हिन्दुस्तान पेट्रोलियम कॉर्पोरेशन लिमिटेड
Hindustan Petroleum Corporation Limited
(A Maharatna Company)

Participant ID	
Participant Name	
Test Center Name	iON Digital Zone iDZ Kanti
Test Date	16/08/2025
Test Time	2:00 PM - 4:30 PM
Subject	Mechanical Engineer

Section : **English Language**

Q.1 **Select the most appropriate idiom to substitute the highlighted segment in the given sentence.**

When the board questioned his loyalty, he immediately became angry and defensive, refusing to explain himself.

Ans
✗ A. took the bull by the horns
✗ B. pulled up his socks
✓ C. jumped down their throats
✗ D. drew the line

Question ID : **441009387298**
Option 1 ID : **4410091514812**
Option 2 ID : **4410091514811**
Option 3 ID : **4410091514810**
Option 4 ID : **4410091514813**
Status : **Not Answered**
Chosen Option : **--**

Q.2 **Select the option that can be used as a one-word substitute for the underlined group of words.**

Heathcliff's eyes burned with the intensity of someone who would stop at nothing, as though he had made a firm decision to pursue something despite obstacles.

Ans
✗ A. decided
✗ B. schemed
✓ C. resolved
✗ D. persevered

Question ID : **441009383468**
Option 1 ID : **4410091499442**
Option 2 ID : **4410091499440**
Option 3 ID : **4410091499441**
Option 4 ID : **4410091499443**
Status : **Answered**
Chosen Option : **C**

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Q.3 Select the most appropriate article to fill in the blank. If no article is needed, select 'No article required'.

The candle-wick reclined on one of the antique volumes and perfumed the place with _____ odour of roasted calf-skin.

Ans
✗ A. No article required
✓ B. an
✗ C. a
✗ D. the

Question ID : **441009383378**
Option 1 ID : **4410091499071**
Option 2 ID : **4410091499069**
Option 3 ID : **4410091499068**
Option 4 ID : **4410091499070**
Status : **Answered**
Chosen Option : **B**

Q.4 Identify the word in the given sentence that contains a spelling error and select the option that rectifies this error.

His honest, warm, and intelligent nature shook off rapidly the clouds of ignorance and degredation in which it had been bred; and Catherine's sincere commendations acted as a spur to his industry.

Ans
✗ A. ignorance- ingorance
✓ B. degredation- degradation
✗ C. intelligent- inteligent
✗ D. commendations- commendatiuns

Question ID : **441009383826**
Option 1 ID : **4410091500939**
Option 2 ID : **4410091500940**
Option 3 ID : **4410091500938**
Option 4 ID : **4410091500941**
Status : **Answered**
Chosen Option : **B**

Q.5 Select the option that can be used as a one-word substitute for the underlined group of words.

She entered the room with **a calm and graceful way of moving**, unlike the stormy mood outside.

Ans
✓ A. poise
✗ B. lightness
✗ C. speed
✗ D. hesitation

Question ID : **441009383487**
Option 1 ID : **4410091499524**
Option 2 ID : **4410091499527**
Option 3 ID : **4410091499525**
Option 4 ID : **4410091499526**
Status : **Answered**
Chosen Option : **A**

Q.6 **Identify the word in the given sentence that contains a spelling error and select the option that rectifies this error.**

She threw down her pipe and bustled in, the girl followed, and I entered too; soon percceiving that her report was true, and, moreover, that I had almost upset her wits by my unwelcome apparition, I bade her be composed.

Ans
- ✗ A. apparition - apparitione
- ✗ B. bade - bede
- ✓ C. percceiving - perceiving
- ✗ D. moreover - morover

Question ID : **441009383830**
Option 1 ID : **4410091500956**
Option 2 ID : **4410091500957**
Option 3 ID : **4410091500954**
Option 4 ID : **4410091500955**
Status : **Answered**
Chosen Option : **C**

Q.7 **Select the most appropriate proverb to substitute the highlighted segment in the given sentence.**

He continued working on the invention, even though nobody believed in it, because he believed that eventually, every persistent effort bears some fruit.

Ans
- ✗ A. a rising tide lifts all boats
- ✗ B. even a broken clock is right twice a day
- ✗ C. birds of a feather flock together
- ✓ D. constant dripping wears away the stone

Question ID : **441009387304**
Option 1 ID : **4410091514834**
Option 2 ID : **4410091514835**
Option 3 ID : **4410091514837**
Option 4 ID : **4410091514836**
Status : **Answered**
Chosen Option : **D**

Q.8 **The following sentence may contain an incorrect or awkward use of a conjunction. Select the option that best corrects the sentence. Select 'No correction needed' if the sentence is already correct.**

Catherine wanted to stay with Edgar, yet she longed for the wildness and freedom she had shared with Heathcliff, or she never said it aloud.

Ans
- ✗ A. freedom she had shared with Heathcliff, because she never said it aloud
- ✓ B. freedom she had shared with Heathcliff, but she never said it aloud
- ✗ C. freedom she had shared with Heathcliff, unless she never said it aloud
- ✗ D. No correction needed

Question ID : **441009383400**
Option 1 ID : **4410091499157**
Option 2 ID : **4410091499156**
Option 3 ID : **4410091499158**
Option 4 ID : **4410091499159**
Status : **Answered**
Chosen Option : **B**

Q.9 Select the most appropriate synonym of the highlighted word in the given sentence.

His **puerile** comments during the meeting undermined the seriousness of the discussion.

Ans
- ✗ A. Sincere
- ✗ B. Astute
- ✓ C. Juvenile
- ✗ D. Profound

Question ID : **441009387521**
Option 1 ID : **4410091515700**
Option 2 ID : **4410091515701**
Option 3 ID : **4410091515698**
Option 4 ID : **4410091515699**
Status : **Answered**
Chosen Option : **C**

Q.10 Sentences of a paragraph are given below in jumbled order. Arrange the sentences in the correct order to form a meaningful and coherent paragraph.

A. Though the day had faded, the scene remained bathed in amber and silver light.
B. The moon now lit my path so clearly that every stone and blade of grass stood out in sharp detail.
C. As I neared the gate, it yielded to my hand—an unexpected improvement from earlier visits.
D. Meanwhile, a faint scent of stocks and wallflowers drifted through the air, lending a gentle charm to the night.

Ans
- ✓ A. CBAD
- ✗ B. BADC
- ✗ C. DCBA
- ✗ D. ADBC

Question ID : **441009383438**
Option 1 ID : **4410091499312**
Option 2 ID : **4410091499314**
Option 3 ID : **4410091499315**
Option 4 ID : **4410091499313**
Status : **Answered**
Chosen Option : **A**

Q.11 Select the most appropriate ANTONYM of the highlighted word in the given sentence.

His **temerity** in questioning the board's decision shocked even the most seasoned employees.

Ans
- ✗ A. Audacity
- ✓ B. Cowardice
- ✗ C. Boldness
- ✗ D. Rashness

Question ID : **441009387331**
Option 1 ID : **4410091514942**
Option 2 ID : **4410091514943**
Option 3 ID : **4410091514944**
Option 4 ID : **4410091514945**
Status : **Answered**
Chosen Option : **B**

Q.12 Sentences of a paragraph are given below in jumbled order. Arrange the sentences in the correct order to form a meaningful and coherent paragraph.

A. The male speaker began to read, but kept glancing up from the book.
B. Her golden ringlets bent forward as she helped him with his lesson.
C. I envied him for the chance I had foolishly thrown away.
D. His companion stood behind him, correcting him with a playful slap when distracted.

Ans
✗ A. BACD
✗ B. ADCB
✗ C. BCDA
✓ D. ADBC

Question ID : **441009383428**
Option 1 ID : **4410091499272**
Option 2 ID : **4410091499273**
Option 3 ID : **4410091499274**
Option 4 ID : **4410091499275**
Status : **Answered**
Chosen Option : **D**

Q.13 The given sentence contains an incorrect or awkward use of a conjunction. Choose the option that best corrects the sentence. Select 'No correction needed' if the sentence is already correct.

Heathcliff returned to Wuthering Heights not only wealthier but also with a quiet, hardened demeanour.

Ans
✗ A. not only wealthier but also appeared different
✓ B. No correction needed
✗ C. not only wealthier but also more bitter
✗ D. not only wealthier and also

Question ID : **441009383406**
Option 1 ID : **4410091499182**
Option 2 ID : **4410091499183**
Option 3 ID : **4410091499181**
Option 4 ID : **4410091499180**
Status : **Answered**
Chosen Option : **B**

Comprehension:

Read the given passage carefully and answer the questions that follow.

In today's fast-evolving professional landscape, a Career Lab serves as a vital resource for students and professionals seeking clarity and direction in their career paths. Unlike traditional career counselling, which often focuses on general advice, Career Labs provide hands-on experiences, skill assessments and personalised guidance tailored to individual aspirations and market trends. A Career Lab typically integrates various tools, such as psychometric tests, workshops on resume buildings, interview simulations and networking opportunities with industry experts. This multifaceted approach equips individuals not only with knowledge about different professions but also with practical skills necessary for job acquisition and career growth. One significant advantage of Career Labs is their emphasis on adaptability. Given the rapid changes in technology and job requirements, Career Labs encourage continuous learning and skill upgrading. They help participants recognise transferable skills that can open doors to new fields, fostering resilience in uncertain job markets. However, the effectiveness of Career Labs depends on their ability to stay updated with current industry demands and to customise guidance accordingly. Labs that merely offer static information without real-time relevance risk becoming obsolete. Therefore, a successful Career Lab combines dynamic content delivery with mentorship and feedback mechanisms, empowering individuals to make informed decisions. In sum, Career Labs act as dynamic platforms that bridge the gap between academic learning and professional realities. By fostering self-awareness and practical skills, they enhance employability and prepare individuals for sustained career success.

SubQuestion No : 14

Q.14 Which aspect primarily differentiates Career Labs from traditional career counselling?

Ans

✗ A. They offer personalised, practical experiences aligned with market trends.

✗ B. They rely on static information without real-time updates.

✗ C. They provide generic career advice applicable to all fields.

✓ D. They focus solely on academic performance assessments.

Question ID : **441009391593**
Option 1 ID : **4410091531916**
Option 2 ID : **4410091531918**
Option 3 ID : **4410091531915**
Option 4 ID : **4410091531917**
Status : **Answered**
Chosen Option : **A**

Comprehension:

Read the given passage carefully and answer the questions that follow.

In today's fast-evolving professional landscape, a Career Lab serves as a vital resource for students and professionals seeking clarity and direction in their career paths. Unlike traditional career counselling, which often focuses on general advice, Career Labs provide hands-on experiences, skill assessments and personalised guidance tailored to individual aspirations and market trends. A Career Lab typically integrates various tools, such as psychometric tests, workshops on resume buildings, interview simulations and networking opportunities with industry experts. This multifaceted approach equips individuals not only with knowledge about different professions but also with practical skills necessary for job acquisition and career growth. One significant advantage of Career Labs is their emphasis on adaptability. Given the rapid changes in technology and job requirements, Career Labs encourage continuous learning and skill upgrading. They help participants recognise transferable skills that can open doors to new fields, fostering resilience in uncertain job markets. However, the effectiveness of Career Labs depends on their ability to stay updated with current industry demands and to customise guidance accordingly. Labs that merely offer static information without real-time relevance risk becoming obsolete. Therefore, a successful Career Lab combines dynamic content delivery with mentorship and feedback mechanisms, empowering individuals to make informed decisions. In sum, Career Labs act as dynamic platforms that bridge the gap between academic learning and professional realities. By fostering self-awareness and practical skills, they enhance employability and prepare individuals for sustained career success.

SubQuestion No : 15

Q.15 What is the implied importance of adaptability in the context of Career Labs?

Ans

✗ A. It ensures that Career Labs remain irrelevant in changing job markets.

✗ B. It fosters resilience by helping individuals apply skills across different industries.

✓ C. It enables participants to reject all new skills in favour of expertise in one field.

✗ D. It discourages continuous learning to maintain a focus on core competencies.

Question ID : **441009391594**
Option 1 ID : **4410091531920**
Option 2 ID : **4410091531921**
Option 3 ID : **4410091531919**
Option 4 ID : **4410091531922**
Status : **Answered**
Chosen Option : **B**

Comprehension:

Read the given passage carefully and answer the questions that follow.

In today's fast-evolving professional landscape, a Career Lab serves as a vital resource for students and professionals seeking clarity and direction in their career paths. Unlike traditional career counselling, which often focuses on general advice, Career Labs provide hands-on experiences, skill assessments and personalised guidance tailored to individual aspirations and market trends. A Career Lab typically integrates various tools, such as psychometric tests, workshops on resume buildings, interview simulations and networking opportunities with industry experts. This multifaceted approach equips individuals not only with knowledge about different professions but also with practical skills necessary for job acquisition and career growth. One significant advantage of Career Labs is their emphasis on adaptability. Given the rapid changes in technology and job requirements, Career Labs encourage continuous learning and skill upgrading. They help participants recognise transferable skills that can open doors to new fields, fostering resilience in uncertain job markets. However, the effectiveness of Career Labs depends on their ability to stay updated with current industry demands and to customise guidance accordingly. Labs that merely offer static information without real-time relevance risk becoming obsolete. Therefore, a successful Career Lab combines dynamic content delivery with mentorship and feedback mechanisms, empowering individuals to make informed decisions. In sum, Career Labs act as dynamic platforms that bridge the gap between academic learning and professional realities. By fostering self-awareness and practical skills, they enhance employability and prepare individuals for sustained career success.

SubQuestion No : 16

Q.16 Select the most appropriate title for the passage.

Ans

✔ A. The Role of Adaptability in Job Searching

✘ B. Bridging the Gap Between Education and Employment

✘ C. Skill Development through Career Lab Programmes

✘ D. Traditional Career Counselling Methods: An Overview

Question ID : **441009391595**
Option 1 ID : **4410091531925**
Option 2 ID : **4410091531923**
Option 3 ID : **4410091531926**
Option 4 ID : **4410091531924**
Status : **Answered**
Chosen Option : **C**

Comprehension:

Read the given passage carefully and answer the questions that follow.

In today's fast-evolving professional landscape, a Career Lab serves as a vital resource for students and professionals seeking clarity and direction in their career paths. Unlike traditional career counselling, which often focuses on general advice, Career Labs provide hands-on experiences, skill assessments and personalised guidance tailored to individual aspirations and market trends. A Career Lab typically integrates various tools, such as psychometric tests, workshops on resume buildings, interview simulations and networking opportunities with industry experts. This multifaceted approach equips individuals not only with knowledge about different professions but also with practical skills necessary for job acquisition and career growth. One significant advantage of Career Labs is their emphasis on adaptability. Given the rapid changes in technology and job requirements, Career Labs encourage continuous learning and skill upgrading. They help participants recognise transferable skills that can open doors to new fields, fostering resilience in uncertain job markets. However, the effectiveness of Career Labs depends on their ability to stay updated with current industry demands and to customise guidance accordingly. Labs that merely offer static information without real-time relevance risk becoming obsolete. Therefore, a successful Career Lab combines dynamic content delivery with mentorship and feedback mechanisms, empowering individuals to make informed decisions. In sum, Career Labs act as dynamic platforms that bridge the gap between academic learning and professional realities. By fostering self-awareness and practical skills, they enhance employability and prepare individuals for sustained career success.

SubQuestion No : 17

Q.17 Identify the tone of the passage.

Ans
- ✔ A. Cautionary
- ✘ B. Critical
- ✘ C. Inquisitive
- ✘ D. Enlightening

Question ID : **441009391596**
Option 1 ID : **4410091531929**
Option 2 ID : **4410091531928**
Option 3 ID : **4410091531927**
Option 4 ID : **4410091531930**
Status : **Answered**
Chosen Option : **D**

Section : **Quantitative Aptitude**

Q.1 In a class of 50 students, the average score in a test is 70. The difference between the highest and lowest marks is 100. If both students are excluded, the average drops by 2 marks. What were the highest marks?

Ans
- ✘ A. 167
- ✘ B. 170
- ✘ C. 169
- ✔ D. 168

Question ID : **441009398112**
Option 1 ID : **4410091557898**
Option 2 ID : **4410091557901**
Option 3 ID : **4410091557900**
Option 4 ID : **4410091557899**
Status : **Answered**
Chosen Option : **D**

Q.2 If $5^{2n+1} \div 25 = 125$, find the value of n.

Ans
- ✔ A. 2
- ✘ B. 5
- ✘ C. 3
- ✘ D. 7

Question ID : **441009461157**
Option 1 ID : **4410091803309**
Option 2 ID : **4410091803311**
Option 3 ID : **4410091803310**
Option 4 ID : **4410091803312**
Status : **Answered**
Chosen Option : **A**

Q.3 **The following numbers represent the runs scored by a batsman in 10 matches:**
56, 48, 56, 72, 48, 56, 40, 48, 60, 56
What is the mode of the data?

Ans
- ✘ A. 60
- ✔ B. 56
- ✘ C. 48
- ✘ D. 72

Question ID : **441009459996**
Option 1 ID : **4410091798622**
Option 2 ID : **4410091798620**
Option 3 ID : **4410091798621**
Option 4 ID : **4410091798623**
Status : **Answered**
Chosen Option : **B**

Q.4 Manish travels one – third of a journey at a speed of 30 km/h, the ne
and the final one – third at 90 km/h. What is his average speed for th

Ans
- ✔ A. 45
- ✘ B. 42
- ✘ C. 40
- ✘ D. 48

Question ID : **441009386207**
Option 1 ID : **4410091510452**
Option 2 ID : **4410091510451**
Option 3 ID : **4410091510450**
Option 4 ID : **4410091510453**
Status : **Answered**
Chosen Option : **A**

Q.5 A tank can be filled by Pipe A in 12 hours and emptied by Pipe B in 18 hours. If both the pipes are opened together, in how many hours will the tank be full?

Ans
✗ A. 32
✗ B. 30
✗ C. 42
✓ D. 36

Question ID : **441009460009**
Option 1 ID : **4410091798669**
Option 2 ID : **4410091798670**
Option 3 ID : **4410091798671**
Option 4 ID : **4410091798668**
Status : **Answered**
Chosen Option : **D**

Q.6 What is the arithmetic mean of first 50 even natural numbers?

Ans
✗ A. 50
✗ B. 52
✓ C. 51
✗ D. 56

Question ID : **441009459972**
Option 1 ID : **4410091798530**
Option 2 ID : **4410091798531**
Option 3 ID : **4410091798528**
Option 4 ID : **4410091798529**
Status : **Answered**
Chosen Option : **C**

Q.7 From the top of a tower 35 m high, the angles of depression of the top and bottom of a building are 60° and 45° respectively. Find the height (in m) of the building.

Ans
✗ A. $35\left(1+\frac{1}{\sqrt{3}}\right)$
✗ B. $35\sqrt{3}$
✓ C. $35\left(1-\frac{1}{\sqrt{3}}\right)$
✗ D. 35

Question ID : **441009461019**
Option 1 ID : **4410091802772**
Option 2 ID : **4410091802771**
Option 3 ID : **4410091802770**
Option 4 ID : **4410091802773**
Status : **Answered**
Chosen Option : **C**

Q.8 A bottle contains 60 ml of a juice solution that is 40% pure juice and 60% water. First, x ml of pure juice is added to the solution to reverse the original juice-to-water ratio. Then, y ml of pure water is added to reverse the ratio back to its original proportion. Determine the total amount of liquid added (x + y).

Ans
✗ A. 96 ml
✗ B. 90 ml
✗ C. 72 ml
✓ D. 75 ml

Question ID : **441009398248**
Option 1 ID : **4410091558441**
Option 2 ID : **4410091558440**
Option 3 ID : **4410091558439**
Option 4 ID : **4410091558438**
Status : **Answered**
Chosen Option : **D**

Q.9 Ramesh wrote a number as 2.356565656……..
What is the vulgar fraction equivalent of this decimal?

Ans
✗ A. $\frac{2353}{990}$
✗ B. $\frac{2233}{990}$
✗ C. $\frac{2523}{990}$
✓ D. $\frac{2333}{990}$

Question ID : **441009398516**
Option 1 ID : **4410091559528**
Option 2 ID : **4410091559527**
Option 3 ID : **4410091559529**
Option 4 ID : **4410091559526**
Status : **Answered**
Chosen Option : **D**

Q.10 Pipe P can fill a tank in 24 minutes, and Pipe Q can fill the same tank in 36 minutes. If both pipes are opened together, after how much time should Pipe Q be closed so that the tank is filled in exactly 18 minutes?

Ans
✗ A. 10 minutes
✓ B. 9 minutes
✗ C. 8 minutes
✗ D. 6 minutes

Question ID : **441009460016**
Option 1 ID : **4410091798698**
Option 2 ID : **4410091798697**
Option 3 ID : **4410091798699**
Option 4 ID : **4410091798696**
Status : **Answered**
Chosen Option : **B**

Q.11 Ravi spends 80% of his income. His income increases by 25% and his expenditure increases by 40%. As a result, his savings decrease by ₹714. What was his original income?

Ans
- ✔ A. ₹10,200
- ✘ B. ₹11,200
- ✘ C. ₹10,420
- ✘ D. ₹11,880

Question ID : **441009398692**
Option 1 ID : **4410091560222**
Option 2 ID : **4410091560223**
Option 3 ID : **4410091560225**
Option 4 ID : **4410091560224**
Status : **Answered**
Chosen Option : **A**

Q.12 The HCF and LCM of two positive integers are 6 and 180 respectively. How many such distinct unordered pairs of numbers are possible?

Ans
- ✔ A. 4
- ✘ B. 5
- ✘ C. 3
- ✘ D. 6

Question ID : **441009398523**
Option 1 ID : **4410091559551**
Option 2 ID : **4410091559552**
Option 3 ID : **4410091559550**
Option 4 ID : **4410091559553**
Status : **Not Answered**
Chosen Option : **--**

Q.13 The average age of a group of teachers is 42 years. Later, 5 new teachers with an average age of 38 years joined the group. As a result, the average age of the entire group becomes 41 years. How many teachers were there in the original group?

Ans
- ✘ A. 16
- ✔ B. 15
- ✘ C. 14
- ✘ D. 18

Question ID : **441009398203**
Option 1 ID : **4410091558260**
Option 2 ID : **4410091558258**
Option 3 ID : **4410091558259**
Option 4 ID : **4410091558261**
Status : **Answered**
Chosen Option : **B**

Q.14 If a is the mean proportional between x and y, and x=90, y=160, then what is the value of a?

Ans
✔ A. 120
✘ B. 126
✘ C. 125
✘ D. 124

Question ID : **441009462042**
Option 1 ID : **4410091806591**
Option 2 ID : **4410091806592**
Option 3 ID : **4410091806589**
Option 4 ID : **4410091806590**
Status : **Answered**
Chosen Option : **A**

Q.15 If the cost of 7 pencils is equal to the cost of 4 pens, and the cost of 9 then find the cost of 21 pencils.

Ans
✘ A. ₹134
✔ B. ₹144
✘ C. ₹124
✘ D. ₹154

Question ID : **441009384906**
Option 1 ID : **4410091505263**
Option 2 ID : **4410091505264**
Option 3 ID : **4410091505262**
Option 4 ID : **4410091505265**
Status : **Answered**
Chosen Option : **B**

Q.16 Priya trimmed a rectangular carpet twice. With the first trim, she reduced its area by 25%, and with the second trim, she reduced the remaining area by 20%. If the final area of the carpet is 96 cm², what was the original area?

Ans
✔ A. 160 cm^2
✘ B. 180 cm^2
✘ C. 164 cm^2
✘ D. 184 cm^2

Question ID : **441009398746**
Option 1 ID : **4410091560438**
Option 2 ID : **4410091560440**
Option 3 ID : **4410091560439**
Option 4 ID : **4410091560441**
Status : **Answered**
Chosen Option : **A**

Q.17 The curved surface area of a cylinder is 880 cm^2 and its height is 10 c
the cylinder (Use $\pi = \frac{22}{7}$).

Ans
✗ A. 6610 cm^3
✓ B. 6160 cm^3
✗ C. 6060 cm^3
✗ D. 6260 cm^3

Question ID : **441009389708**
Option 1 ID : **4410091524424**
Option 2 ID : **4410091524421**
Option 3 ID : **4410091524422**
Option 4 ID : **4410091524423**
Status : **Answered**
Chosen Option : **B**

Q.18 A shopkeeper marked the price of a bag at ₹4800. He gave three successive discounts of 15%, 10%, and 5%. Then he offered a further discount of ₹300. What is the final price paid by the customer?

Ans
✗ A. ₹3148.40
✓ B. ₹3188.40
✗ C. ₹3344
✗ D. ₹3248

Question ID : **441009399314**
Option 1 ID : **4410091562707**
Option 2 ID : **4410091562706**
Option 3 ID : **4410091562708**
Option 4 ID : **4410091562709**
Status : **Answered**
Chosen Option : **B**

Q.19 If the sum of the roots of the quadratic equation $x^2 + bx + c = 0$ is 11 and the product of the roots is 24, find the value of b + c.

Ans
✗ A. 16
✗ B. 17
✓ C. 13
✗ D. 15

Question ID : **441009460204**
Option 1 ID : **4410091799454**
Option 2 ID : **4410091799455**
Option 3 ID : **4410091799452**
Option 4 ID : **4410091799453**
Status : **Answered**
Chosen Option : **C**

Q.20 A principal of ₹5,000 amounts to ₹6,000 in 4 years at simple interest. What is the rate of interest per annum?

Ans
✗ A. 8%
✓ B. 5%
✗ C. 10%
✗ D. 12%

Question ID : **441009358934**
Option 1 ID : **4410091401740**
Option 2 ID : **4410091401739**
Option 3 ID : **4410091401738**
Option 4 ID : **4410091401741**
Status : **Answered**
Chosen Option : **B**

Q.21 Construct a quadratic equation whose both roots are 3 more than the roots of the equation:
$x^2 + 7x + 16 = 0$

Ans
✗ A. $x^2 + 3x + 4 = 0$
✗ B. $x^2 + 3x + 6 = 0$
✗ C. $x^2 + 5x + 4 = 0$
✓ D. $x^2 + x + 4 = 0$

Question ID : **441009460211**
Option 1 ID : **4410091799489**
Option 2 ID : **4410091799490**
Option 3 ID : **4410091799491**
Option 4 ID : **4410091799488**
Status : **Answered**
Chosen Option : **D**

Q.22 A toy is sold at ₹455 with a loss of 9%. At what price should it be sold to gain 9%?

Ans
✓ A. ₹545
✗ B. ₹560
✗ C. ₹568
✗ D. ₹580

Question ID : **441009399076**
Option 1 ID : **4410091561758**
Option 2 ID : **4410091561759**
Option 3 ID : **4410091561760**
Option 4 ID : **4410091561761**
Status : **Answered**
Chosen Option : **A**

Q.23 Ramesh travelled from City A to City B at an average speed of 72 kmph. He covered the first two-thirds of the distance in three-fourths of the total time. What was his average speed during the remaining part of the journey?

Ans
✗ A. 92 kmph
✗ B. 90 kmph
✗ C. 85 kmph
✓ D. 96 kmph

Question ID : **441009460058**
Option 1 ID : **4410091798861**
Option 2 ID : **4410091798862**
Option 3 ID : **4410091798863**
Option 4 ID : **4410091798860**
Status : **Answered**
Chosen Option : **D**

Q.24 Priya travelled from Town M to Town N at 60 kmph and returned at 40 kmph. What was her average speed for the entire trip?

Ans
✗ A. 42 kmph
✓ B. 48 kmph
✗ C. 50 kmph
✗ D. 45 kmph

Question ID : **441009460051**
Option 1 ID : **4410091798835**
Option 2 ID : **4410091798832**
Option 3 ID : **4410091798833**
Option 4 ID : **4410091798834**
Status : **Answered**
Chosen Option : **B**

Q.25 A car is marked at ₹6,50,800. The dealership offers a 23% discount for cash payments. What is the amount payable if you choose to pay in cash?

Ans
✗ A. ₹ 511816
✗ B. ₹ 501216
✗ C. ₹ 500116
✓ D. ₹ 501116

Question ID : **441009370751**
Option 1 ID : **4410091448907**
Option 2 ID : **4410091448905**
Option 3 ID : **4410091448906**
Option 4 ID : **4410091448908**
Status : **Answered**
Chosen Option : **D**

Q.26 Simplify the following expression:

$$\frac{1}{1+k^{y-x}+k^{z-x}}+\frac{1}{1+k^{x-y}+k^{z-y}}+\frac{1}{1+k^{x-z}+k^{y-z}}.$$

Ans
- ✗ A. 2
- ✗ B. k^{x+y+z}
- ✗ C. x+y+z
- ✓ D. 1

Question ID : **441009461172**
Option 1 ID : **4410091803370**
Option 2 ID : **4410091803371**
Option 3 ID : **4410091803372**
Option 4 ID : **4410091803369**
Status : **Answered**
Chosen Option : **D**

Q.27 If triangles ΔXYZ and ΔLMN are similar such that YZ = 5 cm, MN and the area of ΔXYZ = 100 cm^2, then find the area of ΔLMN.

Ans
- ✗ A. $160cm^2$
- ✗ B. $200cm^2$
- ✓ C. $256cm^2$
- ✗ D. $320cm^2$

Question ID : **441009387013**
Option 1 ID : **4410091513674**
Option 2 ID : **4410091513676**
Option 3 ID : **4410091513675**
Option 4 ID : **4410091513677**
Status : **Answered**
Chosen Option : **C**

Q.28 A circular garden has a radius of 28 meters. A sector-shaped pathway making an angle of 90° at the center is to be fenced along its boundary (the arc and two radii). If the cost of fencing is ₹48 per meter, find the total cost of fencing the pathway.

(Use $\pi = \frac{22}{7}$)

Ans
- ✗ A. ₹4,670
- ✓ B. ₹4,800
- ✗ C. ₹4,600
- ✗ D. ₹4,250

Question ID : **441009460948**
Option 1 ID : **4410091802496**
Option 2 ID : **4410091802493**
Option 3 ID : **4410091802494**
Option 4 ID : **4410091802495**
Status : **Answered**
Chosen Option : **B**

Q.29 If $x + \frac{1}{x} = 7$, then find the value of $x^2 + \frac{1}{x^2}$.

Ans
✗ A. 49
✓ B. 47
✗ C. 52
✗ D. 51

Question ID : **441009460147**
Option 1 ID : **4410091799221**
Option 2 ID : **4410091799220**
Option 3 ID : **4410091799223**
Option 4 ID : **4410091799222**
Status : **Answered**
Chosen Option : **B**

Q.30 Farmer A invests a certain sum of money at simple interest and Farmer B invests the same sum at compound interest for 2 years at the same rate of 10% per annum. If Farmer B receives ₹462 more as interest than Farmer A, find the sum invested by each farmer.

Ans
✗ A. ₹42600
✗ B. ₹46400
✗ C. ₹46210
✓ D. ₹46200

Question ID : **441009384115**
Option 1 ID : **4410091502112**
Option 2 ID : **4410091502113**
Option 3 ID : **4410091502110**
Option 4 ID : **4410091502111**
Status : **Not Answered**
Chosen Option : **--**

Q.31 In quadrilateral ABCD, AB = 8 cm, BC = 6 cm, CD = 12 cm. Both ∠ABC and ∠BCD are 90°.
Find the area of the quadrilateral ABCD.

Ans
✗ A. 62 cm^2
✓ B. 60 cm^2
✗ C. 64 cm^2
✗ D. 68 cm^2

Question ID : **441009460844**
Option 1 ID : **4410091802074**
Option 2 ID : **4410091802072**
Option 3 ID : **4410091802073**
Option 4 ID : **4410091802075**
Status : **Answered**
Chosen Option : **B**

Q.32 Meena and Rajiv started a business together. Meena invested ₹15,000 for 8 months, and Rajiv invested ₹12,000 for the whole year. If the total profit at the end of the year was ₹9,900, what was Rajiv's share in the profit?

Ans
- ✔ A. ₹5,400
- ✘ B. ₹5,200
- ✘ C. ₹4,800
- ✘ D. ₹5,000

Question ID : **441009459967**
Option 1 ID : **4410091798508**
Option 2 ID : **4410091798509**
Option 3 ID : **4410091798511**
Option 4 ID : **4410091798510**
Status : **Not Answered**
Chosen Option : **--**

Q.33 Ramesh bought 150 kg of wheat for ₹6800. Due to a sudden price drop in the market, he had to sell the entire quantity at a loss equal to the selling price of 20 kg of wheat. What was his selling price per kg?

Ans
- ✘ A. ₹42
- ✔ B. ₹40
- ✘ C. ₹45
- ✘ D. ₹44

Question ID : **441009399087**
Option 1 ID : **4410091561803**
Option 2 ID : **4410091561802**
Option 3 ID : **4410091561805**
Option 4 ID : **4410091561804**
Status : **Answered**
Chosen Option : **B**

Q.34 A woman's present age is three times that of her only daughter. When the woman was 29 years old, her only son, who is 4 years younger than the daughter, was born. What is the present age of her son?

Ans
- ✔ A. 8.5 years
- ✘ B. 10.5 years
- ✘ C. 9 years
- ✘ D. 8 years

Question ID : **441009460182**
Option 1 ID : **4410091799356**
Option 2 ID : **4410091799357**
Option 3 ID : **4410091799359**
Option 4 ID : **4410091799358**
Status : **Answered**
Chosen Option : **A**

Section : **Intellectual Potential Test**

Q.1 W,V,X,Y,Z and T live on six different floors of the same building. The lowermost floor in the building is numbered 1 , the floor above it, number 2 and so on till the topmost floor is numbered 6.
V lives on an odd-numbered floor above E. There are only two people between V and W.Y lives immediately below W.
X does not live on floor number 2 or 4. T lives on one of the floors below Y.

Who lives on floor number 3?

Ans
✔ A. V
✘ B. T
✘ C. W
✘ D. Y

Question ID : **441009402350**
Option 1 ID : **4410091574805**
Option 2 ID : **4410091574803**
Option 3 ID : **4410091574802**
Option 4 ID : **4410091574804**
Status : **Answered**
Chosen Option : **A**

Q.2 Based on the alphabetical order, three of the following four are alike in a certain way and thus form a group. Which is the one that does not belong to that group?
(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter cluster)

Ans
✘ A. RDP
✘ B. AMY
✘ C. MYK
✔ D. TFO

Question ID : **441009359998**
Option 1 ID : **4410091405991**
Option 2 ID : **4410091405992**
Option 3 ID : **4410091405993**
Option 4 ID : **4410091405990**
Status : **Not Answered**
Chosen Option : **--**

Q.3 Seven friends Aman, Rita, Shruti ,Kirti, Neha, Rahul and Gita are scheduled for vaccination on different days of a week from Monday to Sunday.
Kirti is scheduled on Monday. Neha is scheduled two days after Kirti. Shruti is scheduled before Rahul but after Rita.
Gita is not scheduled on Sunday. Only one person is scheduled between Rahul and Neha.
On which day is Shruti scheduled?

Ans
✔ A. Thursday
✘ B. Wednesday
✘ C. Friday
✘ D. Saturday

Question ID : **441009402367**
Option 1 ID : **4410091574859**
Option 2 ID : **4410091574858**
Option 3 ID : **4410091574860**
Option 4 ID : **4410091574861**
Status : **Answered**
Chosen Option : **C**

Q.4 What should come in place of ? in the given series based on the English alphabetical order?
CLU UDM MVE ENW ?

Ans
✗ A. FWO
✗ B. WOF
✗ C. FWE
✓ D. WFO

Question ID : **441009359094**
Option 1 ID : **4410091402361**
Option 2 ID : **4410091402359**
Option 3 ID : **4410091402360**
Option 4 ID : **4410091402358**
Status : **Answered**
Chosen Option : **D**

Q.5 Select the set in which the numbers are related in the same way as are the numbers of the following sets.
(NOTE : Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding / subtracting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed)
(10,20,90)
(14,15,87)

Ans
✓ A. (7,19,78)
✗ B. (24,19,99)
✗ C. (12,36,84)
✗ D. 27,17,72)

Question ID : **441009359452**
Option 1 ID : **4410091403799**
Option 2 ID : **4410091403801**
Option 3 ID : **4410091403802**
Option 4 ID : **4410091403800**
Status : **Not Answered**
Chosen Option : **--**

Q.6 Read the given statement(s) and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statement(s).
Statements: All parrot are pigeon. Some pigeon are sparrow.
Conclusions (I) : Some parrot are sparrow
Conclusions (II) : Some sparrow are pigeon

Ans
✗ A. Only conclusion I follows
✓ B. Only conclusion II follows
✗ C. Neither conclusion I nor II follow
✗ D. Both conclusion I and II follow

Question ID : **441009386203**
Option 1 ID : **4410091510434**
Option 2 ID : **4410091510435**
Option 3 ID : **4410091510437**
Option 4 ID : **4410091510436**
Status : **Answered**
Chosen Option : **B**

Q.7 If 2 is subtracted from each odd digit and 2 is added to each even digit in the number 472462934257 what will be the sum of the digits which are second from the left and second from the right?

Ans
✗ A. 9
✗ B. 10
✓ C. 8
✗ D. 7

Question ID : **441009359392**
Option 1 ID : **4410091403546**
Option 2 ID : **4410091403547**
Option 3 ID : **4410091403545**
Option 4 ID : **4410091403544**
Status : **Answered**
Chosen Option : **C**

Q.8 LITE is related to WTEP in a certain way based on the English alphabetical order. In the same way, DALW is related to OLWH. To which of the following options is KHSD related to, following the same logic?

Ans
✗ A. VODS
✓ B. VSDO
✗ C. VSDE
✗ D. VDSW

Question ID : **441009359068**
Option 1 ID : **4410091402260**
Option 2 ID : **4410091402258**
Option 3 ID : **4410091402259**
Option 4 ID : **4410091402261**
Status : **Answered**
Chosen Option : **B**

Q.9 In a certain code language,
A+ B means 'A is the son of B'
A - B means 'A is the brother of B'
A x B means 'A is the wife of B'
A ÷ B means ' A is the father of B'
Based on the above, how is H related to R if 'HxU-N÷T+R '?

Ans
✗ A. Husband's brother's daughter
✗ B. Brother's wife
✗ C. Brother's daughter
✓ D. Husband's brother's wife

Question ID : **441009358991**
Option 1 ID : **4410091401967**
Option 2 ID : **4410091401968**
Option 3 ID : **4410091401969**
Option 4 ID : **4410091401966**
Status : **Answered**
Chosen Option : **D**

Q.10 What should come in place of '?' in the given series?
23 46 69 92 115 ?

Ans
✗ A. 130
✗ B. 135
✓ C. 138
✗ D. 137

Question ID : **441009359424**
Option 1 ID : **4410091403679**
Option 2 ID : **4410091403680**
Option 3 ID : **4410091403682**
Option 4 ID : **4410091403681**
Status : **Answered**
Chosen Option : **C**

Q.11 VDSK is related to TAQH in a certain way based on the English alphabetical order. In the same way, PTEH is related to NQCE. To which of the following is YNBJ related to, following the same logic?

Ans
✓ A. WKZG
✗ B. XKXG
✗ C. VJYH
✗ D. VLYF

Question ID : **441009386855**
Option 1 ID : **4410091513038**
Option 2 ID : **4410091513041**
Option 3 ID : **4410091513039**
Option 4 ID : **4410091513040**
Status : **Answered**
Chosen Option : **A**

Q.12 Refer to the following letter, number, symbol series and answer the question
(Left) P P S E 2 L C S R \ E P ? 2 B D + 4 H $ D P (Right)
How many such letters are there each of which is immediately preceded by a number and also immediately followed by a symbol?

Ans
✗ A. Three
✗ B. Four
✓ C. One
✗ D. Two

Question ID : **441009360012**
Option 1 ID : **4410091406044**
Option 2 ID : **4410091406045**
Option 3 ID : **4410091406042**
Option 4 ID : **4410091406043**
Status : **Answered**
Chosen Option : **C**

Q.13 Refer to the following number, symbol series and answer the question that follow.
Counting to be done from left to right only.
(Left) * * 4 2 1 + \ + * 4 5 ^ > 8 / 5 # @ % ^ 6 (Right)
How many such symbols are there each of which is immediately preceded by another symbol and also immediately followed by a number?

Ans
✗ A. Two
✓ B. Four
✗ C. Three
✗ D. One

Question ID : **441009359135**
Option 1 ID : **4410091402525**
Option 2 ID : **4410091402527**
Option 3 ID : **4410091402526**
Option 4 ID : **4410091402524**
Status : **Answered**
Chosen Option : **B**

Q.14 In a certain code language, 'EWMB ' is coded as ' 65 ' and ' XCSI ' is coded as '77 '. What is the code for ' JTAV ' in the given code language?

Ans
✗ A. 63
✗ B. 60
✗ C. 78
✓ D. 75

Question ID : **441009385546**
Option 1 ID : **4410091507807**
Option 2 ID : **4410091507809**
Option 3 ID : **4410091507808**
Option 4 ID : **4410091507806**
Status : **Not Answered**
Chosen Option : **--**

Q.15 In a certain code language, ' YCQH ' is coded as '48 ' and ' SALK ' is coded as '58 '. What is the code for ' JUGX ' in the given code language?

Ans
✗ A. 52
✗ B. 44
✗ C. 32
✓ D. 39

Question ID : **441009385537**
Option 1 ID : **4410091507771**
Option 2 ID : **4410091507770**
Option 3 ID : **4410091507772**
Option 4 ID : **4410091507773**
Status : **Not Answered**
Chosen Option : **--**

Q.16 H, I, J, M, N, O and P are sitting in a straight line facing north.
Only M sits to the left of O. Only four people sit between M and P. Only N sits between H and J and H is not an immediate neighbor of P. Who sits at the extreme right end of the line?

Ans
✗ A. H
✗ B. P
✗ C. M
✓ D. I

Question ID : **441009358954**
Option 1 ID : **4410091401818**
Option 2 ID : **4410091401821**
Option 3 ID : **4410091401820**
Option 4 ID : **4410091401819**
Status : **Not Answered**
Chosen Option : **--**

Q.17 Select the set in which the numbers are related in the same way as are the numbers of the following sets.
(NOTE : Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding / subtracting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed)
(8,13,15)
(24,15,33)

Ans
✓ A. (9,3,6)
✗ B. (24,33,41)
✗ C. (13,24,23)
✗ D. (10,13,21)

Question ID : **441009359437**
Option 1 ID : **4410091403731**
Option 2 ID : **4410091403733**
Option 3 ID : **4410091403734**
Option 4 ID : **4410091403732**
Status : **Not Answered**
Chosen Option : **--**

Q.18 What should come in place of ? in the given series based on the English alphabetical order?
VAN NSF FKX XCP ?

Ans
✗ A. HUP
✗ B. PHU
✗ C. HPU
✓ D. PUH

Question ID : **441009359095**
Option 1 ID : **4410091402364**
Option 2 ID : **4410091402363**
Option 3 ID : **4410091402365**
Option 4 ID : **4410091402362**
Status : **Not Answered**
Chosen Option : **--**

Q.19 Refer to the following letter, number, symbol series and answer the question
(Left) Y 4 L * 6 F 3 & U P 5 H A 7 K 9 + C T 9 H S (Right)
How many such symbols are there each of which is immediately preceded by a letter and also immediately followed by a number?

Ans
✗ A. Three
✓ B. One
✗ C. Two
✗ D. Four

Question ID : **441009360011**
Option 1 ID : **4410091406040**
Option 2 ID : **4410091406038**
Option 3 ID : **4410091406039**
Option 4 ID : **4410091406041**
Status : **Not Answered**
Chosen Option : **--**

Q.20 If 1 is subtracted from each odd digit and 2 is added to each even digit in the number 433525434976 what will be the sum of the digits which are second from the left and second from the right?

Ans
✗ A. 7
✗ B. 6
✓ C. 8
✗ D. 5

Question ID : **441009359199**
Option 1 ID : **4410091402770**
Option 2 ID : **4410091402769**
Option 3 ID : **4410091402771**
Option 4 ID : **4410091402768**
Status : **Not Answered**
Chosen Option : **--**

Q.21 Town Q is to the west of Town R. Town K is to the south of Town Q. Town I is to the east of Town K. Town J is to the north of Town I. Town R is to the east of Town J. What is the position of Town K with respect to Town J?

Ans
✗ A. South East
✗ B. North
✗ C. North West
✓ D. South West

Question ID : **441009386927**
Option 1 ID : **4410091513330**
Option 2 ID : **4410091513332**
Option 3 ID : **4410091513331**
Option 4 ID : **4410091513333**
Status : **Not Answered**
Chosen Option : **--**

Q.22 If 'A' stands for '÷' , 'B' stands for 'x', 'C' stands for '+' and 'D' stands for '-' , what will be come in place of question mark '?' in the following equation?
9 B 8 C 7 D 50 A 10 = ?

Ans
✗ A. 75
✗ B. 72
✗ C. 73
✓ D. 74

Question ID : **441009359400**
Option 1 ID : **4410091403587**
Option 2 ID : **4410091403584**
Option 3 ID : **4410091403585**
Option 4 ID : **4410091403586**
Status : **Not Answered**
Chosen Option : **--**

Q.23 In a certain code language,
A+ B means 'A is the son of B'
A - B means 'A is the brother of B'
A x B means 'A is the wife of B'
A ÷ B means ' A is the father of B'
Based on the above, how is H related to R if 'H-UxN+T÷R '?

Ans
✗ A. Brother's brother
✗ B. Brother's wife's father
✓ C. Brother's wife's brother
✗ D. Brother

Question ID : **441009358989**
Option 1 ID : **4410091401961**
Option 2 ID : **4410091401959**
Option 3 ID : **4410091401958**
Option 4 ID : **4410091401960**
Status : **Not Answered**
Chosen Option : **--**

Q.24 Based on the English alphabetical order, three of the following four letter cluster pairs are alike in a certain way and thus form a group. Which is the one that does not belong to that group?
(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter cluster)

Ans
✗ A. FG-VF
✓ B. ST-SI
✗ C. XY-NX
✗ D. DE-TD

Question ID : **441009359118**
Option 1 ID : **4410091402451**
Option 2 ID : **4410091402449**
Option 3 ID : **4410091402448**
Option 4 ID : **4410091402450**
Status : **Not Answered**
Chosen Option : **--**

Q.25 In the following triad, each group of letters is related to the subsequent one following a certain logic. Select from the given options, the one which follows the same logic.
PINK - IPNK - KIPN
DOME - ODME - EODM

Ans
✗ A. HUNT - UHNT - UNTH
✓ B. FIRM - IFRM - MIFR
✗ C. NAME - ANME - EAMN
✗ D. LEAN - LAEN - NAEL

Question ID : **441009359059**
Option 1 ID : **4410091402225**
Option 2 ID : **4410091402222**
Option 3 ID : **4410091402224**
Option 4 ID : **4410091402223**
Status : **Not Answered**
Chosen Option : **--**

Q.26 Read the given statement(s) and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statement(s).
Statements: Some Queens are beautiful. All beautiful are tall.
Conclusions (I) : Some tall are beautiful.
Conclusions (II) : Some beautiful are not Queens.

Ans
✗ A. Only conclusion 2 follows
✗ B. Neither conclusion 1 nor 2 follows
✓ C. Only conclusion 1 follows
✗ D. Both conclusion 1 and 2 follow

Question ID : **441009386214**
Option 1 ID : **4410091510479**
Option 2 ID : **4410091510481**
Option 3 ID : **4410091510478**
Option 4 ID : **4410091510480**
Status : **Not Answered**
Chosen Option : **--**

Q.27 Seven boxes A,B,C, D,E,F and G are kept one over the other but not necessarily in the same order.
Only two boxes are kept between B and A. Only D is kept above F. No box is kept below A.E is kept at some place below G but at some place above C.
Which box is kept third above C?

Ans
✗ A. A
✓ B. G
✗ C. D
✗ D. F

Question ID : **441009358959**
Option 1 ID : **4410091401838**
Option 2 ID : **4410091401841**
Option 3 ID : **4410091401839**
Option 4 ID : **4410091401840**
Status : **Not Answered**
Chosen Option : **--**

Q.28 What will come in the place of '?' in the following equation, if '+' and '-' are interchanged and 'x' and '÷' are interchanged?
16 ÷ 14 - 15 + 10 x 5 = ?

Ans
✔ A. 237
✘ B. 236
✘ C. 235
✘ D. 238

Question ID : **441009359409**
Option 1 ID : **4410091403621**
Option 2 ID : **4410091403620**
Option 3 ID : **4410091403619**
Option 4 ID : **4410091403622**
Status : **Not Answered**
Chosen Option : **--**

Q.29 Select the set in which the numbers are related in the same way as are the numbers of the following sets.
(NOTE : Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding / subtracting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed)
(10,20,120)
(14,15,116)

Ans
✔ A. (7,19,104)
✘ B. (27,17,96)
✘ C. 42,16,112)
✘ D. 34,19,132)

Question ID : **441009359552**
Option 1 ID : **4410091404207**
Option 2 ID : **4410091404208**
Option 3 ID : **4410091404210**
Option 4 ID : **4410091404209**
Status : **Not Answered**
Chosen Option : **--**

Q.30 H, I, J, M, N, O and P are sitting in a straight line facing north.
Only two people sit to the left of H. Only three people sit between H and N. Only one person sits between N and J. P sits to the
immediate left of O. M is not an immediate neighbor of N.
How many people sit to the right of I?

Ans
✘ A. Two
✘ B. Four
✘ C. Three
✔ D. One

Question ID : **441009358948**
Option 1 ID : **4410091401795**
Option 2 ID : **4410091401797**
Option 3 ID : **4410091401796**
Option 4 ID : **4410091401794**
Status : **Not Answered**
Chosen Option : **--**

Q.31 Refer to the following letter, symbol series and answer the question.
Counting to be done from left to right only.
(Left) B H @ $ N E % # * $ X Z # M A T % X C M $ % Y (Right)
If all the symbols are dropped from the series, which of the following will be fourth from the right?

Ans
✗ A. Z
✗ B. A
✓ C. X
✗ D. M

Question ID : **441009386823**
Option 1 ID : **4410091512910**
Option 2 ID : **4410091512913**
Option 3 ID : **4410091512912**
Option 4 ID : **4410091512911**
Status : **Not Answered**
Chosen Option : **--**

Q.32 What should come in place of '?' in the given series?
150 125 100 75 50 ?

Ans
✓ A. 25
✗ B. 22
✗ C. 24
✗ D. 20

Question ID : **441009359421**
Option 1 ID : **4410091403670**
Option 2 ID : **4410091403668**
Option 3 ID : **4410091403669**
Option 4 ID : **4410091403667**
Status : **Not Answered**
Chosen Option : **--**

Q.33 Based on the alphabetical order, three of the following four are alike in a certain way and thus form a group. Which is the one that does not belong to that group?
(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter cluster)

Ans
✓ A. MXI
✗ B. YNC
✗ C. LAP
✗ D. ODS

Question ID : **441009359127**
Option 1 ID : **4410091402492**
Option 2 ID : **4410091402495**
Option 3 ID : **4410091402494**
Option 4 ID : **4410091402493**
Status : **Not Answered**
Chosen Option : **--**

Q.34 K,L,M,N,P,Q and R are sitting around a circular table facing the centre of the table. Only K sits between L and M. M sits third to the left of R. N sits to the immediate left of R. Q is not an immediate neighbor of M. Who sits second to the right of P?

Ans
- ✗ A. M
- ✗ B. K
- ✓ C. R
- ✗ D. N

Question ID : **441009358942**
Option 1 ID : **4410091401771**
Option 2 ID : **4410091401770**
Option 3 ID : **4410091401773**
Option 4 ID : **4410091401772**
Status : **Not Answered**
Chosen Option : **--**

Section : **Domain Knowledge**

Q.1 Labour law is also known as:

Ans
- ✗ A. Labour market code
- ✗ B. Human capital conduct
- ✗ C. Industrial workforce code
- ✓ D. Employment law

Question ID : **441009871806**
Option 1 ID : **4410093440395**
Option 2 ID : **4410093440396**
Option 3 ID : **4410093440397**
Option 4 ID : **4410093440394**
Status : **Not Answered**
Chosen Option : **--**

Q.2 In a free longitudinal vibration of a spring-mass system with no damping, the total mechanical energy _____.

Ans
- ✗ A. increases quadratically with time
- ✗ B. becomes zero at maximum displacement
- ✗ C. decreases exponentially with time
- ✓ D. remains constant

Question ID : **441009664938**
Option 1 ID : **4410092613780**
Option 2 ID : **4410092613782**
Option 3 ID : **4410092613779**
Option 4 ID : **4410092613781**
Status : **Answered**
Chosen Option : **D**

Q.3 Which of the following is the fastest memory?

Ans
✗ A. RAM
✗ B. Hard Disk
✓ C. Cache
✗ D. ROM

Question ID : **4410091152388**
Option 1 ID : **4410094544463**
Option 2 ID : **4410094544462**
Option 3 ID : **4410094544465**
Option 4 ID : **4410094544464**
Status : **Answered**
Chosen Option : **C**

Q.4 Which of the following statements is NOT correct about the moving average?

Ans
✗ A. As each new observation becomes available, a new mean is computed by adding the newest value and dropping the oldest value.
✗ B. Moving average of order k is the mean value of k consecutive observations.
✓ C. The number of data points in each average changes as time passes.
✗ D. The most recent moving average value provides a forecast for the next period.

Question ID : **441009605504**
Option 1 ID : **4410092377135**
Option 2 ID : **4410092377133**
Option 3 ID : **4410092377136**
Option 4 ID : **4410092377134**
Status : **Not Answered**
Chosen Option : **--**

Q.5 In the equation $VT^n = C$, the exponent n depends on:

Ans
✗ A. cutting fluid
✗ B. machine type
✗ C. power supply
✓ D. tool material

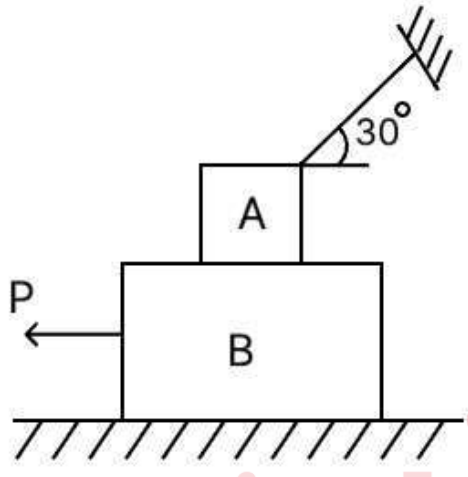
Question ID : **441009672554**
Option 1 ID : **4410092644338**
Option 2 ID : **4410092644340**
Option 3 ID : **4410092644341**
Option 4 ID : **4410092644339**
Status : **Answered**
Chosen Option : **D**

Q.6 **In one-dimensional steady-state heat conduction through a plane wall with constant thermal conductivity, the temperature distribution is:**

Ans
- ✗ A. logarithmic
- ✗ B. exponential
- ✗ C. parabolic
- ✓ D. linear

Question ID : **441009393922**
Option 1 ID : **4410091541184**
Option 2 ID : **4410091541181**
Option 3 ID : **4410091541182**
Option 4 ID : **4410091541183**
Status : **Answered**
Chosen Option : **D**

Q.7 **Calculate the force P required to move the block B shown in the given figure. Weight of block A and B are 1 kN and 2 kN, respectively, while coefficient of friction on each surface is 0.3.**



Ans
- ✗ A. 0.25 kN
- ✗ B. 0.85 kN
- ✓ C. 1.10 kN
- ✗ D. 0.6 kN

Question ID : **441009641317**
Option 1 ID : **4410092519407**
Option 2 ID : **4410092519408**
Option 3 ID : **4410092519410**
Option 4 ID : **4410092519409**
Status : **Not Answered**
Chosen Option : **--**

Q.8 If the clearance factor is unity, then the clearance volume of a reciprocating compressor _____.

Ans
✗ A. becomes equal to the total volume
✗ B. becomes more than stroke volume
✗ C. becomes less than stroke volume
✓ D. becomes equal to the stroke volume

Question ID : **441009460815**
Option 1 ID : **4410091801963**
Option 2 ID : **4410091801961**
Option 3 ID : **4410091801960**
Option 4 ID : **4410091801962**
Status : **Answered**
Chosen Option : **D**

Q.9 In which year was the famous Maternity Benefit Act enacted in India?

Ans
✗ A. 1956
✗ B. 1955
✗ C. 1972
✓ D. 1961

Question ID : **441009871846**
Option 1 ID : **4410093440551**
Option 2 ID : **4410093440553**
Option 3 ID : **4410093440552**
Option 4 ID : **4410093440550**
Status : **Not Answered**
Chosen Option : **--**

Q.10 It is assumed that in Economic Order Quantity (EOQ), the ordering cost per order:

Ans
✗ A. depends on the holding cost
✗ B. depends on the frequency and cost of the order
✗ C. depends on the size of the order
✓ D. remains constant

Question ID : **441009605572**
Option 1 ID : **4410092377407**
Option 2 ID : **4410092377408**
Option 3 ID : **4410092377405**
Option 4 ID : **4410092377406**
Status : **Not Answered**
Chosen Option : **--**

Q.11 In a counter flow heat exchanger, effectiveness increases when:

Ans
✔ A. NTU increases
✘ B. flow is turbulent only
✘ C. heat capacity ratio is very low
✘ D. NTU is very low

Question ID : **441009605574**
Option 1 ID : **4410092377415**
Option 2 ID : **4410092377416**
Option 3 ID : **4410092377413**
Option 4 ID : **4410092377414**
Status : **Answered**
Chosen Option : **D**

Q.12 Which of the following describes a hardware component in computer systems?

Ans
✘ A. Operating System
✘ B. Antivirus
✘ C. Word Processor
✔ D. Motherboard

Question ID : **4410091152419**
Option 1 ID : **4410094544586**
Option 2 ID : **4410094544587**
Option 3 ID : **4410094544589**
Option 4 ID : **4410094544588**
Status : **Answered**
Chosen Option : **D**

Q.13 A machine component is subjected to fluctuating stress that varies from 40 to 100 N/mm^2. The corrected endurance limit stress for the machine component is 150 N/mm^2. The ultimate tensile strength and yield strength of the material are 600 and 350 N/mm^2, respectively. What will be the factor of safety using the Soderberg line?

Ans
✘ A. 4.5
✘ B. 1.5
✘ C. 3.5
✔ D. 2.5

Question ID : **441009397573**
Option 1 ID : **4410091555731**
Option 2 ID : **4410091555728**
Option 3 ID : **4410091555730**
Option 4 ID : **4410091555729**
Status : **Answered**
Chosen Option : **D**

Q.14 What does engineering professional ethics mean?

Ans
✗ A. Avoiding teamwork
✓ B. Following moral principles in professional practice
✗ C. Obeying orders from seniors
✗ D. Following personal interests

Question ID : **4410091151763**
Option 1 ID : **4410094541991**
Option 2 ID : **4410094541990**
Option 3 ID : **4410094541989**
Option 4 ID : **4410094541988**
Status : **Answered**
Chosen Option : **B**

Q.15 Which of the following formula is correct about radius of curvature (R

Where: R = Radius of curvature of the bent sheet/beam

E = Young's modulus of the material

I = Moment of inertia of the cross − section

M = Bending moment

Ans
✗ A. $R = \frac{M.I}{E}$
✗ B. $R = \frac{M}{E.I}$
✗ C. $R = \frac{M}{I}$
✓ D. $R = \frac{E.I}{M}$

Question ID : **441009802207**
Option 1 ID : **4410093162938**
Option 2 ID : **4410093162937**
Option 3 ID : **4410093162939**
Option 4 ID : **4410093162936**
Status : **Answered**
Chosen Option : **D**

Q.16 If the evaporator and condenser pressure in the reciprocating compressor are 4 bar and 16 bar, respectively, then what will the inter-cooler pressure be?

Ans
✗ A. 20 bar
✗ B. 12 bar
✓ C. 8 bar
✗ D. 4 bar

Question ID : **441009460956**
Option 1 ID : **4410091802521**
Option 2 ID : **4410091802524**
Option 3 ID : **4410091802523**
Option 4 ID : **4410091802522**
Status : **Answered**
Chosen Option : **C**

Q.17 A wall of thickness L and thermal conductivity k has a steady heat flow Q through it. The temperature drop across the wall is ΔT. What is the expression for the rate of heat conduction per unit area?

Ans
✗ A. $q = kL\Delta T$
✗ B. $q = \frac{\Delta T}{kL}$
✓ C. $q = \frac{k\Delta T}{L}$
✗ D. $q = \frac{kL}{\Delta T}$

Question ID : **441009394368**
Option 1 ID : **4410091542973**
Option 2 ID : **4410091542971**
Option 3 ID : **4410091542972**
Option 4 ID : **4410091542970**
Status : **Answered**
Chosen Option : **C**

Q.18 In programming, what is a variable?

Ans
✗ A. A fixed value
✓ B. A storage location identified by a name
✗ C. A type of loop
✗ D. An operator

Question ID : **4410091153463**
Option 1 ID : **4410094548689**
Option 2 ID : **4410094548691**
Option 3 ID : **4410094548690**
Option 4 ID : **4410094548692**
Status : **Answered**
Chosen Option : **B**

Q.19 Which of the following is NOT true about deforestation?

Ans
✓ A. Deforestation is taking place only in developing countries.
✗ B. Clearing of forest for agriculture causes deforestation.
✗ C. Population explosion is one of the reasons for deforestation.
✗ D. Industrialisation and urban expansion are also responsible for deforestation.

Question ID : **441009643360**
Option 1 ID : **4410092527628**
Option 2 ID : **4410092527627**
Option 3 ID : **4410092527626**
Option 4 ID : **4410092527629**
Status : **Answered**
Chosen Option : **A**

Q.20 Which of the following purposes of clearance volume is INCORRECT?

Ans
- ✗ A. Prevents damage to moving components
- ✗ B. Reduces noise and vibration during operation
- ✓ C. The volumetric efficiency is between 90% to 95% because of the presence of clearance volume
- ✗ D. Gives mechanical freedom to the moving parts

Question ID : **441009460823**
Option 1 ID : **4410091801986**
Option 2 ID : **4410091801985**
Option 3 ID : **4410091801987**
Option 4 ID : **4410091801984**
Status : **Answered**
Chosen Option : **C**

Q.21 A simply supported beam of length L = 2 m, mass per unit length m = 10 kg/m and flexural rigidity EI = 2000Nm^2 undergoes free transverse vibration. What is the first natural frequency ω_1 in rad/s? (Use $\pi^2 \approx 10$, and $\sqrt{200} \approx 14$)

Ans
- ✗ A. 25 rad/s
- ✓ B. 35 rad/s
- ✗ C. 7 rad/s
- ✗ D. 14 rad/s

Question ID : **441009665252**
Option 1 ID : **4410092615045**
Option 2 ID : **4410092615046**
Option 3 ID : **4410092615043**
Option 4 ID : **4410092615044**
Status : **Answered**
Chosen Option : **D**

Q.22 Which principle allows the conversion of a dynamic force problem into an equivalent static equilibrium problem by introducing inertia forces and couples in mechanism analysis?

Ans
- ✗ A. Grashof's law for linkages
- ✗ B. Instantaneous centre method
- ✓ C. D'Alembert's principle of dynamics
- ✗ D. Kennedy's theorem on centres

Question ID : **441009550253**
Option 1 ID : **4410092156389**
Option 2 ID : **4410092156392**
Option 3 ID : **4410092156391**
Option 4 ID : **4410092156390**
Status : **Answered**
Chosen Option : **C**

Q.23 In material structure, a dislocation is a type of:

Ans
✗ A. volume defect
✗ B. point defect
✗ C. surface defect
✓ D. line defect

Question ID : **4410091144792**
Option 1 ID : **4410094514127**
Option 2 ID : **4410094514124**
Option 3 ID : **4410094514126**
Option 4 ID : **4410094514125**
Status : **Answered**
Chosen Option : **B**

Q.24 Which of the following best defines tolerance in the context of engineering drawing and manufacturing?

Ans
✓ A. The permissible variation in the dimension of a part, ensuring proper function and interchangeability.
✗ B. The statistical mean of the actual measurements taken from a batch of components.
✗ C. The range of temperature a material can withstand without deforming.
✗ D. The maximum load a component can carry before failure.

Question ID : **441009672565**
Option 1 ID : **4410092644383**
Option 2 ID : **4410092644385**
Option 3 ID : **4410092644382**
Option 4 ID : **4410092644384**
Status : **Answered**
Chosen Option : **A**

Q.25 Which of the following components of a reciprocating compressor transfers the linear motion of the piston to the rotational motion of the crankshaft?

Ans
✗ A. Frame (Crankcase)
✗ B. Valves
✓ C. Connecting rod
✗ D. Crankshaft

Question ID : **441009460813**
Option 1 ID : **4410091801939**
Option 2 ID : **4410091801937**
Option 3 ID : **4410091801938**
Option 4 ID : **4410091801936**
Status : **Answered**
Chosen Option : **C**

Q.26 What is a crystalline material's atomic configuration referred to as?

Ans
- ✗ A. Molecule
- ✓ B. Crystal lattice
- ✗ C. Phase
- ✗ D. Microstructure

Question ID : **4410091144466**
Option 1 ID : **4410094512823**
Option 2 ID : **4410094512821**
Option 3 ID : **4410094512822**
Option 4 ID : **4410094512820**
Status : **Answered**
Chosen Option : **D**

Q.27 In viscus damping, a damper offers resistance 0.05 N at constant velocity 0.04 m/s. Determine viscus damping coefficient in N.s/m.

Ans
- ✗ A. 0.09
- ✓ B. 1.25
- ✗ C. 0.8
- ✗ D. 0.002

Question ID : **441009664865**
Option 1 ID : **4410092613486**
Option 2 ID : **4410092613484**
Option 3 ID : **4410092613483**
Option 4 ID : **4410092613485**
Status : **Answered**
Chosen Option : **B**

Q.28 What is the loss of energy in the primary of the transformer due to the reversal of magnetism in the iron core called?

Ans
- ✓ A. Hysteresis loss
- ✗ B. Eddy current loss
- ✗ C. Copper loss
- ✗ D. Dielectric loss

Question ID : **441009641335**
Option 1 ID : **4410092519477**
Option 2 ID : **4410092519475**
Option 3 ID : **4410092519476**
Option 4 ID : **4410092519478**
Status : **Answered**
Chosen Option : **A**

Q.29 A CNC milling program uses the following line:

G17 G02 X50 Y50 I10 J0

Assuming the current position is at X40 Y50, which of the following best describes the tool motion?

Ans
✗ A. Counter-clockwise circular interpolation in the XY plane with centre at X50, Y60
✗ B. Clockwise circular interpolation in the XZ plane with 10 mm radius
✗ C. Clockwise circular interpolation in the XY plane with center at X50, Y50, and radius of 10 mm
✓ D. Clockwise circular interpolation in the XY plane with center at X50, Y50

Question ID : **441009673862**
Option 1 ID : **4410092649564**
Option 2 ID : **4410092649563**
Option 3 ID : **4410092649566**
Option 4 ID : **4410092649565**
Status : **Answered**
Chosen Option : **C**

Q.30 For a laminar boundary layer over a flat plate, the thickness δ at a distance x from the leading edge is:

Ans
✗ A. $\delta \propto x^{2/3}$
✗ B. $\delta \propto x^{3/4}$
✓ C. $\delta \propto x^{1/2}$
✗ D. $\delta \propto x$

Question ID : **441009656930**
Option 1 ID : **4410092582068**
Option 2 ID : **4410092582069**
Option 3 ID : **4410092582066**
Option 4 ID : **4410092582067**
Status : **Answered**
Chosen Option : **C**

Q.31 Which of the following forecasting methods is used to a form a weighted average of past observations to smooth short-term fluctuations?

Ans
✗ A. Logarithmic average method
✓ B. Exponentially weighted moving average method
✗ C. Simple moving average method
✗ D. Fourier averaging method

Question ID : **441009605522**
Option 1 ID : **4410092377207**
Option 2 ID : **4410092377205**
Option 3 ID : **4410092377206**
Option 4 ID : **4410092377208**
Status : **Not Answered**
Chosen Option : **--**

Q.32 What does Plagiarism in engineering refer to?

Ans
✗ A. Building machines quickly
✓ B. Copying another's work or ideas without credit
✗ C. Testing machines without permission
✗ D. Selling old designs

Question ID : **4410091151770**
Option 1 ID : **4410094542018**
Option 2 ID : **4410094542017**
Option 3 ID : **4410094542016**
Option 4 ID : **4410094542019**
Status : **Answered**
Chosen Option : **B**

Q.33 The dynamic load-carrying capacity of a bearing is defined as the radial load in radial bearings that can be carried for a minimum life of what revolutions?

Ans
✗ A. 10 million
✓ B. 1 million
✗ C. 100 million
✗ D. 0.1 million

Question ID : **441009398209**
Option 1 ID : **4410091558284**
Option 2 ID : **4410091558283**
Option 3 ID : **4410091558285**
Option 4 ID : **4410091558282**
Status : **Answered**
Chosen Option : **B**

Q.34 A fluid with density ρ and dynamic viscosity μ flows through a pipe of diameter D. If a new physical quantity is defined as: $\Pi = \mu / \rho D$, then the dimensional formula of Π is:

Ans
✓ A. $L\,T^{-1}$
✗ B. T^{-1}
✗ C. $L^{2}T^{-1}$
✗ D. LT^{-2}

Question ID : **441009663355**
Option 1 ID : **4410092607469**
Option 2 ID : **4410092607470**
Option 3 ID : **4410092607468**
Option 4 ID : **4410092607467**
Status : **Answered**
Chosen Option : **A**

Q.35 In which of the following control methods for reciprocating compressors a check valve is provided in the system in order to isolate the inactive cylinders from the active cylinders?

Ans
- ✔ A. By cylinder by-pass system
- ✘ B. By using multi-speed motor
- ✘ C. By using multiple compressors
- ✘ D. By suction valve lift control

Question ID : **441009460860**
Option 1 ID : **4410091802138**
Option 2 ID : **4410091802135**
Option 3 ID : **4410091802137**
Option 4 ID : **4410091802136**
Status : **Answered**
Chosen Option : **A**

Q.36 Determine the mass moment of inertia of three identical rods (each of mass m and length l) arranged to form an equilateral triangle, about an axis perpendicular to the plane of the triangle and passing through the centroid of the triangle.

Ans
- ✔ A. $\frac{ml^2}{2}$
- ✘ B. $\frac{ml^2}{12}$
- ✘ C. $\frac{ml^2}{6}$
- ✘ D. $\frac{ml^2}{3}$

Question ID : **441009640773**
Option 1 ID : **4410092517240**
Option 2 ID : **4410092517241**
Option 3 ID : **4410092517239**
Option 4 ID : **4410092517242**
Status : **Answered**
Chosen Option : **A**

Q.37 The Coriolis component of acceleration arises when a slider moves radially on a rotating link. Which of the following correctly gives the magnitude of this acceleration?

Ans
- ✘ A. $\omega \cdot v$
- ✘ B. $\alpha \cdot r$
- ✘ C. $\omega^2 \cdot r$
- ✔ D. $2 \cdot \omega \cdot v$

Question ID : **441009550219**
Option 1 ID : **4410092156258**
Option 2 ID : **4410092156256**
Option 3 ID : **4410092156255**
Option 4 ID : **4410092156257**
Status : **Answered**
Chosen Option : **D**

Q.38 Given the Blasius solution, what is the approximate boundary layer thickness at x = 1 m from leading edge ($Re_x = 10^5$)?

Ans
✗ A. 5 mm
✗ B. 50 mm
✓ C. 16 mm
✗ D. 25 mm

Question ID : **441009657309**
Option 1 ID : **4410092583610**
Option 2 ID : **4410092583613**
Option 3 ID : **4410092583611**
Option 4 ID : **4410092583612**
Status : **Answered**
Chosen Option : **C**

Q.39 Which of the following best defines 'heat' in thermodynamics?

Ans
✗ A. Energy stored in a body
✓ B. Energy transferred due to temperature difference
✗ C. Energy associated with pressure
✗ D. Mechanical energy

Question ID : **441009394485**
Option 1 ID : **4410091543442**
Option 2 ID : **4410091543443**
Option 3 ID : **4410091543444**
Option 4 ID : **4410091543445**
Status : **Answered**
Chosen Option : **B**

Q.40 Kirchhoff's Voltage Law (KVL) is applicable when:

Ans
✗ A. the circuit contains no resistors
✗ B. only one voltage source is present in the circuit
✗ C. the circuit is open only
✓ D. there is one or more voltage source in a closed loop

Question ID : **441009620049**
Option 1 ID : **4410092434319**
Option 2 ID : **4410092434317**
Option 3 ID : **4410092434318**
Option 4 ID : **4410092434320**
Status : **Not Answered**
Chosen Option : **--**

Q.41 In which of the following ways can the environment NOT be conserved?

Ans
✓ A. Encouraging dependence on fossil fuels.
✗ B. Stopping deforestation and protecting forest cover.
✗ C. Using natural non-renewable resources efficiently and responsibly.
✗ D. Adopting effective waste management techniques.

Question ID : **441009643434**
Option 1 ID : **4410092527929**
Option 2 ID : **4410092527926**
Option 3 ID : **4410092527927**
Option 4 ID : **4410092527928**
Status : **Answered**
Chosen Option : **A**

Q.42 A black body at 500 K emits radiation. If the temperature increases to 1000 K, the emitted energy increases by a factor of:

Ans
✗ A. 2
✗ B. 8
✓ C. 16
✗ D. 4

Question ID : **441009563055**
Option 1 ID : **4410092207354**
Option 2 ID : **4410092207356**
Option 3 ID : **4410092207357**
Option 4 ID : **4410092207355**
Status : **Answered**
Chosen Option : **C**

Q.43 Section modulus of circular section is _____.

Ans
✗ A. $\frac{\pi d^4}{32}$
✓ B. $\frac{\pi d^3}{32}$
✗ C. $\frac{\pi d^3}{64}$
✗ D. $\frac{\pi d^4}{64}$

Question ID : **441009640704**
Option 1 ID : **4410092516967**
Option 2 ID : **4410092516968**
Option 3 ID : **4410092516970**
Option 4 ID : **4410092516969**
Status : **Answered**
Chosen Option : **B**

Q.44 Air at 30°C flows over a flat plate maintained at 90°C. If the convective heat transfer coefficient is 25 W/m²·K, what is the heat flux to the surface?

Ans
✗ A. 1250 W/m^2
✗ B. 1800 W/m^2
✓ C. 1500 W/m^2
✗ D. 600 W/m^2

Question ID : **441009394416**
Option 1 ID : **4410091543167**
Option 2 ID : **4410091543169**
Option 3 ID : **4410091543168**
Option 4 ID : **4410091543166**
Status : **Answered**
Chosen Option : **C**

Q.45 A straight line joining endurance limit (S_e) on the ordinate to yield strength or yield point (S_{yt}) on the abscissa is defined by which of the following terms?

Ans
✓ A. Soderberg Line
✗ B. S-N Curve Line
✗ C. Goodman Line
✗ D. Gerber Line

Question ID : **441009397557**
Option 1 ID : **4410091555664**
Option 2 ID : **4410091555667**
Option 3 ID : **4410091555665**
Option 4 ID : **4410091555666**
Status : **Answered**
Chosen Option : **A**

Q.46 In the dynamic analysis of a four-link mechanism, why is the inertia force F_i replaced with an equivalent offset inertia force in the procedure?

Ans
✗ A. To eliminate the inertia couple and focus only on linear inertia effects
✓ B. To convert dynamic analysis into an equivalent static force system for easier computation
✗ C. To include the effect of angular acceleration and eliminate the need for velocity diagrams
✗ D. To remove the need for acceleration diagrams and simplify link mass estimation

Question ID : **441009550263**
Option 1 ID : **4410092156431**
Option 2 ID : **4410092156429**
Option 3 ID : **4410092156428**
Option 4 ID : **4410092156430**
Status : **Not Answered**
Chosen Option : **--**

Q.47 The non-negative variables which are added in the left hand side (LHS) of the constraints to convert equality into the standard form of simplex table is known as:

Ans
- ✔ A. slack variables
- ✘ B. artificial variables
- ✘ C. basic feasible solution
- ✘ D. surplus variables

Question ID : **441009605484**
Option 1 ID : **4410092377054**
Option 2 ID : **4410092377056**
Option 3 ID : **4410092377055**
Option 4 ID : **4410092377053**
Status : **Not Answered**
Chosen Option : **--**

Q.48 Expression for time of flight (T) of a projectile in a horizontal plane is _____.

Ans
- ✘ A. $T = \frac{u \sin 2\theta}{2g}$
- ✘ B. $T = \frac{u \sin \theta}{2g}$
- ✘ C. $T = \frac{u \sin 2\theta}{g}$
- ✔ D. $T = \frac{2u \sin \theta}{g}$

Question ID : **441009641095**
Option 1 ID : **4410092518522**
Option 2 ID : **4410092518519**
Option 3 ID : **4410092518521**
Option 4 ID : **4410092518520**
Status : **Not Attempted and Marked For Review**
Chosen Option : **--**

Q.49 A square beam 20 mm × 20 mm in section and 2 m long is supported at the ends. The beam fails when a point load of 400 N is applied at the centre of the beam. What is the value of flexural stress in the beam?

Ans
- ✘ A. $250 \frac{N}{mm^2}$
- ✔ B. $150 \frac{N}{mm^2}$
- ✘ C. $200 \frac{N}{mm^2}$
- ✘ D. $100 \frac{N}{mm^2}$

Question ID : **441009801574**
Option 1 ID : **4410093160408**
Option 2 ID : **4410093160405**
Option 3 ID : **4410093160407**
Option 4 ID : **4410093160406**
Status : **Answered**
Chosen Option : **B**

Q.50 A reverted gear train consists of four gears with teeth $T_1 = 20$, $T_2 = 40$, $T_3 = 30$, and T_4 to be determined. If gear 1 rotates at $N_1 = 1200$ rpm and gear 4 rotates at $N_4 = 400$ rpm, what should be the number of teeth on gear 4 for the train to maintain proper function?

Ans
- ✗ A. 75
- ✓ B. 45
- ✗ C. 90
- ✗ D. 60

Question ID : **441009562532**
Option 1 ID : **4410092205152**
Option 2 ID : **4410092205150**
Option 3 ID : **4410092205153**
Option 4 ID : **4410092205151**
Status : **Answered**
Chosen Option : **D**

Q.51 Which of the following conditions leads to the appearance of the Coriolis component of acceleration in a mechanism?

Ans
- ✗ A. When a link rotates about a fixed point
- ✗ B. When a crank rotates at uniform angular velocity
- ✗ C. When a link translates with constant speed
- ✓ D. When a slider moves along a rotating link

Question ID : **441009550197**
Option 1 ID : **4410092156169**
Option 2 ID : **4410092156172**
Option 3 ID : **4410092156171**
Option 4 ID : **4410092156170**
Status : **Answered**
Chosen Option : **D**

Q.52 According to Kirchhoff's current law, the algebraic sum of currents entering and leaving any point in a circuit must be equal to:

Ans
- ✓ A. 0
- ✗ B. −1
- ✗ C. ∞
- ✗ D. +1

Question ID : **441009620005**
Option 1 ID : **4410092434141**
Option 2 ID : **4410092434142**
Option 3 ID : **4410092434143**
Option 4 ID : **4410092434144**
Status : **Answered**
Chosen Option : **A**

Q.53 The order of momentum thickness (θ), displacement thickness (δ^*) and energy thickness (δ_e) is:

Ans
✗ A. $\theta<\delta^*<\delta_e$
✗ B. $\delta^*<\delta_e<\theta$
✗ C. $\delta_e<\delta^*<\theta$
✓ D. $\theta<\delta_e<\delta^*$

Question ID : **441009657100**
Option 1 ID : **4410092582763**
Option 2 ID : **4410092582764**
Option 3 ID : **4410092582762**
Option 4 ID : **4410092582765**
Status : **Answered**
Chosen Option : **D**

Q.54 How can eddy current loss in a transformer core be reduced?

Ans
✗ A. By using a core made of an insulator
✗ B. By increasing the frequency of the current
✗ C. By making the core into thick flat sections
✓ D. By making the core into thin, laminated sections

Question ID : **441009629004**
Option 1 ID : **4410092470167**
Option 2 ID : **4410092470168**
Option 3 ID : **4410092470170**
Option 4 ID : **4410092470169**
Status : **Not Answered**
Chosen Option : **--**

Q.55 Which of the following equations is used to determine the stress and strain relation in the plastic region of the stress-strain curve of a metal?

Ans
✓ A. Power law
✗ B. Hooke's law
✗ C. Pascal law
✗ D. Boyle's law

Question ID : **441009753533**
Option 1 ID : **4410092968115**
Option 2 ID : **4410092968113**
Option 3 ID : **4410092968114**
Option 4 ID : **4410092968116**
Status : **Not Answered**
Chosen Option : **--**

Q.56 Which of the following domains is NOT typically covered under labour laws?

Ans
- ✗ A. Industrial relations
- ✓ B. Intellectual property
- ✗ C. Employment standards
- ✗ D. Workplace health and safety

Question ID : **441009871822**
Option 1 ID : **4410093440458**
Option 2 ID : **4410093440461**
Option 3 ID : **4410093440459**
Option 4 ID : **4410093440460**
Status : **Answered**
Chosen Option : **B**

Q.57 Which of the following is NOT the correct reason for the termination of a contract?

Ans
- ✓ A. Compliance with the contract
- ✗ B. Dispensing the promise
- ✗ C. Impossibility of performance
- ✗ D. Breach of contract

Question ID : **441009871879**
Option 1 ID : **4410093440677**
Option 2 ID : **4410093440676**
Option 3 ID : **4410093440674**
Option 4 ID : **4410093440675**
Status : **Answered**
Chosen Option : **A**

Q.58 A box of mass 10 kg travelling at 2 m/s impact with a spring which compresses 1 mm per Newton. Determine the maximum compression in the spring.

Ans
- ✗ A. 100 mm
- ✓ B. 200 mm
- ✗ C. 400 mm
- ✗ D. 50 mm

Question ID : **441009641176**
Option 1 ID : **4410092518839**
Option 2 ID : **4410092518840**
Option 3 ID : **4410092518842**
Option 4 ID : **4410092518841**
Status : **Not Attempted and Marked For Review**
Chosen Option : **--**

Q.59 Which of the following advantages of multi-stage compression over single stage compression is INCORRECT?

Ans
✗ A. It reduces the leakage loss considerably.

✗ B. It provides effective lubrication because of lower temperature range.

✓ C. It gives non-uniform torque and hence a smaller size flywheel is required.

✗ D. It improves the volumetric efficiency for the given pressure ratio.

Question ID : **441009460827**
Option 1 ID : **4410091802002**
Option 2 ID : **4410091802000**
Option 3 ID : **4410091802001**
Option 4 ID : **4410091802003**
Status : **Not Answered**
Chosen Option : **--**

Q.60 Which of the following construction cost estimates is known as Rough Order of Magnitude (ROM)?

Ans
✗ A. Parametric cost estimate

✓ B. Preliminary cost estimate

✗ C. Detailed cost estimate

✗ D. Definitive bid cost estimate

Question ID : **441009718916**
Option 1 ID : **4410092829380**
Option 2 ID : **4410092829377**
Option 3 ID : **4410092829379**
Option 4 ID : **4410092829378**
Status : **Answered**
Chosen Option : **B**

Q.61 Which of the following statements best explains the meaning of the designation H8/f7 according to the Indian Standard (IS 919) system of limits and fits?

Ans
✗ A. It indicates a shaft basis system with H8 shaft and f7 hole, resulting in a clearance fit.

✗ B. It is a hole basis system where the shaft is larger than the hole, ensuring an interference fit.

✓ C. It denotes a hole basis system with a medium tolerance hole and a shaft tolerance zone below the hole, typically resulting in a clearance fit.

✗ D. It represents a transition fit with equal probability of clearance and interference, used in precision assemblies.

Question ID : **441009672578**
Option 1 ID : **4410092644434**
Option 2 ID : **4410092644436**
Option 3 ID : **4410092644435**
Option 4 ID : **4410092644437**
Status : **Not Answered**
Chosen Option : **--**

Q.62 Which of the following is NOT an objective of environmental conservation?

Ans
- ✗ A. Ensuring access to clean water and air
- ✗ B. Combating climate change
- ✗ C. Protecting biodiversity
- ✓ D. Promoting industrialisation without environmental regulation

Question ID : **441009643403**
Option 1 ID : **4410092527800**
Option 2 ID : **4410092527799**
Option 3 ID : **4410092527798**
Option 4 ID : **4410092527801**
Status : **Answered**
Chosen Option : **D**

Q.63 In a turbulent boundary layer, the shape factor H = δ*/θ typically:

Ans
- ✗ A. s independent of Reynolds number
- ✗ B. is only affected by the surface roughness
- ✓ C. decreases with increasing Reynolds number
- ✗ D. increases with increasing Reynolds number

Question ID : **441009656979**
Option 1 ID : **4410092582272**
Option 2 ID : **4410092582273**
Option 3 ID : **4410092582270**
Option 4 ID : **4410092582271**
Status : **Answered**
Chosen Option : **A**

Q.64 Cloud databases are typically:

Ans
- ✗ A. stored only on paper
- ✗ B. not accessible via the internet
- ✓ C. hosted on cloud platforms and accessible online
- ✗ D. used only for government purposes

Question ID : **4410091153412**
Option 1 ID : **4410094548493**
Option 2 ID : **4410094548494**
Option 3 ID : **4410094548495**
Option 4 ID : **4410094548496**
Status : **Answered**
Chosen Option : **C**

Q.65 A point on a disc of radius 500 mm undergoes uniform linear acceleration of 4 m/s^2. Calculate angular acceleration of the disc.

Ans
✗ A. 16 rad/s^2
✓ B. 8 rad/s^2
✗ C. 2 rad/s^2
✗ D. 4 rad/s^2

Question ID : **441009641203**
Option 1 ID : **4410092518950**
Option 2 ID : **4410092518948**
Option 3 ID : **4410092518949**
Option 4 ID : **4410092518947**
Status : **Answered**
Chosen Option : **B**

Q.66 Which of the following gases is harmful to the ozone layer?

Ans
✗ A. Nitrogen
✗ B. Hydrogen
✓ C. Chlorofluorocarbons
✗ D. Carbon dioxide

Question ID : **441009643461**
Option 1 ID : **4410092528031**
Option 2 ID : **4410092528033**
Option 3 ID : **4410092528030**
Option 4 ID : **4410092528032**
Status : **Answered**
Chosen Option : **C**

Q.67 If the boundary layer velocity profile is linear (i.e., u/U = y/δ), the displacement thickness is:

Ans
✗ A. 2δ/3
✗ B. δ/4
✓ C. δ/2
✗ D. δ/3

Question ID : **441009657056**
Option 1 ID : **4410092582589**
Option 2 ID : **4410092582588**
Option 3 ID : **4410092582587**
Option 4 ID : **4410092582586**
Status : **Answered**
Chosen Option : **C**

Q.68 Which of the following statements correctly distinguishes nitriding from carburising in the context of case hardening?

Ans
✗ A. Nitriding requires quenching after heating, while carburising does not.

✗ B. Both nitriding and carburizing involve soaking the part in molten salt baths to introduce carbon and nitrogen simultaneously.

✓ C. Nitriding introduces nitrogen into the surface at sub-critical temperatures and does not require quenching, unlike carburising.

✗ D. Carburising is performed at lower temperatures than nitriding and introduces nitrogen into the surface.

Question ID : **441009674434**
Option 1 ID : **4410092651871**
Option 2 ID : **4410092651874**
Option 3 ID : **4410092651873**
Option 4 ID : **4410092651872**
Status : **Answered**
Chosen Option : **C**

Q.69 Which of following mechanical properties of materials can be obtained using universal tensile testing?

Ans
✓ A. Yield stress

✗ B. Hardness

✗ C. Creep properties

✗ D. Wear resistance

Question ID : **441009753688**
Option 1 ID : **4410092968739**
Option 2 ID : **4410092968737**
Option 3 ID : **4410092968738**
Option 4 ID : **4410092968740**
Status : **Not Answered**
Chosen Option : **--**

Q.70 If P = equivalent dynamic load (N), F_r = radial load (N), F_a = axial or thrust load (N), V = race-rotation factor and X and Y are radial and thrust factors, respectively. Then, the expression for the equivalent dynamic load is given by which of the following expressions?

Ans
✓ A. $P = XVF_r + YF_a$

✗ B. $P = XVF_r - YF_a$

✗ C. $P = XF_a + YVF_r$

✗ D. $P = XF_a - YVF_r$

Question ID : **441009397623**
Option 1 ID : **4410091555934**
Option 2 ID : **4410091555935**
Option 3 ID : **4410091555936**
Option 4 ID : **4410091555937**
Status : **Answered**
Chosen Option : **A**

Q.71 Which of the following statements is NOT correct?

Ans
- ✗ A. The Gerber curve takes the mean path through failure points.
- ✗ B. Theories are based on the Goodman line, as failure criteria are conservative theories.
- ✓ C. Soderberg line is more accurate in predicting fatigue failure than the Gerber curve.
- ✗ D. Theories are based on the Soderberg line, as failure criteria are conservative theories.

Question ID : **441009397561**
Option 1 ID : **4410091555683**
Option 2 ID : **4410091555682**
Option 3 ID : **4410091555680**
Option 4 ID : **4410091555681**
Status : **Answered**
Chosen Option : **B**

Q.72 Which of the following relations is correct for core loss in a transformer?

Ans
- ✗ A. Core loss = Hysteresis loss × Eddy current loss
- ✗ B. Core loss = Hysteresis loss / Eddy current loss
- ✓ C. Core loss = Hysteresis loss + Eddy current loss
- ✗ D. Core loss = Hysteresis loss − Eddy current loss

Question ID : **441009626341**
Option 1 ID : **4410092459519**
Option 2 ID : **4410092459518**
Option 3 ID : **4410092459516**
Option 4 ID : **4410092459517**
Status : **Not Answered**
Chosen Option : **--**

Q.73 For an opaque body, the relation between absorptivity α, reflectivity ρ and transmissivity τ is:

Ans
- ✓ A. $\alpha+\rho=1$
- ✗ B. $\alpha+\rho+\tau=0$
- ✗ C. $\alpha+\tau=1$
- ✗ D. $\rho+\tau=1$

Question ID : **441009461607**
Option 1 ID : **4410091804849**
Option 2 ID : **4410091804852**
Option 3 ID : **4410091804850**
Option 4 ID : **4410091804851**
Status : **Answered**
Chosen Option : **A**

Q.74 For which of the following applications are deterministic models usually NOT implemented?

Ans
✗ A. Inventory management where demand and supply are known
✗ B. PERT
✗ C. CPM
✓ D. Maintaining the air conditioners temperature

Question ID : **441009605550**
Option 1 ID : **4410092377320**
Option 2 ID : **4410092377317**
Option 3 ID : **4410092377318**
Option 4 ID : **4410092377319**
Status : **Not Answered**
Chosen Option : **--**

Q.75 What is the purpose of virtual memory?

Ans
✓ A. To allow execution of processes that may not be completely in main memory
✗ B. To increase storage capacity
✗ C. To back up data
✗ D. To increase the speed of the CPU

Question ID : **4410091152702**
Option 1 ID : **4410094545718**
Option 2 ID : **4410094545720**
Option 3 ID : **4410094545721**
Option 4 ID : **4410094545719**
Status : **Not Answered**
Chosen Option : **--**

Q.76 Which of the following tests is conducted to measure impact energy of a material?

Ans
✓ A. Charpy Test
✗ B. Brinell test
✗ C. Rockwell Test
✗ D. Vickers Test

Question ID : **441009753625**
Option 1 ID : **4410092968485**
Option 2 ID : **4410092968488**
Option 3 ID : **4410092968487**
Option 4 ID : **4410092968486**
Status : **Answered**
Chosen Option : **A**

Q.77 A system is said to be critically damped if the damping factor for a vibrating system is _____.

Ans
✓ A. equal to one
✗ B. less than one
✗ C. equal to zero
✗ D. more than one

Question ID : **441009664754**
Option 1 ID : **4410092613044**
Option 2 ID : **4410092613045**
Option 3 ID : **4410092613046**
Option 4 ID : **4410092613043**
Status : **Answered**
Chosen Option : **A**

Q.78 What is the basic form of Dunkerley's equation for a shaft with multiple discs?

Ans
✗ A. $\frac{1}{w_n^2} = \frac{1}{w_1^2} \times \frac{1}{w_2^2} \times \ldots\ldots \frac{1}{w_s^2}$
✗ B. $\frac{1}{w_n^2} = \frac{1}{w_1^2} - \frac{1}{w_2^2} - \ldots\ldots \frac{1}{w_s^2}$
✗ C. $\frac{w_n}{w_n^2} = \frac{w_n}{w_1^2} \times \frac{w_n}{w_2^2} \times \ldots\ldots \frac{w_n}{w_s^2}$
✓ D. $\frac{1}{w_n^2} = \frac{1}{w_1^2} + \frac{1}{w_2^2} + \ldots\ldots \frac{1}{w_s^2}$

Question ID : **441009664918**
Option 1 ID : **4410092613692**
Option 2 ID : **4410092613693**
Option 3 ID : **4410092613694**
Option 4 ID : **4410092613691**
Status : **Not Answered**
Chosen Option : **--**

Q.79 Which of the following statements best distinguishes between clearance, interference and transition fits?

Ans
✓ A. Clearance fit permits free relative motion; an interference fit results in no clearance under any conditions; a transition fit may result in either a tight or loose fit, depending on the actual sizes.
✗ B. Clearance and interference fits are interchangeable; transition fit is used only when parts are press-fitted.
✗ C. Clearance fit prevents all relative motion; interference fit ensures easy assembly; transition fit allows parts to rotate freely.
✗ D. Clearance fit allows for intentional space between parts; an interference fit forces parts to deform during assembly; a transition fit always results in a loose connection.

Question ID : **441009672567**
Option 1 ID : **4410092644391**
Option 2 ID : **4410092644393**
Option 3 ID : **4410092644392**
Option 4 ID : **4410092644390**
Status : **Answered**
Chosen Option : **A**

Q.80 Assignment problem is a special type of:

Ans
- ✗ A. C++ programming problem
- ✗ B. exponential programming problem
- ✗ C. computer programming problem
- ✓ D. linear programming problem

Question ID : **441009562218**
Option 1 ID : **4410092204118**
Option 2 ID : **4410092204121**
Option 3 ID : **4410092204120**
Option 4 ID : **4410092204119**
Status : **Not Answered**
Chosen Option : **--**

Q.81 Which of the following is the correct equation for Economic Order Quantity (EOQ)?

Consider S = Procurement Cost per order, I = Inventory carrying cost per year, C = Unit cost of required item and A = Annual demand

Ans
- ✗ A. $EOQ = \sqrt{\frac{2IC}{AS}}$
- ✗ B. $EOQ = 5 \times \sqrt{\frac{AC}{IS}}$
- ✓ C. $EOQ = \sqrt{\frac{2AS}{IC}}$
- ✗ D. $EOQ = \sqrt{\frac{2AC}{IS}}$

Question ID : **441009605568**
Option 1 ID : **4410092377392**
Option 2 ID : **4410092377391**
Option 3 ID : **4410092377389**
Option 4 ID : **4410092377390**
Status : **Not Answered**
Chosen Option : **--**

Q.82 The working principle of a transformer is based on which of the following laws?

Ans
- ✗ A. Stephan Boltzmann law
- ✗ B. Wein displacement Law
- ✓ C. Faraday's law of electromagnetic induction
- ✗ D. Coulomb's Law

Question ID : **441009626304**
Option 1 ID : **4410092459371**
Option 2 ID : **4410092459370**
Option 3 ID : **4410092459368**
Option 4 ID : **4410092459369**
Status : **Answered**
Chosen Option : **C**

Q.83 Taylor's tool life equation $VT^n = C$ does NOT account for:

Ans
✗ A. depth of cut and feed
✓ B. tool wear
✗ C. cutting speed
✗ D. tool life constant

Question ID : **441009672559**
Option 1 ID : **4410092644360**
Option 2 ID : **4410092644358**
Option 3 ID : **4410092644359**
Option 4 ID : **4410092644361**
Status : **Answered**
Chosen Option : **A**

Q.84 Calculate the value of smaller force if two forces act at an angle of 120° and larger force is 40 N in magnitude.
(Note: Resultant of these two forces is perpendicular to smaller force.)

Ans
✗ A. 60 N
✓ B. 20 N
✗ C. 80 N
✗ D. 40 N

Question ID : **441009642006**
Option 1 ID : **4410092522169**
Option 2 ID : **4410092522168**
Option 3 ID : **4410092522170**
Option 4 ID : **4410092522167**
Status : **Answered**
Chosen Option : **B**

Q.85 What is the shape of indenter in Vickers hardness test?

Ans
✗ A. Diamond Pyramidal indenter with 180 degree included angle
✗ B. Spherical steel indenter
✓ C. Diamond Pyramidal indenter with 136 degree included angle
✗ D. Diamond Pyramidal indenter with 120 degree included angle

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Option 2 ID : **4410092968656**
Option 3 ID : **4410092968654**
Option 4 ID : **4410092968653**
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Chosen Option : **D**