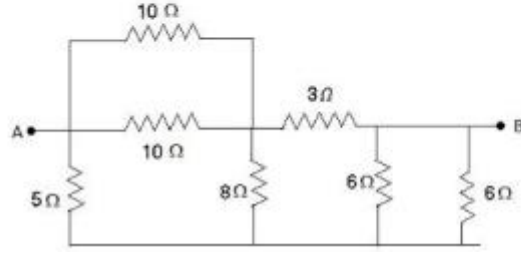


Question Number : 106 Question Id : 2839365866 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In the given circuit, the equivalent resistance between A and B is

دیئے گئے دور میں A اور B کے درمیان معادل مزاحمت ہے



Options :

28393623461. ✘ 3  $\Omega$

28393623462. ✔ 4  $\Omega$

28393623463. ✘ 4.5  $\Omega$

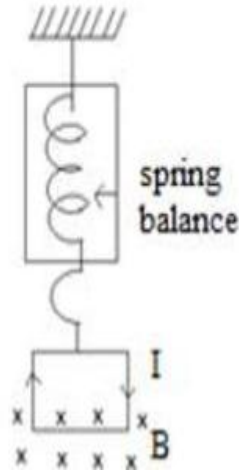
28393623464. ✘ 5  $\Omega$

Question Number : 107 Question Id : 2839365867 Question Type : MCQ Option Shuffling : Yes  
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 square loop of side 'a' and carrying a current 'I' is suspended from an insulating hanger of a spring balance as shown in the figure. The transverse magnetic field 'B' directed into the paper occurs only at the bottom side of the loop. When direction of current in the loop is reversed, the change in the reading of spring balance is

ایک مربع نما حلقہ کا ضلع 'a' اور اس میں بہہ رہی برقی رو 'I' ہو تو اسکو کمائی ترازو کے موصلیتی ہینگر سے لٹکایا گیا ہے شکل میں دکھایا گیا ہے صرف حلقے کے نیچلے ضلع پر ہی کاغذ کے اندرونی سمت میں عرضی مقناطیسی میدان B ظاہر ہوتا ہے تب حلقے میں بہنے والے برقی رو کی سمت کو الٹی سمت میں بہنے دیں تو کمائی ترازو میں مقدار کی تبدیلی



Options :

28393623465. ✘  $IaB$

28393623466. ✔  $2IaB$

28393623467. ✘  $\frac{IaB}{2}$

28393623468. ✘  $\frac{3}{2}IaB$

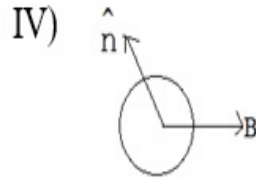
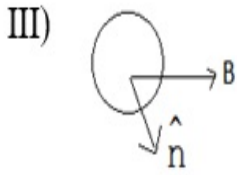
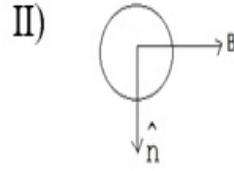
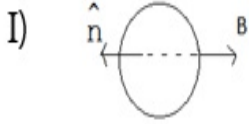
Question Number : 108 Question Id : 2839365868 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

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

A current carrying loop is placed in a uniform magnetic field 'B' in different orientations I, II, III and IV as shown in the figure. The correct order of decreasing potential energy is

( $\hat{n}$ - unit vector normal to the plane of the loop)

شکل میں دکھایا گیا ہے کہ ایک حلقہ جس میں برقی رو بہہ رہی ہے اسکو مختلف واقفیت I، II، III اور IV میں ایک ہموار مقناطیسی میدان میں رکھا گیا ہے تو انائی بالقواہ گھٹنے کی صحیح ترتیب ہے  
( $\hat{n}$  - اکائی سمتیہ جو حلقے سطح (مستوی) سے عمودوار ہے)



**Options :**

28393623469. ✖ I, III, II, IV

28393623470. ✖ I, II, III, IV

28393623471. ✔ I, IV, II, III

28393623472. ✖ III, IV, I, II

Question Number : 109 Question Id : 2839365869 Question Type : MCQ Option Shuffling : Yes  
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 bar magnet of magnetic moment  $2 \text{ Am}^2$  lies aligned with the direction of a uniform magnetic field of  $0.3 \text{ T}$ . The amount of work required by an external torque to turn the magnet so as to align its magnetic moment normal to the field direction is

0.3T کے ہموار مقناطیسی میدان کی سمت میں  $2 \text{ Am}^2$  کے مقناطیسی معیار اثر رکھنے والے سلاخی مقناطیس کو منسلک کیا جاتا ہے مقناطیسی معیار اثر کے میدان کی سمت سے عمودوار رکھنے کیلئے مقناطیس کو گھمانے کے لئے بیرونی گردشہ کا انجام شدہ کام

**Options :**

28393623473. ✘ 0.15 J

28393623474. ✘ 0.3 J

28393623475. ✔ 0.6 J

28393623476. ✘ 1.2 J

**Question Number : 110 Question Id : 2839365870 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

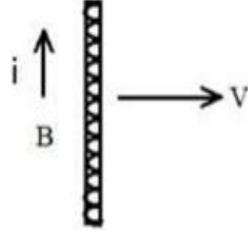
**Correct Marks : 1 Wrong Marks : 0**

A conducting rod is moving towards right with a velocity 'V' in a uniform magnetic field 'B'.

If the direction of induced current 'i' is as shown in the figure, then the direction of 'B' is

ہموار مقناطیسی میدان 'B' میں ایک موصلیتی راڈ 'V' رفتار سے دائیں جانب حرکت کر رہا ہے 'i' امالی برقی رو کی سمت کو

شکل میں دیکھایا گیا ہے تب B کی سمت ہوگی



Options :

in the plane of the paper towards right

28393623477. ✖ کاغذ کے مستوی میں دائیں جانب

in the plane of the paper towards left

28393623478. ✖ کاغذ کے مستوی میں بائیں جانب

perpendicular to the plane of the paper and into the paper

28393623479. ✔ کاغذ کے مستوی سے عموداً اور کاغذ کے اندر

perpendicular to the plane of the paper and out of the paper

28393623480. ✖ کاغذ کے مستوی سے عموداً اور کاغذ کے باہر

Question Number : 111 Question Id : 2839365871 Question Type : MCQ Option Shuffling : Yes

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 coil has a resistance of  $30 \Omega$  and an inductive reactance of  $20 \Omega$  at  $50 \text{ Hz}$  frequency. If an AC source of  $200 \text{ V}$ ,  $100 \text{ Hz}$  is connected across the coil, the current in the coil is

ایک لچھ  $30 \Omega$  مزاحمت اور  $20 \Omega$  کے تعدد پر  $50 \text{ Hz}$  کی امالی اثریت رکھتا ہے۔ اس لچھ کو  $200 \text{ V}$ ،  $100 \text{ Hz}$  کے مبداء AC سے جوڑا جاتا ہے تب لچھے میں بہنے والی برقی رو ہوگی

Options :

28393623481. ✖ 2 A

28393623482. ✖  $\frac{20}{\sqrt{13}} \text{ A}$

28393623483. ✔ 4 A

28393623484. ✖ 8 A

Question Number : 112 Question Id : 2839365872 Question Type : MCQ Option Shuffling : Yes 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 current 'i' is flowing through a wire of length 'L'. If it is made into a circular loop of one turn, then its magnetic moment is

'L' طول والے ایک تار میں 'i' برقی رو بہ رہی ہے اگر اس تار کو ایک ہی چکر میں دائروی حلقہ میں موڑا جائے تو اس کا مقناطیسی معیار اثر ہوگا

Options :

28393623485. ✔  $\frac{L^2 i}{4\pi}$

28393623486.

$$\times \frac{L^2}{4\pi}$$

$$28393623487. \times \frac{4\pi}{L^2 i}$$

$$28393623488. \times 4\pi L^2 i$$

**Question Number : 113 Question Id : 2839365873 Question Type : MCQ Option Shuffling : Yes 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**

Energy released in the fission of a single uranium nucleus is 200 MeV. Then the number of fissions per second to produce 5 mW power is

یورینیم کے ایک مرکزے کی پارگی کے دوران 200Mev توانائی خارج ہوتی ہے تب 5mW طاقت کو حاصل کرنے کیلئے فی سیکنڈ میں ہونے والی پارگی کی تعداد

**Options :**

$$28393623489. \checkmark 1.56 \times 10^8$$

$$28393623490. \times 1.56 \times 10^{13}$$

$$28393623491. \times 3.12 \times 10^8$$

$$28393623492. \times 3.12 \times 10^{13}$$



Question Number : 114 Question Id : 2839365874 Question Type : MCQ Option Shuffling : Yes  
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 electromagnetic radiations given in List – I with their uses given in List – II.

List – I

- A) X-rays
- B) UV-rays
- C) Radio waves
- D) IR - rays

List – II

- P) Remote switches
- Q) Finger prints in forensic Labs
- R) Crystal structure study
- S) TV communication system.

فہرست I- میں دئے گئے برقی مقناطیسی شعاعوں کو فہرست II- میں دئے گئے انکے استعمالات کو جوڑئے

فہرست II

P- ریموٹ سوئیچ

Q- فورینزک لیب میں انگلیوں کے نشانات

R- کرسٹل ساخت کا مطالعہ

S- ٹی وی کے مواصلاتی نظام

فہرست I

A- لاشعاعیں

B- بالابنفشی شعاعیں

C- ریڈیو موجیں

D- زیرسرخ شعاعیں

Options :

28393623493. ✖ A → Q, B → R, C → P, D → S

28393623494. ✔ A → R, B → Q, C → S, D → P

28393623495. ✖ A → R, B → S, C → Q, D → P

28393623496. ✖ A → S, B → R, C → Q, D → P

Question Number : 115 Question Id : 2839365875 Question Type : MCQ Option Shuffling : Yes



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 ratio of longest wavelengths of the spectral lines in the Lyman and Balmer series of hydrogen spectrum is

ہیڈروجن طیف کے لیمین اور بالمر سلسلہ میں طویل ترین طول موج والی طیفی خطوط کی نسبت ہے

Options :

28393623497. ✘  $\frac{3}{23}$

28393623498. ✔  $\frac{5}{27}$

28393623499. ✘  $\frac{7}{29}$

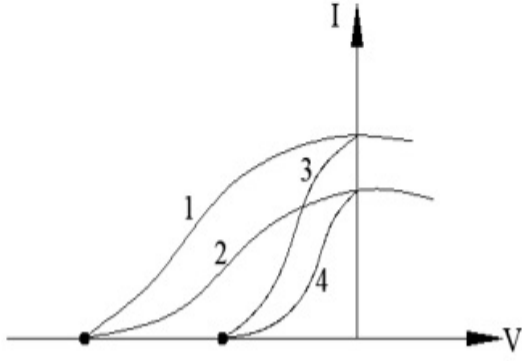
28393623500. ✘  $\frac{9}{31}$

Question Number : 116 Question Id : 2839365876 Question Type : MCQ Option Shuffling : Yes 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 graph given in the figure shows the variation of photo current (I) and the applied voltage (V) for two different materials and for two different intensities of the incident radiations. Then the curves which represent the same material are

شکل میں دیا گیا گراف دو مختلف مادوں اور مختلف حدتوں والی شعاعیں وقوع ہونے پر تغیر ضیائی برقی رو (I) اور اطلاق کردہ (عمل کردہ) قوتہ (V) کو بتلاتا ہے تب ایک ہی مادہ کو بتلانے والے منحنی خطوط



Options :

1 and 3

28393623501. ✖ 3 اور 1

1 and 4

28393623502. ✖ 4 اور 1

2 and 3

28393623503. ✖ 3 اور 2

3 and 4

28393623504. ✔ 4 اور 3.

Question Number : 117 Question Id : 2839365877 Question Type : MCQ Option Shuffling : Yes 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 of a radioactive substance A is two times the half-life of another radioactive substance B. Initially the number of nuclei of A and B are  $N_A$  and  $N_B$  respectively. After three half-lives of A, the number of nuclei of both are equal. Then  $\frac{N_A}{N_B}$  is

تایکاری شے A کی نصف عمر مدت، B، تایکاری شے کے نصف عمر مدت سے دگنی ہے ابتدا میں A اور B کے مرکزوں کی تعداد بالترتیب  $N_A$  اور  $N_B$  ہیں A کے تین نصف عمر مدتوں کے بعد دونوں کے مرکزوں کی تعداد مساوی ہے

تب  $\frac{N_A}{N_B}$  کی قدر

Options :

28393623505. ✖  $\frac{1}{3}$

28393623506. ✖  $\frac{1}{4}$

28393623507. ✖  $\frac{1}{6}$

28393623508. ✔  $\frac{1}{8}$

Question Number : 118 Question Id : 2839365878 Question Type : MCQ Option Shuffling : Yes  
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 an n-type semiconductor is heated

-n قسم کے نیم موصل کو گرم کرنے پر

Options :

28393623509. ✖

number of electrons increases while that of holes decreases

الکٹرانوں کی تعداد میں اضافہ اور سوراخوں کی تعداد میں کمی

number of holes increases while that of electrons decreases

28393623510. ✖ سوراخوں کی تعداد میں اضافہ اور الکٹرانوں کی تعداد میں کمی

number of holes and electrons do not change

28393623511. ✖ الکٹرانوں اور سوراخوں کی تعداد میں کوئی تبدیلی نہیں

number of holes and electrons increases equally

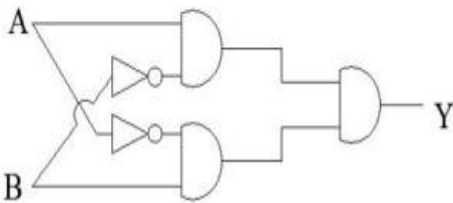
28393623512. ✔ الکٹرانوں اور سوراخوں کی تعداد میں مساویانہ اضافہ

Question Number : 119 Question Id : 2839365879 Question Type : MCQ Option Shuffling : Yes 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

5 logic gates are connected as shown in the figure. If A and B are the inputs, Y is the output then the truth table of the circuit is

دئے گئے شکل میں 5 منطقی گیٹس کو جوڑا گیا ہے اگر A اور B مخرجه اور Y مدخلہ ہے تب دور کا صدقہ جدول ہوگا



Options :

28393623513. ✔

A	B	Y
0	0	0
1	0	0
0	1	0
1	1	0

A	B	Y
0	0	1
1	0	0
0	1	0
1	1	1

28393623514. ✖

A	B	Y
0	0	0
1	0	1
0	1	1
1	1	1

28393623515. ✖

A	B	Y
0	0	1
1	0	1
0	1	1
1	1	1

28393623516. ✖

Question Number : 120 Question Id : 2839365880 Question Type : MCQ Option Shuffling : Yes  
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 statements regarding digital signals.

- i) provide a continuous set of values
- ii) represent values as discrete steps
- iii) can utilise binary system
- iv) are in the form of rectangular waves

Then the true statements are

ڈیجیٹل سگنل کے حوالے سے درجہ ذیل بیانات پر غور کریں

i۔ اقدار کا ایک مسلسل سیٹ فراہم کریں

ii۔ قدروں کو مجرد اقدامات کے طور پر پیش کریں

iii۔ بائنری سسٹم استعمال کر سکتے ہیں

iv۔ مستطیلی لہروں (موجوں) کی شکل میں ہیں

تب صحیح بیانات ہیں

Options :

28393623517. ✘ (i), (ii)

28393623518. ✘ (ii), (iii)

28393623519. ✔ (ii), (iii), (iv)

28393623520. ✘ (i), (ii), (iii), (iv)

## Chemistry

Section Id :

283936129

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 :	283936129
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 121 Question Id : 2839365881 Question Type : MCQ Option Shuffling : Yes  
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 100 watt bulb emits light of wavelength ' $x$ ' Å. What is the value of  $x$ , if the number of photons emitted is  $2.0 \times 10^{20} \text{ s}^{-1}$ ? ( $h = 6.63 \times 10^{-34} \text{ Js}$ ,  $1 \text{ watt} = 1 \text{ Js}^{-1}$ )

ایک 100 واٹ کا بلب ' $x$ ' Å طول موج کی روشنی کو خارج کرتا ہے۔ اگر خارج شدہ ضیائی (فوٹان)

$2.0 \times 10^{20} \text{ s}^{-1}$  ہو تو  $x$  کی قدر کیا ہوگی۔ ( $h = 6.63 \times 10^{-34} \text{ Js}$ ,  $1 \text{ watt} = 1 \text{ Js}^{-1}$ )

Options :

28393623521. ✘ 3578

28393623522. ✘ 4978

28393623523. ✔ 3978

28393623524. ✖ 4578

Question Number : 122 Question Id : 2839365882 Question Type : MCQ Option Shuffling : Yes  
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 ratio of the difference in energy between the first and second Bohr orbits to that  
between the second and third orbits is

بور کے پہلے اور دوسرے مدار کی توانائی کے فرق کی نسبت بمقابلہ دوسرے اور تیسرے مدار کی توانائی کے

Options :

28393623525. ✖  $\frac{5}{27}$

28393623526. ✔  $\frac{27}{5}$

28393623527. ✖  $\frac{4}{9}$

28393623528. ✖  $\frac{9}{4}$

Question Number : 123 Question Id : 2839365883 Question Type : MCQ Option Shuffling : Yes  
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



Assertion (A): First ionisation enthalpy of oxygen is less than that of nitrogen

Reason (R): Atoms with half-filled or completely filled orbitals are less stable

دعویٰ (A): آکسیجن کی پہلی روانی اینتھالپی نائٹروجن سے کم ہے۔

وجہ (R): مکمل پُر آر بیٹیل یا نصف پُر آر بیٹیل والے جوہر کم قیام پزیر ہوتے ہیں۔

The correct option among the following is

درجہ ذیل میں سے صحیح انتخاب ہے۔

Options :

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

(A) اور (R) صحیح ہیں۔ (R) صحیح وضاحت ہے (A) کی

28393623529. ✖

(A) and (R) are true, but (R) is not correct explanation of (A)

(A) اور (R) صحیح ہیں لیکن (R) صحیح وضاحت نہیں ہے (A) کی

28393623530. ✖

(A) is true but (R) is false

(A) صحیح ہے لیکن (R) غلط ہے

28393623531. ✔

(A) is false but (R) is true

(A) غلط ہے لیکن (R) صحیح ہے

28393623532. ✖

Question Number : 124 Question Id : 2839365884 Question Type : MCQ Option Shuffling : Yes

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, molecules are arranged in the increasing order of their bond angles?

مندرجہ ذیل میں کن سالموں میں بند کا زاویہ بڑھتی ہوئی ترتیب میں موجود ہے؟

Options :

28393623533. ✖  $\text{NH}_3 < \text{SO}_2 < \text{H}_2\text{O}$

28393623534. ✔  $\text{H}_2\text{O} < \text{NH}_3 < \text{SO}_2$

28393623535. ✖  $\text{SO}_2 < \text{NH}_3 < \text{H}_2\text{O}$

28393623536. ✖  $\text{SO}_2 < \text{H}_2\text{O} < \text{NH}_3$

Question Number : 125 Question Id : 2839365885 Question Type : MCQ Option Shuffling : Yes  
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

Arrange the molecules  $\text{B}_2$ ,  $\text{He}_2$ ,  $\text{N}_2$  and  $\text{C}_2$  in the increasing order of their bond order values

سالموں کو ان کی بڑھتی ہوئی بانڈ آرڈر کی قدروں کے لحاظ سے ترتیب دیجئے  $\text{C}_2$  اور  $\text{N}_2, \text{He}_2, \text{B}_2$

Options :

28393623537. ✖  $\text{C}_2 < \text{He}_2 < \text{B}_2 < \text{N}_2$

28393623538. ✖  $\text{N}_2 < \text{B}_2 < \text{C}_2 < \text{He}_2$

28393623539. ✔  $\text{He}_2 < \text{B}_2 < \text{C}_2 < \text{N}_2$

28393623540. ✖  $\text{He}_2 < \text{C}_2 < \text{N}_2 < \text{B}_2$

Question Number : 126 Question Id : 2839365886 Question Type : MCQ Option Shuffling : Yes

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 containers A and B contain CO<sub>2</sub> gas. Pressure, volume and absolute temperature of the gas in A are 4 times more compared to that in B. The mass of the gas in B is  $x$  g, then the mass of the gas in A will be

دو کنٹینرز A اور B میں CO<sub>2</sub> گیس موجود ہے۔ A میں گیس کا دباؤ، حجم اور مطلق درجہ حرارت B کے

مقابلے 4 گنا زیادہ ہے اگر B میں گیس کی کمیت  $x$  گرام ہو تو A میں گیس کی کمیت کیا ہوگی۔

Options :

28393623541. ✘  $\frac{x}{2} g$

28393623542. ✔  $4x g$

28393623543. ✘  $2x g$

28393623544. ✘  $16x g$

Question Number : 127 Question Id : 2839365887 Question Type : MCQ Option Shuffling : Yes 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 oxidation states of three carbon atoms in carbon suboxide (C<sub>3</sub>O<sub>2</sub>) respectively are

کاربن سب آکسائیڈ (C<sub>3</sub>O<sub>2</sub>) میں 3 کاربن جوہروں کی تکسیدی حالتیں بالترتیب

Options :

28393623545. ✔ +2, 0, +2

28393623546. ✖ +2, 0, +4

28393623547. ✖ +4, +2, +2

28393623548. ✖ -2, +2, 0

Question Number : 128 Question Id : 2839365888 Question Type : MCQ Option Shuffling : Yes  
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) 2 mole of an ideal gas is allowed to expand reversibly and isothermally from  
a pressure of 10 atmospheres to 1 atmosphere. The work done (in kJ) is

(R=8.3 J K<sup>-1</sup> mol<sup>-1</sup>)

T(K) کے تپش پر 2 سلم مثالی گیس کا پھیلاؤ آئسو تھرمل اور معکوس طور پر 10 کرہ ہوائی تا 1 کرہ ہوائی دباؤ پر واقع

ہوتا ہے۔ کیا گیا کام (کیلو جول) میں (R=8.3 J K<sup>-1</sup> mol<sup>-1</sup>)

Options :

28393623549. ✖  $-3.82 \times 10^{-1} \times T$

28393623550. ✖  $-4.82 \times 10^{-1} \times T$

28393623551. ✖  $-2.82 \times 10^{-2} \times T$

28393623552. ✔  $-3.82 \times 10^{-2} \times T$

Question Number : 129 Question Id : 2839365889 Question Type : MCQ Option Shuffling : Yes

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 298 K the molar solubility of  $\text{Cd}(\text{OH})_2$  in 0.1M KOH solution is  $x \times 10^{-y}$ . The values of  $x$  and  $y$  are respectively

(at 298 K,  $K_{sp}$  of  $\text{Cd}(\text{OH})_2 = 2.5 \times 10^{-14}$ )

298K تپش پر 0.1M KOH پوٹاشیم ہائیڈروآکسائیڈ محلول میں  $\text{Cd}(\text{OH})_2$  کی سلمی حل پذیری  $x \times 10^{-y}$

ہے  $x, y$  کی قدریں بالترتیب

(at 298 K,  $K_{sp}$  of  $\text{Cd}(\text{OH})_2 = 2.5 \times 10^{-14}$ )

Options :

28393623553. ✖ 2.5, 14

28393623554. ✔ 25, 13

28393623555. ✖ 25, 14

28393623556. ✖ 2.5, 16

Question Number : 130 Question Id : 2839365890 Question Type : MCQ Option Shuffling : Yes 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

Zeolite is a silicate of two metal ions X and Y. X and Y are respectively

زیولائیٹ دو دھاتی رواں X اور Y کا سلیکیٹ ہے X اور Y بالترتیب

Options :

28393623557. ✖  $\text{Ca}^{2+}, \text{Na}^+$

28393623558. ✘  $Mg^{2+}, Na^{+}$

28393623559. ✔  $Na^{+}, Al^{3+}$

28393623560. ✘  $Ca^{2+}, Mg^{2+}$

Question Number : 131 Question Id : 2839365891 Question Type : MCQ Option Shuffling : Yes  
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 incorrect reaction from the following

مندرجہ ذیل میں غلط تعامل کی نشاندہی کیجئے

Options :

28393623561. ✘  $2NaNO_3 \rightarrow 2NaNO_2 + O_2$

28393623562. ✔  $2LiNO_3 \rightarrow 2LiNO_2 + O_2$

28393623563. ✘  $2Pb(NO_3)_2 \rightarrow 2PbO + 4NO_2 + O_2$

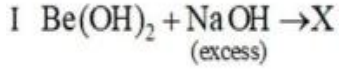
28393623564. ✘  $4LiNO_3 \rightarrow 2Li_2O + 4NO_2 + O_2$

Question Number : 132 Question Id : 2839365892 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

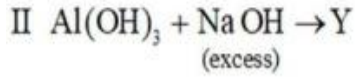
Correct Marks : 1 Wrong Marks : 0

In the reactions I and II the covalencies of Be and Al in X and Y are respectively

مندرجہ ذیل تعاملات I اور II میں Be اور Al کی شریک گرفت X اور Y بالترتیب



زائد



زائد

Options :

28393623565. ✖ 4, 6

28393623566. ✔ 4, 4

28393623567. ✖ 6, 4

28393623568. ✖ 3, 6

Question Number : 133 Question Id : 2839365893 Question Type : MCQ Option Shuffling : Yes  
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 atomic radius of gallium is less than that of aluminium. This is due to

گیلیم کا جوہری نصف قطر المونیم کے مقابلے میں کم ہوتا ہے اس کی وجہ

Options :

Greater shielding power of s-electrons of gallium atom

گیلیم جوہر کے s- الیکٹران کی اضافی حجابی طاقت

28393623569. ✖

28393623570. ✖



poor shielding power of s-electrons of gallium

گیلیم جوہر کے s- الیکٹران کی کمزور حجابی طاقت

Poor shielding power of d-electrons of gallium

گیلیم کے d- الیکٹران کی کمزور حجابی طاقت

28393623571. ✓

Greater shielding power of d-electrons of gallium

گیلیم کے d- الیکٹران کی اضافی حجابی طاقت

28393623572. ✘

Question Number : 134 Question Id : 2839365894 Question Type : MCQ Option Shuffling : Yes

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 of the following has lowest melting point?

مندرجہ ذیل میں کون کمتر نقطہ اجماعت رکھتا ہے؟

Options :

28393623573. ✘ Si

28393623574. ✘ Ge

28393623575. ✓ Sn

28393623576. ✘ Pb

Question Number : 135 Question Id : 2839365895 Question Type : MCQ Option Shuffling : Yes

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

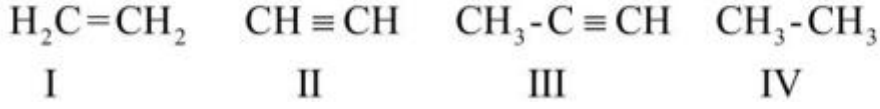


: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Arrange the following in the correct order of their acidic strength

ترشی طاقت کے اعتبار سے مندرجہ ذیل کی صحیح ترتیب دیجئے



Options :

28393623577. ✖ I < II < III < IV

28393623578. ✔ IV < I < III < II

28393623579. ✖ IV < III < II < I

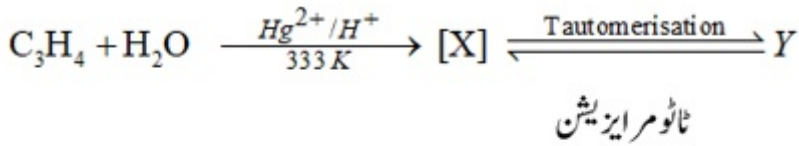
28393623580. ✖ II < III < IV < I

Question Number : 136 Question Id : 2839365896 Question Type : MCQ Option Shuffling : Yes

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 are respectively

X اور Y بالترتیب ہیں

Options :

unsaturated alcohol, aldehyde

28393623581. ✖ غیر سیر شدہ الکول، آلدیہائیڈ

saturated alcohol, ketone

28393623582. ✖

سیر شدہ آلکوحل، کیٹون

unsaturated alcohol, ketone

28393623583. ✔

غیر سیر شدہ آلکوحل، کیٹون

saturated alcohol, aldehyde

28393623584. ✖

سیر شدہ آلکوحل، آلدیہائیڈ

Question Number : 137 Question Id : 2839365897 Question Type : MCQ Option Shuffling : Yes  
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

Addition of HBr to propene in presence of a peroxide takes place contrary to Markovnikov rule. This can be explained by the mechanism involving

پر آکسائیڈ کی موجودگی میں پروپین میں HBr کا اضافہ مارکوونیکوف کے اصول کے خلاف ہوتا ہے۔ اس کی وضاحت

مندرجہ ذیل میکانیت کے ذریعہ بیان کی جاسکتی ہے۔

Options :

electrophile

28393623585. ✖

الیکٹران پسند

free radical

28393623586. ✔

آزاد اعلیے

nucleophile

28393623587. ✖

مرکزہ پسند

carbene

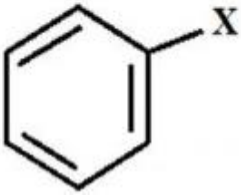
28393623588. ✖ کاربن

Question Number : 138 Question Id : 2839365898 Question Type : MCQ Option Shuffling : Yes  
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 rate of attack of an electrophile is least when X in the given compound is

الیکٹران پسند کے تعامل کی شرح کمتر ہوتی ہے جبکہ دیئے گئے مرکب میں X ہو



Options :

28393623589. ✔  $-\text{NO}_2$

28393623590. ✖  $-\text{CH}_3$

28393623591. ✖  $-\text{OH}$

28393623592. ✖  $-\text{NH}_2$

Question Number : 139 Question Id : 2839365899 Question Type : MCQ Option Shuffling : Yes  
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 the structure of a solid, W atoms are located at the cube corners of the unit cell, O atoms are located at the cube edges and Na atoms at the cube centres. The formula of the compound is

ایک ٹھوس کی ساخت میں W جوہر اکائی خانے کے مکعبی کونوں پر موجود ہوتے ہیں O جوہر مکعبی کناروں پر موجود ہوتے ہیں Na جوہر مکعبی مرکز میں موجود ہوتے ہیں۔ اس مرکب کا ضابطہ

Options :

28393623593. ✓ Na WO<sub>3</sub>

28393623594. ✗ Na WO<sub>2</sub>

28393623595. ✗ Na<sub>2</sub> W<sub>2</sub>O<sub>2</sub>

28393623596. ✗ Na<sub>2</sub> WO<sub>3</sub>

Question Number : 140 Question Id : 2839365900 Question Type : MCQ Option Shuffling : Yes 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 aqueous solution of a non-volatile solute boils at 100.17 °C. The temperature at which this solution will freeze (in °C) is

$$(K_b (\text{H}_2\text{O}) = 0.512 \text{ }^\circ\text{C kg mol}^{-1}, K_f (\text{H}_2\text{O}) = 1.86 \text{ }^\circ\text{C kg mol}^{-1})$$

ایک غیر طیران پزیر منحل کے آبی محلول کو 100.17 °C پر گرم کیا جاتا ہے۔ اس محلول کے منجمد (°C) ہونے کی تپش ہے۔  
(K<sub>b</sub> (H<sub>2</sub>O) = 0.512 °C kg mol<sup>-1</sup>, K<sub>f</sub> (H<sub>2</sub>O) = 1.86 °C kg mol<sup>-1</sup>)

Options :

28393623597. ✓ -0.62

28393623598.

✖ -0.512

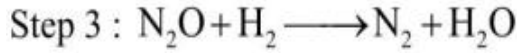
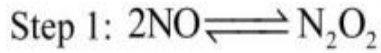
28393623599. ✖ -1.24

28393623600. ✖ -1.86

Question Number : 141 Question Id : 2839365901 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

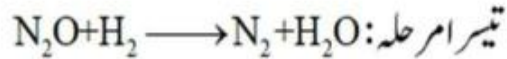
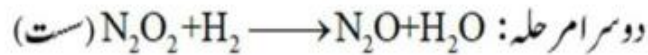
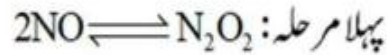
Correct Marks : 1 Wrong Marks : 0

A possible mechanism for the gaseous reaction  $2\text{H}_2 + 2\text{NO} \rightarrow 2\text{H}_2\text{O} + \text{N}_2$  is



The rate law for this reaction is

گیسی تعامل  $2\text{H}_2 + 2\text{NO} \rightarrow 2\text{H}_2\text{O} + \text{N}_2$  کے لئے ممکنہ میکانیت ہے



اس تعامل کے لئے شرح کلیہ ہے

Options :

28393623601. ✖  $R = k[\text{NO}]^2 [\text{H}_2]^2$

28393623602. ✖  $R = k[\text{NO}] [\text{H}_2]^2$

28393623603. ✖  $R = k[\text{NO}]^{1/2} [\text{H}_2]$

28393623604. ✓  $R = k[\text{NO}]^2 [\text{H}_2]$

Question Number : 142 Question Id : 2839365902 Question Type : MCQ Option Shuffling : Yes  
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 reduction potential of a half cell consisting of a Pt electrode immersed in 2.0 M  $\text{Fe}^{2+}$  and 0.02 M  $\text{Fe}^{3+}$  solution (in V) is

Given:  $\left( \frac{2.303RT}{F} = 0.059, E_{\text{Fe}^{3+}|\text{Fe}^{2+}}^0 = 0.771\text{V} \right)$

پلائٹیم برقیروں کو 2.0 M کے  $\text{Fe}^{2+}$  اور 0.02 M کے  $\text{Fe}^{3+}$  محلول میں ڈبایا جاتا ہے۔ اس نصف خانہ کی  
تھرمی قوت (V میں کیا ہوگی)

$\left( \frac{2.303RT}{F} = 0.059, E_{\text{Fe}^{3+}|\text{Fe}^{2+}}^0 = 0.771\text{V} \right)$  دیا گیا ہے

Options :

28393623605. ✘ 0.543

28393623606. ✓ 0.653

28393623607. ✘ 0.733

28393623608. ✘ 0.822

Question Number : 143 Question Id : 2839365903 Question Type : MCQ Option Shuffling : Yes  
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 sol prepared by Bredig's Arc method is X and the charge of sol particles of it is q.

X and q are respectively

بریڈگ کے آرک طریقے سے تیار کردہ سول X ہے اور سول کے ذرات پر بار q ہے X اور q بالترتیب

**Options :**

Metal sol, -ve

28393623609. ✓ دھاتی سول، منفی

Metal sol, +ve

28393623610. ✗ دھاتی سول، مثبت

Metal sulphide sol, -ve

28393623611. ✗ دھاتی سلفائیڈ سول، منفی

TiO<sub>2</sub> sol, +ve

28393623612. ✗ TiO<sub>2</sub> سول، مثبت

**Question Number : 144 Question Id : 2839365904 Question Type : MCQ Option Shuffling : Yes**

**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 metal which is refined by Mond process is (X), by van Arkel process is (Y) and

by zone refining is (Z). X, Y and Z respectively are

مانڈ کے طریقے سے تھلیس کردہ دھات (X) ہے۔ وان آرکل کے طریقے سے تھلیس کردہ دھات (Y) ہے اور

زون ریفائننگ کے طریقے سے تھلیس کردہ دھات (Z) ہے X, Y اور Z بالترتیب ہیں۔

**Options :**

28393623613. ✓ Ni, Zr, Ga



28393623614. ✖ Zr, Ni, Ga

28393623615. ✖ Ga, Ni, Zr

28393623616. ✖ Ni, Ga, Zr

Question Number : 145 Question Id : 2839365905 Question Type : MCQ Option Shuffling : Yes  
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 products formed during thermal decomposition of ammonium dichromate are

امونیم ڈائی کرومیٹ کی حراری تحلیل کے ذریعے تیار ہونے والے حاصلات ہیں

Options :

28393623617. ✖ O<sub>2</sub>, H<sub>2</sub>O, Cr(OH)<sub>3</sub>

28393623618. ✖ NO<sub>2</sub>, H<sub>2</sub>O, Cr<sub>2</sub>O<sub>3</sub>

28393623619. ✔ N<sub>2</sub>, Cr<sub>2</sub>O<sub>3</sub>, H<sub>2</sub>O

28393623620. ✖ N<sub>2</sub>O, Cr(OH)<sub>3</sub>

Question Number : 146 Question Id : 2839365906 Question Type : MCQ Option Shuffling : Yes  
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 hydrides of group 16 elements, the hydride X has lowest boiling point and the hydride Y has highest boiling point. X and Y respectively are

گروپ 16 عناصر کے ہائیڈرائیڈس میں ہائیڈرائیڈ X کمترین نقطہ جوش رکھتے ہیں جبکہ ہائیڈرائیڈ Y اعظم ترین نقطہ جوش رکھتے ہیں X اور Y بالترتیب ہیں۔

Options :

28393623621. ✘  $H_2Te, H_2Se$

28393623622. ✘  $H_2O, H_2Te$

28393623623. ✘  $H_2S, H_2Te$

28393623624. ✔  $H_2S, H_2O$

Question Number : 147 Question Id : 2839365907 Question Type : MCQ Option Shuffling : Yes  
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

Sodium nitrite with hydrochloric acid gives water along with two nitrogen oxides.

They are

سوڈیم نائٹرائٹ، ہائیڈروکلورک تریکس کے ساتھ مل کر پانی اور دو نائٹروجن آکسائیڈس بناتا ہے۔ وہ یہ ہیں

Options :

28393623625. ✔  $NO, NO_2$

28393623626. ✘  $NO_2, N_2O_3$

28393623627.

✖ NO<sub>2</sub>, N<sub>2</sub>O

28393623628. ✖ NO, N<sub>2</sub>O<sub>5</sub>

Question Number : 148 Question Id : 2839365908 Question Type : MCQ Option Shuffling : Yes  
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 incorrect statement about the interhalogen compounds

بین لوئجی مرکبات کے بارے میں غلط بیان کی نشاندہی کیجئے۔

Options :

ICl is more reactive than I<sub>2</sub>

28393623629. ✖ ICl زیادہ عامل ہوتا ہے بمقابلہ I<sub>2</sub> کے

They are diamagnetic in nature

28393623630. ✖ یہ ڈیامقناطیسیت کی خاصیت رکھتے ہیں

The products of ICl and water are HI + HOCl

28393623631. ✔ HI + HOCl ICl اور پانی کے حاصلات ہیں

They act as fluorinating agents

28393623632. ✖ یہ فلورینیشننگ عامل کے طور پر کام کرتے ہیں

Question Number : 149 Question Id : 2839365909 Question Type : MCQ Option Shuffling : Yes  
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 +2 oxidation state, which of the following lanthanoids act as reducing agents?

+2 تکسیدی حالت والے مندرجہ ذیل میں کونسے لانتھانائیڈس تھویلی عامل کے طور پر عمل کرتے ہیں

Options :

28393623633. ✘ Ce, Pr

28393623634. ✘ Eu, Gd

28393623635. ✔ Eu, Yb

28393623636. ✘ Lu, Er

Question Number : 150 Question Id : 2839365910 Question Type : MCQ Option Shuffling : Yes

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 oxidation state and co-ordination number of central metal atom is maximum with respect to which of the following complex?

پیچیدہ مرکب جس میں مرکزی دھاتی جوہر کا تکسیدی عدد اور ہم ربطی عدد کا مجموعہ سب سے زیادہ ہوتا ہے۔

Options :

28393623637. ✘  $K_3[Cr(C_2O_4)_3]$

28393623638. ✘  $[Cr(CO)_6]$

28393623639. ✔  $K_2[PtCl_6]$

28393623640. ✖  $K_4 [Fe (CN)_6]$

Question Number : 151 Question Id : 2839365911 Question Type : MCQ Option Shuffling : Yes  
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

**List – I (Polymer Type)**

- A) Fibre
- B) Elastomer
- C) Thermosetting polymer
- D) Thermoplastic polymer

The correct answer is

**List – II (Example)**

- I) Bakelite
- II) Polystyrene
- III) Neoprene
- IV) Dacron

ذیل کی جوڑیاں بنائیے۔

(ہمہ سالمہ کے اقسام) – I فہرست

A) ریشے

B) پکھیلے ہمہ سالمے

C) تھر مو سیٹنگ ہمہ سالمے

D) تھر مو پلاسٹک ہمہ سالمے

ان کا صحیح جواب ہے

(مثالیں) – II فہرست

I) بیکلائٹ

II) پالی اسٹائرین

III) نیوپرین

IV) ڈیکران

Options :

28393623641. ✖ A – III, B – IV, C – I, D – II

28393623642. ✔ A – IV, B – III, C – I, D – II

28393623643. ✖ A – II, B – I, C – IV, D – III

28393623644. ✖ A – IV, B – I, C – II, D – III

Question Number : 152 Question Id : 2839365912 Question Type : MCQ Option Shuffling : Yes  
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

From the following, the correct statements about polysaccharides are

مندرجہ ذیل میں پالیسیکرائیڈ کے بارے میں صحیح بیان ہے

I) Starch is a polymer of  $\alpha$ -D(+)-glucose

نشاستہ، گلوکوز- $\alpha$ -D(+)- کا ہمہ سالمہ ہے

II) Amylose component of starch is not soluble in water.

نشاستے کا امایلو س جز پانی میں نا حل پذیر ہے

III) Amylose is a branched chain polymer of  $\alpha$ -D(+)- glucose.

امایلو س، گلوکوز- $\alpha$ -D(+)- کا شاخدار زنجیری ہمہ سالمہ ہے

IV) Cellulose is a straight chain polymer of  $\beta$ -D(+)- glucose units

سیلولوس، گلوکوز- $\beta$ -D(+)- کی اکائیوں پر مشتمل سیدھی زنجیر والا ہمہ سالمہ ہے

Options :

I & IV only

28393623645. ✔ I & IV صرف

II & III only

28393623646. ✖ II & III صرف

II & IV only

28393623647. ✖ II & IV صرف

I & III only

28393623648. ✖ I & III صرف

Question Number : 153 Question Id : 2839365913 Question Type : MCQ Option Shuffling : Yes  
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 of the following acts as antihistamine?

مندرجہ ذیل میں کون اینٹی ہسٹامائن کے طور پر عمل کرتا ہے؟

Options :

Heroin

28393623649. ✖ ہیروئن

Dimetapp

28393623650. ✔ ڈای میتاپ

Nardil

28393623651. ✖ نارڈیل

Veronal

28393623652. ✖ ویرونل

Question Number : 154 Question Id : 2839365914 Question Type : MCQ Option Shuffling : Yes  
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 halogen exchange reaction from the following

مندرجہ ذیل میں سے لونجینی عناصر کے تبادلے کے تعامل کی نشاندہی کیجئے

Options :

Sandmeyer reaction

28393623653. ✖ سیانڈ میسر کا تعامل

Swarts reaction

28393623654. ✔ سوارٹس کا تعامل

Stephens reaction

28393623655. ✖ اسٹیفس کا تعامل

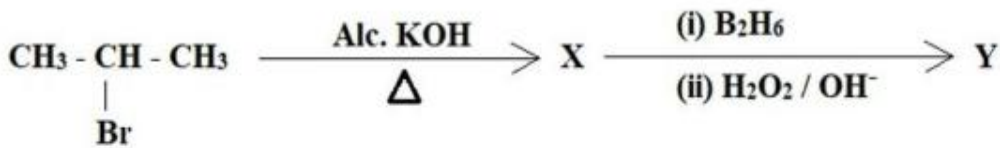
Wurtz reaction

28393623656. ✖ وورٹز کا تعامل

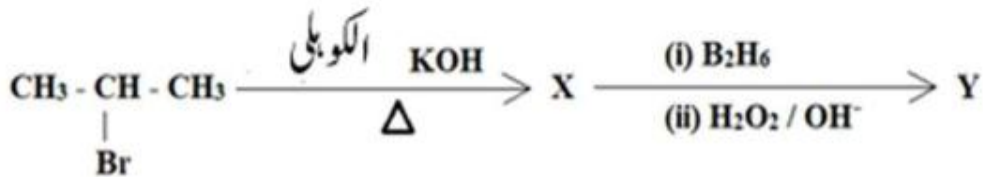
Question Number : 155 Question Id : 2839365915 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

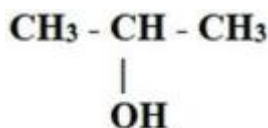
Identify the major product Y in the given reaction sequence



مندرجہ ذیل تعامل کے سلسلے میں Y اصل محاصل کیا ہے۔ اسکی نشاندہی کریں۔



Options :



28393623657. ✖



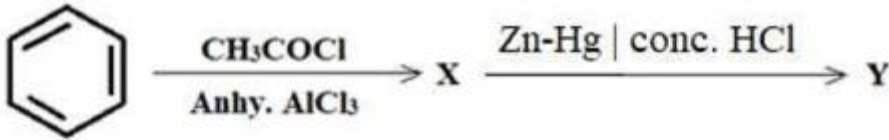
28393623658. ✓  $\text{CH}_3 - \text{CH}_2 - \text{CH}_2\text{OH}$

28393623659. ✘ 
$$\begin{array}{c} \text{CH}_3 - \text{CH} - \text{CH}_2\text{OH} \\ | \\ \text{OH} \end{array}$$

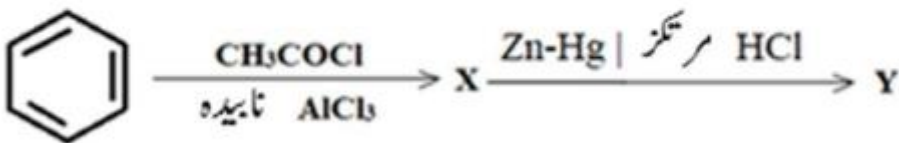
28393623660. ✘ 
$$\begin{array}{c} \text{CH}_2 - \text{CH}_2 - \text{CH}_2 \\ | \qquad \qquad | \\ \text{OH} \qquad \qquad \text{OH} \end{array}$$

Question Number : 156 Question Id : 2839365916 Question Type : MCQ Option Shuffling : Yes 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



Conversion of X into Y is an example of the reaction



X کی Y میں تبدیلی مندرجہ ذیل تعامل کی مثال ہے

Options :

Rosenmund reduction

28393623661. ✘ روسمنڈ کی تھویل

Clemmensen reduction

28393623662. ✓ کلیمسن کی تھویل



Wolff-Kishner reduction

28393623663. ✖

وولف کشنر کی تحویل

Stephen reduction

28393623664. ✖

اسٹیفن کی تحویل

Question Number : 157 Question Id : 2839365917 Question Type : MCQ Option Shuffling : Yes  
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 main reactants involved in Etard reaction are

ایٹارڈ تعامل میں حصہ لینے والے اہم متعاملات کیا ہیں۔

Options :

28393623665. ✔ Toluene + CrO<sub>2</sub>Cl<sub>2</sub>

28393623666. ✖ Toluene + CrO<sub>3</sub> + (CH<sub>3</sub>CO)<sub>2</sub>O

28393623667. ✖ Toluene + Cl<sub>2</sub>/hν

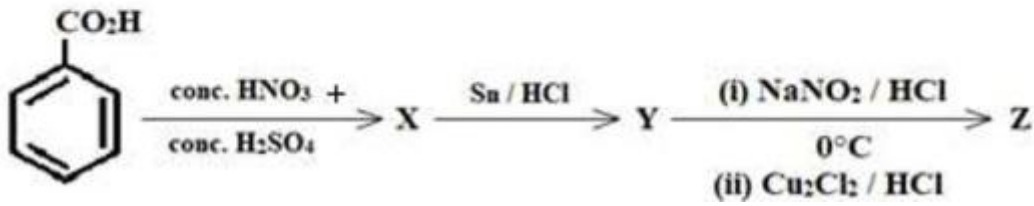
28393623668. ✖ Benzene + CO+HCl / Anhy. AlCl<sub>3</sub>

Question Number : 158 Question Id : 2839365918 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

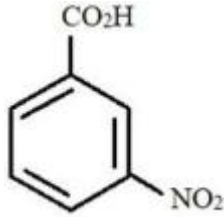
Correct Marks : 1 Wrong Marks : 0

The major product 'Z' in the reaction sequence is

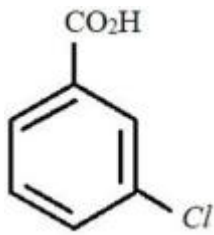
مندرجہ ذیل تعاملی سلسلے میں اصل محاصل Z کیا ہے



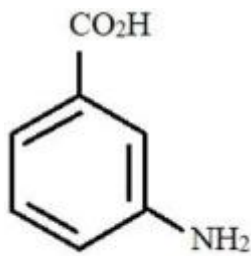
Options :



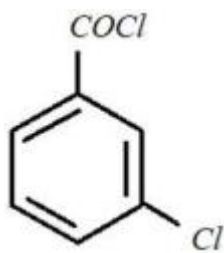
28393623669. ✖



28393623670. ✔



28393623671. ✖



28393623672. ✖

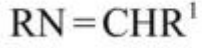
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

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

Correct Marks : 1 Wrong Marks : 0

Arrange the following in the order of decreasing basicity

مندرجہ ذیل کو گھٹتی ہوئی اساسیت کے اعتبار سے ترتیب دیجئے



I



II



III

Options :

28393623673. ✖ I > III > II

28393623674. ✔ III > I > II

28393623675. ✖ II > III > I

28393623676. ✖ II > I > III

Question Number : 160 Question Id : 2839365920 Question Type : MCQ Option Shuffling : Yes

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

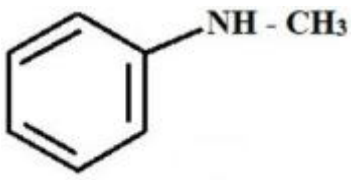
Which one of the following gives a foul-smelling substance when treated with chloroform and alcoholic KOH?

مندرجہ ذیل میں کونسا مرکب کلوروفارم اور الکوہالک پوٹاشیم ہائیڈروآکسائیڈ کے ساتھ تعامل کر کے ناقابل برداشت بو

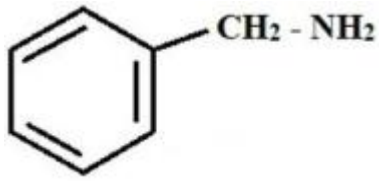
والی گیس بناتا ہے۔

Options :

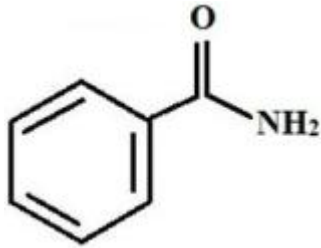
28393623677. ✖



28393623678. ✓



28393623679. ✘



28393623680. ✘

