HPCL
Jr Executive

Previous Year Paper
(Electrical Engg.)
16 Aug, 2025

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

Participant ID	
Participant Name	
Test Center Name	
Test Date	16/08/2025
Test Time	9:00 AM - 11:30 AM
Subject	Jr Executive Electrical Engineer Ref

Section : **English Language**

Q.1 **Identify the INCORRECTLY spelt word in the given sentence and select the option that rectifies it.**

The artist's use of vibrant hues brought a sense of dynamism and exuberence to the otherwise sombre canvas.

Ans
✔ A. exuberance
✘ B. dynamysm
✘ C. sombber
✘ D. huews

Question ID : **441009303304**
Option 1 ID : **4410091179770**
Option 2 ID : **4410091179769**
Option 3 ID : **4410091179771**
Option 4 ID : **4410091179768**
Status : **Answered**
Chosen Option : **B**

Q.2 **Identify the INCORRECTLY spelt word in the given sentence.**

The museum curator emphasised the artefacts' autenticity, claiming they had been verified by renowned historians and archaeologists.

Ans
✘ A. artefacts
✘ B. emphasised
✔ C. autenticity
✘ D. renowned

Question ID : **441009303281**
Option 1 ID : **4410091179677**
Option 2 ID : **4410091179676**
Option 3 ID : **4410091179678**
Option 4 ID : **4410091179679**
Status : **Answered**
Chosen Option : **A**

Q.3 Select the most appropriate articles to fill in the blanks.

She delivered _____ inspiring talk on ethics and followed it up with _____ hour-long question-and-answer session.

Ans
✗ A. a; a
✓ B. an; an
✗ C. a; an
✗ D. an; a

Question ID : **441009299224**
Option 1 ID : **4410091163930**
Option 2 ID : **4410091163932**
Option 3 ID : **4410091163933**
Option 4 ID : **4410091163931**
Status : **Answered**
Chosen Option : **B**

Q.4 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. They captivate users with short, visually stimulating content that ranges from dance challenges and comedy skits to educational snippets and senseless videos.
B. Social media platforms, online gaming, and streaming services have created an engaging yet addictive digital ecosystem.
C. In today's digital era, people from all walks of life are increasingly drawn to the virtual world, spending countless hours glued to their screens rather than engaging in real-world activities.
D. While initially sought as a break from daily routines, reels often trap users in an endless cycle of mindless scrolling that detracts from productivity and long-term goals.
E. Among these, reels have emerged as a dominant form of entertainment.

Ans
✗ A. AEDCB
✗ B. BACDE
✗ C. DCAEB
✓ D. CBEAD

Question ID : **441009299284**
Option 1 ID : **4410091164153**
Option 2 ID : **4410091164150**
Option 3 ID : **4410091164151**
Option 4 ID : **4410091164152**
Status : **Answered**
Chosen Option : **D**

Q.5 Select the most appropriate articles to fill in the blanks.

She pursued _____ career as _____ economist despite initial doubts about the field.

Ans
✗ A. a; No article needed
✗ B. a; a
✗ C. an; a
✓ D. a; an

Question ID : **441009299217**
Option 1 ID : **4410091163905**
Option 2 ID : **4410091163904**
Option 3 ID : **4410091163903**
Option 4 ID : **4410091163902**
Status : **Answered**
Chosen Option : **D**

Q.6 Select the most appropriate option to fill in the blank.

Despite his extensive knowledge, his arguments often appeared _____ to the discerning audience.

Ans
✗ A. articulate
✗ B. succinct
✗ C. verbose
✓ D. fallacious

Question ID : **441009299232**
Option 1 ID : **4410091163964**
Option 2 ID : **4410091163965**
Option 3 ID : **4410091163962**
Option 4 ID : **4410091163963**
Status : **Answered**
Chosen Option : **D**

Q.7 Identify the INCORRECTLY spelt word in the given sentence.

Although she prepared thoroughly for the presentation, her initial embarrasment was evident when she stumbled over her opening lines.

Ans
✓ A. embarrasment
✗ B. initial
✗ C. thoroughly
✗ D. presentation

Question ID : **441009303272**
Option 1 ID : **4410091179642**
Option 2 ID : **4410091179641**
Option 3 ID : **4410091179643**
Option 4 ID : **4410091179640**
Status : **Answered**
Chosen Option : **C**

Q.8 Identify the INCORRECTLY spelt word in the given sentence and select the option that rectifies it.

The cruise ship navigated through the serene waters of the achipaelago, offering breathtaking views of secluded islets.

Ans
✗ A. seckluded
✗ B. navvigated
✓ C. archipelago
✗ D. serenne

Question ID : **441009303310**
Option 1 ID : **4410091179800**
Option 2 ID : **4410091179802**
Option 3 ID : **4410091179803**
Option 4 ID : **4410091179801**
Status : **Answered**
Chosen Option : **C**

Q.9 Select the most appropriate options to fill in the blanks.

_____ he was tired, he continued working late into the night _____ he had a deadline to meet.

Ans
✔ A. Although; because
✘ B. Yet; as
✘ C. Since; so
✘ D. Unless; because

Question ID : **441009299273**
Option 1 ID : **4410091164112**
Option 2 ID : **4410091164111**
Option 3 ID : **4410091164113**
Option 4 ID : **4410091164110**
Status : **Answered**
Chosen Option : **A**

Q.10 Identify the INCORRECTLY spelt word in the given sentence.

The newly opened restuarant, despite its lavish decor and promising menu, struggled to attract a consistent customer base due to its remote location.

Ans
✘ A. decor
✘ B. remote
✘ C. lavish
✔ D. restuarant

Question ID : **441009303260**
Option 1 ID : **4410091179596**
Option 2 ID : **4410091179599**
Option 3 ID : **4410091179598**
Option 4 ID : **4410091179597**
Status : **Answered**
Chosen Option : **D**

Q.11 Identify the INCORRECTLY spelt word in the given sentence and select the option that rectifies it.

The ancient manuscript was preserved in a specially designed hermatical chamber to prevent deterioration.

Ans
✘ A. manuskript
✘ B. deteriorration
✔ C. hermetical
✘ D. chembar

Question ID : **441009303294**
Option 1 ID : **4410091179731**
Option 2 ID : **4410091179730**
Option 3 ID : **4410091179729**
Option 4 ID : **4410091179728**
Status : **Answered**
Chosen Option : **D**

Q.12 Select the option that can be used as a one-word substitute for the highlighted phrase in the given sentence.

The officer was dismissed from service for **disregarding official duties**.

Ans
✗ A. responsible
✓ B. negligence
✗ C. dutiful
✗ D. authoritative

Question ID : **441009303058**
Option 1 ID : **4410091178812**
Option 2 ID : **4410091178813**
Option 3 ID : **4410091178814**
Option 4 ID : **4410091178815**
Status : **Answered**
Chosen Option : **B**

Comprehension:

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

In the times of turbulence, the mind easily spirals into anxiety and impulsive reactions. Trying to achieve emotional stability while facing rough seas could be one of the reasons why living mindfully - pausing to reflect - is gaining popularity.
The 13th Century Buddhist priest Nichiren urged us to 'become masters of our minds, rather than letting our minds master us', teaching the importance of building an unwavering self that is not swayed by the fickle nature of human emotions.
These days, the constant barrage of information often leads to mental exhaustion. In contrast, the Buddhist principle of mastering one's mind empowers us to reclaim our mental focus. It could be defined as the discipline of directing our attention to the present, free from the weight of past regrets or future fears. In doing so, we begin to tap our own innate wisdom and compassion- igniting an inner transformation that reshapes how we relate to ourselves and others.

SubQuestion No : 13

Q.13 Identify the tone of the passage.

Ans
✗ A. Romantic
✓ B. Reflective
✗ C. Narrative
✗ D. Tragic

Question ID : **441009306954**
Option 1 ID : **4410091194506**
Option 2 ID : **4410091194503**
Option 3 ID : **4410091194505**
Option 4 ID : **4410091194504**
Status : **Answered**
Chosen Option : **B**

Comprehension:

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

In the times of turbulence, the mind easily spirals into anxiety and impulsive reactions. Trying to achieve emotional stability while facing rough seas could be one of the reasons why living mindfully - pausing to reflect - is gaining popularity.
The 13th Century Buddhist priest Nichiren urged us to 'become masters of our minds, rather than letting our minds master us', teaching the importance of building an unwavering self that is not swayed by the fickle nature of human emotions.
These days, the constant barrage of information often leads to mental exhaustion. In contrast, the Buddhist principle of mastering one's mind empowers us to reclaim our mental focus. It could be defined as the discipline of directing our attention to the present, free from the weight of past regrets or future fears. In doing so, we begin to tap our own innate wisdom and compassion- igniting an inner transformation that reshapes how we relate to ourselves and others.

SubQuestion No : 14

Q.14 Select the correct ANTONYM of the word 'innate' as used in the passage.

Ans
✔ A. Acquired
✘ B. Cultural
✘ C. Foreign
✘ D. Traditional

Question ID : **441009306955**
Option 1 ID : **4410091194507**
Option 2 ID : **4410091194509**
Option 3 ID : **4410091194508**
Option 4 ID : **4410091194510**
Status : **Not Answered**
Chosen Option : **--**

Comprehension:

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

In the times of turbulence, the mind easily spirals into anxiety and impulsive reactions. Trying to achieve emotional stability while facing rough seas could be one of the reasons why living mindfully - pausing to reflect - is gaining popularity.
The 13th Century Buddhist priest Nichiren urged us to 'become masters of our minds, rather than letting our minds master us', teaching the importance of building an unwavering self that is not swayed by the fickle nature of human emotions.
These days, the constant barrage of information often leads to mental exhaustion. In contrast, the Buddhist principle of mastering one's mind empowers us to reclaim our mental focus. It could be defined as the discipline of directing our attention to the present, free from the weight of past regrets or future fears. In doing so, we begin to tap our own innate wisdom and compassion- igniting an inner transformation that reshapes how we relate to ourselves and others.

SubQuestion No : 15

Q.15 Select the most suitable title for the passage from the given options.

Ans
✘ A. The outcomes of impulsive reactions
✘ B. Way that leads to Mental Exhaustion
✔ C. The Benefits of Being Mindful
✘ D. Emotional Instability: Need of An Hour

Question ID : **441009306956**
Option 1 ID : **4410091194513**
Option 2 ID : **4410091194512**
Option 3 ID : **4410091194511**
Option 4 ID : **4410091194514**
Status : **Not Answered**
Chosen Option : **--**

Comprehension:

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

In the times of turbulence, the mind easily spirals into anxiety and impulsive reactions. Trying to achieve emotional stability while facing rough seas could be one of the reasons why living mindfully - pausing to reflect - is gaining popularity.
The 13th Century Buddhist priest Nichiren urged us to 'become masters of our minds, rather than letting our minds master us', teaching the importance of building an unwavering self that is not swayed by the fickle nature of human emotions.
These days, the constant barrage of information often leads to mental exhaustion. In contrast, the Buddhist principle of mastering one's mind empowers us to reclaim our mental focus. It could be defined as the discipline of directing our attention to the present, free from the weight of past regrets or future fears. In doing so, we begin to tap our own innate wisdom and compassion- igniting an inner transformation that reshapes how we relate to ourselves and others.

SubQuestion No : 16

Q.16 Which century priest is mentioned in the passage?

Ans

✗ A. 21st Century

✗ B. 10th Century

✓ C. 13th Century

✗ D. 18th Century

Question ID : **441009306957**
Option 1 ID : **4410091194518**
Option 2 ID : **4410091194515**
Option 3 ID : **4410091194517**
Option 4 ID : **4410091194516**
Status : **Answered**
Chosen Option : **C**

Comprehension:

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

In the times of turbulence, the mind easily spirals into anxiety and impulsive reactions. Trying to achieve emotional stability while facing rough seas could be one of the reasons why living mindfully - pausing to reflect - is gaining popularity.
The 13th Century Buddhist priest Nichiren urged us to 'become masters of our minds, rather than letting our minds master us', teaching the importance of building an unwavering self that is not swayed by the fickle nature of human emotions.
These days, the constant barrage of information often leads to mental exhaustion. In contrast, the Buddhist principle of mastering one's mind empowers us to reclaim our mental focus. It could be defined as the discipline of directing our attention to the present, free from the weight of past regrets or future fears. In doing so, we begin to tap our own innate wisdom and compassion- igniting an inner transformation that reshapes how we relate to ourselves and others.

SubQuestion No : 17

Q.17 What does the Buddhist principle of mastering one's mind empower us to do?

Ans

✗ A. Revisit the traumas of the past

✓ B. Become masters of one's mind

✗ C. Be anxious and act impulsively

✗ D. Erase all relevant information

Question ID : **441009306958**
Option 1 ID : **4410091194520**
Option 2 ID : **4410091194519**
Option 3 ID : **4410091194522**
Option 4 ID : **4410091194521**
Status : **Answered**
Chosen Option : **B**

Section : **Quantitative Aptitude**

Q.1 The mean weight of 49 students of a college is 60 kg. If the weight of the teacher is included, the mean rises by 600 grams. Find the weight of the teacher (in kg).

Ans
✗ A. 85
✓ B. 90
✗ C. 95
✗ D. 80

Question ID : **441009309935**
Option 1 ID : **4410091206249**
Option 2 ID : **4410091206250**
Option 3 ID : **4410091206251**
Option 4 ID : **4410091206248**
Status : **Answered**
Chosen Option : **D**

Q.2 The ratio between two numbers is 13 : 19. If the difference between them is 372. Find the sum of both the numbers.

Ans
✗ A. 1769
✓ B. 1984
✗ C. 1689
✗ D. 1824

Question ID : **441009339759**
Option 1 ID : **4410091325071**
Option 2 ID : **4410091325073**
Option 3 ID : **4410091325070**
Option 4 ID : **4410091325072**
Status : **Not Attempted and Marked For Review**
Chosen Option : **--**

Q.3 In how many days could P, Q, and R together complete the same work, if P can do it in 40 days, Q can finish it in 80 days, and R can finish it in 120 days?

Ans
✗ A. $21\frac{8}{11}$ days
✗ B. $21\frac{5}{11}$ days
✗ C. $21\frac{6}{11}$ days
✓ D. $21\frac{9}{11}$ days

Question ID : **441009337230**
Option 1 ID : **4410091314926**
Option 2 ID : **4410091314924**
Option 3 ID : **4410091314925**
Option 4 ID : **4410091314927**
Status : **Answered**
Chosen Option : **B**

Q.4 For the first 19 natural numbers, whose weights equal the corresponding number, what is the weighted arithmetic mean?

Ans
✔ A. 13
✘ B. 11
✘ C. 14
✘ D. 12

Question ID : **441009338021**
Option 1 ID : **4410091318062**
Option 2 ID : **4410091318060**
Option 3 ID : **4410091318063**
Option 4 ID : **4410091318061**
Status : **Not Answered**
Chosen Option : **--**

Q.5 The length of the shadow of a 5 m high pole, at a certain time of the day, is 8.5 m. What is the height of another pole whose shadow at that time is 136 m long?

Ans
✘ A. 78 metres
✔ B. 80 metres
✘ C. 83 metres
✘ D. 65 metres

Question ID : **441009326755**
Option 1 ID : **4410091273393**
Option 2 ID : **4410091273394**
Option 3 ID : **4410091273395**
Option 4 ID : **4410091273392**
Status : **Answered**
Chosen Option : **C**

Q.6 The total surface area of a cube having side 81 cm is:474

Ans
✘ A. 39439 cm^2
✔ B. 39366 cm^2
✘ C. 39340 cm^2
✘ D. 39357 cm^2

Question ID : **4410091117031**
Option 1 ID : **4410094404015**
Option 2 ID : **4410094404012**
Option 3 ID : **4410094404013**
Option 4 ID : **4410094404014**
Status : **Answered**
Chosen Option : **B**

Q.7 Raman had to sell vegetables worth ₹6,880 for ₹5,504 due to heavy rainfall. What is the loss percentage that he has incurred?

Ans
✘ A. 19%
✘ B. 18%
✘ C. 21%
✔ D. 20%

Question ID : **441009337205**
Option 1 ID : **4410091314829**
Option 2 ID : **4410091314828**
Option 3 ID : **4410091314831**
Option 4 ID : **4410091314830**
Status : **Answered**
Chosen Option : **D**

Q.8 The average of marks scored by the students of a class is 80. The average of marks of the girls in the class is 92 and that of the boys is 72. What is the percentage of boys in the class?

Ans
✔ A. 60%
✘ B. 55%
✘ C. 50%
✘ D. 65%

Question ID : **441009309948**
Option 1 ID : **4410091206302**
Option 2 ID : **4410091206301**
Option 3 ID : **4410091206300**
Option 4 ID : **4410091206303**
Status : **Answered**
Chosen Option : **D**

Q.9 A man bought an old typewriter for ₹1,800 and spent ₹350 on its repairing. He sold it for ₹2,580. Find his profit percentage.

Ans
✔ A. 20%
✘ B. 18%
✘ C. 17%
✘ D. 19%

Question ID : **441009337198**
Option 1 ID : **4410091314807**
Option 2 ID : **4410091314805**
Option 3 ID : **4410091314804**
Option 4 ID : **4410091314806**
Status : **Answered**
Chosen Option : **C**

Q.10 Find the value of $\sqrt{\frac{\sqrt{512}\times\sqrt{1250}+\sqrt{243}\times\sqrt{14700}}{\sqrt{625}\times\sqrt{81}+\sqrt{16807}\times\sqrt{6300}}}$.

Ans
✘ A. $\sqrt{\frac{131}{1498}}$
✘ B. $\sqrt{\frac{237}{1763}}$
✔ C. $\sqrt{\frac{538}{2103}}$
✘ D. $\sqrt{\frac{420}{2063}}$

Question ID : **441009326963**
Option 1 ID : **4410091274216**
Option 2 ID : **4410091274217**
Option 3 ID : **4410091274219**
Option 4 ID : **4410091274218**
Status : **Not Answered**
Chosen Option : **--**

Q.11 The average of 28 numbers is 45. If one number is removed, the average becomes 44. What is the removed number?

Ans
✗ A. 81
✗ B. 70
✗ C. 68
✓ D. 72

Question ID : **441009317974**
Option 1 ID : **4410091238364**
Option 2 ID : **4410091238362**
Option 3 ID : **4410091238361**
Option 4 ID : **4410091238363**
Status : **Answered**
Chosen Option : **B**

Q.12 The speed of a steamer downstream is 56 km/hr and the speed of current is 14 km/hr. Find the total time taken by the steamer to cover 84 km upstream and 84 km downstream.

Ans
✓ A. $4\frac{1}{2}$ hours
✗ B. $3\frac{1}{2}$ hours
✗ C. 5 hours
✗ D. 4 hours

Question ID : **441009339923**
Option 1 ID : **4410091325735**
Option 2 ID : **4410091325733**
Option 3 ID : **4410091325736**
Option 4 ID : **4410091325734**
Status : **Not Answered**
Chosen Option : **--**

Q.13 A quantity of 132 full bags of wheat is emptied into a circular drum of If the space of each wheat bag is 21×10^5 cm^3, then find the value of $\left(\text{Use } \pi = \frac{22}{7}\right)$

527

Ans
✗ A. 6.5
✗ B. 8.1
✗ C. 7
✓ D. 5

Question ID : **4410091117084**
Option 1 ID : **4410094404225**
Option 2 ID : **4410094404227**
Option 3 ID : **4410094404224**
Option 4 ID : **4410094404226**
Status : **Not Answered**
Chosen Option : **--**

Q.14 The cost of 7 pens and 3 notebooks is ₹153. The cost of 8 notebooks exceeds the cost of 2 pens by ₹98. What is the cost of 5 pens and 6 notebooks?29

Ans
✗ A. ₹166
✗ B. ₹167
✓ C. ₹171
✗ D. ₹170

Question ID : **4410091123923**
Option 1 ID : **4410094431256**
Option 2 ID : **4410094431254**
Option 3 ID : **4410094431253**
Option 4 ID : **4410094431255**
Status : **Answered**
Chosen Option : **B**

Q.15 Shawan bought an electric scooter for ₹1,20,000 and sold it for ₹1,40,000. Find the percentage profit made on the sale of the electric scooter.

Ans
✗ A. $15\frac{2}{3}\%$
✗ B. $13\frac{2}{3}\%$
✓ C. $16\frac{2}{3}\%$
✗ D. $14\frac{2}{3}\%$

Question ID : **441009334297**
Option 1 ID : **4410091303127**
Option 2 ID : **4410091303125**
Option 3 ID : **4410091303128**
Option 4 ID : **4410091303126**
Status : **Answered**
Chosen Option : **C**

Q.16 Let C_1 and C_2 be two circles with centres P = (2, −7) and Q = (−7, 5) and with radii 5 cm and 8 cm, respectively. Find the number of common tangents to C_1 and C_2.500

Ans
✗ A. 1
✓ B. 4
✗ C. 3
✗ D. 2

Question ID : **4410091117057**
Option 1 ID : **4410094404119**
Option 2 ID : **4410094404118**
Option 3 ID : **4410094404117**
Option 4 ID : **4410094404116**
Status : **Answered**
Chosen Option : **B**

Q.17 Find the sum of all the prime numbers between 21 and 78.

Ans
✗ A. 565
✗ B. 615
✗ C. 535
✓ D. 635

Question ID : **441009311464**
Option 1 ID : **4410091212276**
Option 2 ID : **4410091212277**
Option 3 ID : **4410091212275**
Option 4 ID : **4410091212278**
Status : **Answered**
Chosen Option : **B**

Q.18 Find the mean proportional of $(8+\sqrt{48})$ and $(4-\sqrt{12})$.

Ans
✓ A. $2\sqrt{2}$
✗ B. $3\sqrt{3}$
✗ C. $2\sqrt{3}$
✗ D. $3\sqrt{2}$

Question ID : **441009337481**
Option 1 ID : **4410091315888**
Option 2 ID : **4410091315891**
Option 3 ID : **4410091315890**
Option 4 ID : **4410091315889**
Status : **Not Answered**
Chosen Option : **--**

Q.19 The length of a rectangular field is 31 m more than its breadth. Its area is 33066 m^2. Its breadth (in m) is:95

Ans
✗ A. 172
✗ B. 178
✗ C. 158
✓ D. 167

Question ID : **4410091123989**
Option 1 ID : **4410094431520**
Option 2 ID : **4410094431518**
Option 3 ID : **4410094431519**
Option 4 ID : **4410094431517**
Status : **Answered**
Chosen Option : **B**

Q.20 At what percentage rate per annum will a sum of ₹18,944 amount to ₹26,973 in 3 years when compounded annually?

Ans
✗ A. 11.8%
✗ B. 8.6%
✓ C. 12.5%
✗ D. 10.2%

Question ID : **441009318222**
Option 1 ID : **4410091239351**
Option 2 ID : **4410091239349**
Option 3 ID : **4410091239352**
Option 4 ID : **4410091239350**
Status : **Answered**
Chosen Option : **A**

Q.21 Under an offer at a shop selling socks, customers were getting 6 pairs of socks free on the purchase of 4 pairs of socks. Find the discount available to the customer.

Ans
✗ A. 55%
✗ B. 65%
✓ C. 60%
✗ D. 50%

Question ID : **441009334452**
Option 1 ID : **4410091303767**
Option 2 ID : **4410091303769**
Option 3 ID : **4410091303768**
Option 4 ID : **4410091303766**
Status : **Answered**
Chosen Option : **B**

Q.22 Find the circumference (in m) of the largest circle that can be inscribed in a rectangle whose dimensions are given as 28 m and 192 m.

$take\ \pi = \frac{22}{7}$ 227

Ans
✗ A. 86
✗ B. 98
✓ C. 88
✗ D. 80

Question ID : **4410091116784**
Option 1 ID : **4410094403025**
Option 2 ID : **4410094403026**
Option 3 ID : **4410094403024**
Option 4 ID : **4410094403027**
Status : **Answered**
Chosen Option : **C**

Q.23 Which of the options below is equivalent to $1728x^3 + 343y^3 + 3024x^2y + 1764xy^2y$107

Ans
✗ A. $(12x + 10y)^3$
✗ B. $(14x + 7y)^3$
✓ C. $(12x + 7y)^3$
✗ D. $(7x + 12y)^3$

Question ID : **4410091124001**
Option 1 ID : **4410094431568**
Option 2 ID : **4410094431567**
Option 3 ID : **4410094431565**
Option 4 ID : **4410094431566**
Status : **Not Attempted and Marked For Review**
Chosen Option : **--**

Q.24 If the equation $3x^2 + kx + 4 = 0$, $k > 0$, has real and equal roots, then the value of k satisfies the equation:39

Ans
✓ A. $k^2 - \sqrt{3}k - 36 = 0$
✗ B. $2k^2 + \sqrt{2}k - 1036 = 0$
✗ C. $k^2 - \sqrt{4}k - 964 = 0$
✗ D. $2k^2 - \sqrt{5}k - 1036 = 0$

Question ID : **4410091123933**
Option 1 ID : **4410094431293**
Option 2 ID : **4410094431295**
Option 3 ID : **4410094431294**
Option 4 ID : **4410094431296**
Status : **Not Attempted and Marked For Review**
Chosen Option : **--**

Q.25 A store offers three successive discounts of 12%, 15% and 18% on a product marked at ₹2,100. What is the final selling price (rounded off to two decimal places) of the product?

Ans
✗ A. ₹1,305.15
✗ B. ₹1,385.96
✓ C. ₹1,288.06
✗ D. ₹1,417.28

Question ID : **441009337241**
Option 1 ID : **4410091314969**
Option 2 ID : **4410091314970**
Option 3 ID : **4410091314968**
Option 4 ID : **4410091314971**
Status : **Answered**
Chosen Option : **C**

Q.26 P और Q ने क्रमशः ₹64,000 और ₹56,000 का निवेश करके एक साझेदारी शुरू की। 4 महीने बाद P ने ₹8,000 निकाल लिए जबकि Q ने ₹8,000 और निवेश किए। 8 महीने बाद R, ₹48,000 की पूंजी के साथ व्यवसाय में शामिल हो गया। वर्ष के अंत में, उन्हें ₹48,909 का लाभ हुआ। Q का हिस्सा R के हिस्से से कितना अधिक है?

Ans
✗ A. ₹16,586
✗ B. ₹16,105
✓ C. ₹16,303
✗ D. ₹16,213

Question ID : **441009339784**
Option 1 ID : **4410091325173**
Option 2 ID : **4410091325170**
Option 3 ID : **4410091325172**
Option 4 ID : **4410091325171**
Status : **Answered**
Chosen Option : **A**

Q.27 Find the HCF of $A(x) = 4x^3 - 6x^2 - 4x + 6$ and $B(x) = 6x^2 + 16x + 10$.

Ans
✗ A. $2(x - 1)$
✗ B. $(2x - 1)$
✓ C. $2(x + 1)$
✗ D. $(2x + 1)$

Question ID : **441009311485**
Option 1 ID : **4410091212356**
Option 2 ID : **4410091212359**
Option 3 ID : **4410091212357**
Option 4 ID : **4410091212358**
Status : **Not Answered**
Chosen Option : **--**

Q.28 The parallel sides of an isosceles trapezium are 24 cm and 36 cm. If the one of the non-parallel sides has length 10 cm, what is the area (in cm^2) of the trapezium? 580

Ans
✗ A. 360
✗ B. 180
✓ C. 240
✗ D. 300

Question ID : **4410091117137**
Option 1 ID : **4410094404438**
Option 2 ID : **4410094404439**
Option 3 ID : **4410094404436**
Option 4 ID : **4410094404437**
Status : **Not Answered**
Chosen Option : **--**

Q.29 A car covers a distance of 84 km in 56 minutes. If its speed is decreased by 18 km/hr, then find the time taken by the car to cover the same distance.

Ans
✗ A. 64 minutes
✓ B. 70 minutes
✗ C. 72 minutes
✗ D. 68 minutes

Question ID : **441009339916**
Option 1 ID : **4410091325705**
Option 2 ID : **4410091325707**
Option 3 ID : **4410091325708**
Option 4 ID : **4410091325706**
Status : **Answered**
Chosen Option : **A**

Q.30 A and B can do a piece of work in 30 days, B and C can do it in 40 days, A and C can do it in 50 days. In how many days can all three together do the work?

Ans
✗ A. $17\frac{17}{35}$ days
✗ B. $21\frac{21}{38}$ days
✗ C. $16\frac{16}{23}$ days
✓ D. $25\frac{25}{47}$ days

Question ID : **441009339902**
Option 1 ID : **4410091325646**
Option 2 ID : **4410091325647**
Option 3 ID : **4410091325645**
Option 4 ID : **4410091325648**
Status : **Not Answered**
Chosen Option : **--**

Q.31 A town's population is increasing at a rate of 10%, annually. If the town's current population is 725,000, how many people will live there in two years?

Ans
✗ A. 7,77,250
✗ B. 9,77,250
✓ C. 8,77,250
✗ D. 9,67,250

Question ID : **441009310205**
Option 1 ID : **4410091207304**
Option 2 ID : **4410091207306**
Option 3 ID : **4410091207305**
Option 4 ID : **4410091207307**
Status : **Answered**
Chosen Option : **C**

Q.32 The bus travels a distance of 160 km/hr in the first half and 90 km/hr in the second half, complete its journey in 14 hours. How many kilometres was the journey's entire distance?

Ans
✗ A. 1812.8 km
✗ B. 1512.8 km
✗ C. 1712.8 km
✓ D. 1612.8 km

Question ID : **441009337237**
Option 1 ID : **4410091314955**
Option 2 ID : **4410091314952**
Option 3 ID : **4410091314954**
Option 4 ID : **4410091314953**
Status : **Not Answered**
Chosen Option : **--**

Q.33 Find the mode of the following data (correct to two places of decimal).

Class interval	0-8	8-16	16-24	24-32	32-40	40-48
Frequency	5	7	12	8	10	6

Ans
✗ A. 22.82
✗ B. 19.23
✓ C. 20.44
✗ D. 21.05

Question ID : **441009339815**
Option 1 ID : **4410091325294**
Option 2 ID : **4410091325291**
Option 3 ID : **4410091325292**
Option 4 ID : **4410091325293**
Status : **Not Answered**
Chosen Option : **--**

Q.34 In an election between two candidates, 88% of the voters cast their votes, out of which 8% of the votes were declared invalid. Winner candidate got 4807 votes, which were 95% of the total valid votes. Find the total number of voters enrolled in that election.

Ans
✗ A. 6560
✗ B. 6720
✗ C. 6380
✓ D. 6250

Question ID : **441009337168**
Option 1 ID : **4410091314686**
Option 2 ID : **4410091314687**
Option 3 ID : **4410091314685**
Option 4 ID : **4410091314684**
Status : **Answered**
Chosen Option : **D**

Section : **Intellectual Potential Test**

Q.1 Refer to the following letter and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) Z L @ K M 7 # 2 N R 4 $ 1 Q P ∞ 6 U V 9 % (Right)

If all the symbols and numbers are dropped from the series, then which of the following will be eighth in the series from the left end?

Ans
✗ A. U
✗ B. R
✓ C. P
✗ D. Q

Question ID : **4410091146916**
Option 1 ID : **4410094522622**
Option 2 ID : **4410094522623**
Option 3 ID : **4410094522621**
Option 4 ID : **4410094522620**
Status : **Answered**
Chosen Option : **C**

Q.2 Each of the digits in the number 2419637 is arranged in ascending order from left to right. The position of how many digits will remain unchanged as compared to that in the original number?

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

Question ID : **4410091126324**
Option 1 ID : **4410094440839**
Option 2 ID : **4410094440840**
Option 3 ID : **4410094440841**
Option 4 ID : **4410094440842**
Status : **Answered**
Chosen Option : **A**

Q.3 Refer to the following letter and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) D @ $ I X * © % Q K L # O R # Z & I R $ Y U (Right)

How many such letters are there each of which is immediately preceded by a letter and also immediately followed by a letter?128

Ans
✗ A. 0
✗ B. 3
✓ C. 1
✗ D. 2

Question ID : **4410091144923**
Option 1 ID : **4410094514650**
Option 2 ID : **4410094514651**
Option 3 ID : **4410094514648**
Option 4 ID : **4410094514649**
Status : **Answered**
Chosen Option : **C**

Q.4 If 1 is added to each odd digit and 2 is subtracted from each even digit in the number 1358374, then how many digits will appear more than once in the new number thus formed?

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

Question ID : **4410091126323**
Option 1 ID : **4410094440836**
Option 2 ID : **4410094440835**
Option 3 ID : **4410094440838**
Option 4 ID : **4410094440837**
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 their constituent digits. E.g. 13 – Operations on 13 such as adding to/subtracting from/multiplying with 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(131, 142, 546)
(120, 142, 524)

Ans
✓ A. (104, 112, 432)
✗ B. (152, 123, 275)
✗ C. (142, 154, 296)
✗ D. (122, 106, 228)

Question ID : **4410091125716**
Option 1 ID : **4410094438407**
Option 2 ID : **4410094438410**
Option 3 ID : **4410094438409**
Option 4 ID : **4410094438408**
Status : **Not Attempted and Marked For Review**
Chosen Option : **--**

Q.6 Seven people, A, B, C, D, E, F and G, are sitting in a row, facing north. Only two people sit to the left of C. Only three people sit between C and B. Only one person sits between B and F. A sits to the immediate left of D. E is not an immediate neighbour of B. How many people sit to the right of G?1216

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

Question ID : **4410091146011**
Option 1 ID : **4410094519001**
Option 2 ID : **4410094519003**
Option 3 ID : **4410094519002**
Option 4 ID : **4410094519000**
Status : **Answered**
Chosen Option : **C**

Q.7 Seven boxes, A, B, C, D, E, F and G, are kept one over the other but not necessarily in the same order. D is kept second from the bottom, and G is kept second from the top. Only one box is kept between F and C. F is kept on one of the positions above C, and E is kept on one of the positions above F. Two boxes are kept between A and B. B is kept immediately above G. How many boxes are kept between E and D?

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

Question ID : **4410091146682**
Option 1 ID : **4410094521687**
Option 2 ID : **4410094521686**
Option 3 ID : **4410094521684**
Option 4 ID : **4410094521685**
Status : **Answered**
Chosen Option : **B**

Q.8 In a certain code language, 'MOST' is coded as '4826' and 'OPEN' is coded as '3587'. What is the code for 'O' in the given code language?1516

Ans
✗ A. 7
✓ B. 8
✗ C. 5
✗ D. 3

Question ID : **4410091146311**
Option 1 ID : **4410094520203**
Option 2 ID : **4410094520200**
Option 3 ID : **4410094520202**
Option 4 ID : **4410094520201**
Status : **Answered**
Chosen Option : **C**

Q.9 The following contain pairs of numbers and words which are related to each other in a certain way. Three of the following four number-word pairs are alike as these have the same relationship and thus form a group. Which number-word pair DOES NOT belong to that group?

Ans
✗ A. Triangle-3
✗ B. Rectangle-4
✗ C. Square-4
✓ D. Pentagon-6

Question ID : **4410091145726**
Option 1 ID : **4410094517862**
Option 2 ID : **4410094517863**
Option 3 ID : **4410094517861**
Option 4 ID : **4410094517860**
Status : **Answered**
Chosen Option : **D**

Q.10 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster 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. QTO
✓ B. HKE
✗ C. KNI
✗ D. NQL

Question ID : **4410091145947**
Option 1 ID : **4410094518747**
Option 2 ID : **4410094518744**
Option 3 ID : **4410094518745**
Option 4 ID : **4410094518746**
Status : **Answered**
Chosen Option : **D**

Q.11 If 1 is added to each even digit and 2 is subtracted from each odd digit in the number 935678, then how many digits will appear more than once in the new number thus formed?

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

Question ID : **4410091126267**
Option 1 ID : **4410094440611**
Option 2 ID : **4410094440613**
Option 3 ID : **4410094440614**
Option 4 ID : **4410094440612**
Status : **Answered**
Chosen Option : **A**

Q.12 In a certain code language,

'A + B' means 'A is the son of B',
'A − B' means 'A is the brother of B',
'A × B' means 'A is the wife of B' and
'A ÷ B' means 'A is the father of B'.

How is M related to Q if 'M − N + O × P ÷ Q'?

Ans
✗ A. Son
✗ B. Husband
✓ C. Brother
✗ D. Father

Question ID : **4410091146316**
Option 1 ID : **4410094520223**
Option 2 ID : **4410094520221**
Option 3 ID : **4410094520220**
Option 4 ID : **4410094520222**
Status : **Answered**
Chosen Option : **C**

Q.13 In the following series, only one letter-cluster is incorrect. Select the INCORRECT letter-cluster.

YZC EFI KLO QRU VWC1015

Ans
✗ A. EFI
✓ B. VWC
✗ C. KLO
✗ D. QRU

Question ID : **4410091145810**
Option 1 ID : **4410094518198**
Option 2 ID : **4410094518196**
Option 3 ID : **4410094518199**
Option 4 ID : **4410094518197**
Status : **Answered**
Chosen Option : **B**

Q.14 Read the given statements 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 conclusion(s) logically follow(s) from the statements.

Statements:

All trades are businesses.
Some businesses are partnerships.

Conclusions:

I. Some trades are partnerships.
II. All trades are partnerships.

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

Question ID : **4410091146664**
Option 1 ID : **4410094521614**
Option 2 ID : **4410094521612**
Option 3 ID : **4410094521615**
Option 4 ID : **4410094521613**
Status : **Answered**
Chosen Option : **C**

Q.15 Each of the digits in the number 692571 is arranged in descending order from left to right. The position(s) of how many digits will remain unchanged as compared to that in the original number?

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

Question ID : **4410091126266**
Option 1 ID : **4410094440607**
Option 2 ID : **4410094440610**
Option 3 ID : **4410094440608**
Option 4 ID : **4410094440609**
Status : **Answered**
Chosen Option : **A**

Q.16 Island Y is to the east of Island W. Island Y is to the west of Island V. Island V is to the south of Island U. Island X is to the east of Island U. What is the direction of Island X with respect to Island W?

Ans
✔ A. North-east
✘ B. South-west
✘ C. South-east
✘ D. North-west

Question ID : **4410091145968**
Option 1 ID : **4410094518831**
Option 2 ID : **4410094518830**
Option 3 ID : **4410094518828**
Option 4 ID : **4410094518829**
Status : **Not Answered**
Chosen Option : **--**

Q.17 Refer to the given number, symbol series and answer the question that follows. Counting to be done from left to right only. All numbers are single-digit numbers.

(Left) 1 & 5 * 3 ^ 6 £ $ 2 @ 8 % 7 4 < 9 (Right)

How many such symbols are there, each of which is immediately preceded by a number and also immediately followed by another number?

Ans
✘ A. Three
✘ B. Two
✘ C. One
✔ D. More than three

Question ID : **4410091144855**
Option 1 ID : **4410094514378**
Option 2 ID : **4410094514377**
Option 3 ID : **4410094514376**
Option 4 ID : **4410094514379**
Status : **Answered**
Chosen Option : **D**

Q.18 A, B, C, D, E, F and G are sitting around a circular table facing the centre. Only two people sit between E and F when counted from the left of F. B sits third to the left of G. A sits to the immediate right of G. A sits second to the left of E. D is an immediate neighbour of B. Who sits third to the right of D?1161

Ans
✔ A. A
✘ B. B
✘ C. F
✘ D. C

Question ID : **4410091145956**
Option 1 ID : **4410094518780**
Option 2 ID : **4410094518781**
Option 3 ID : **4410094518783**
Option 4 ID : **4410094518782**
Status : **Not Answered**
Chosen Option : **--**

Q.19 एक निश्चित कूट भाषा में,

A + B का अर्थ है कि 'A, B का पुत्र है',
A – B का अर्थ है कि 'A, B का भाई है',
A x B का अर्थ है कि 'A, B की पत्नी है', और
A ÷ B का अर्थ है कि 'A, B का पिता है'।

उपरोक्त के आधार पर, यदि 'L + M – N x O ÷ P' है, तो L का P से क्या संबंध है?

Ans
✗ A. माता की बहन का पुत्र
✗ B. पिता के भाई का पुत्र
✓ C. माता के भाई का पुत्र
✗ D. पिता की बहन का पुत्र

Question ID : **4410091146071**
Option 1 ID : **4410094519241**
Option 2 ID : **4410094519242**
Option 3 ID : **4410094519240**
Option 4 ID : **4410094519243**
Status : **Answered**
Chosen Option : **D**

Q.20 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 letter-cluster pair 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. SM - NH
✗ B. NH - IC
✗ C. PJ - KE
✓ D. YF - PA

Question ID : **4410091145755**
Option 1 ID : **4410094517979**
Option 2 ID : **4410094517978**
Option 3 ID : **4410094517976**
Option 4 ID : **4410094517977**
Status : **Answered**
Chosen Option : **D**

Q.21 Two sets of numbers are given below. In each set of numbers, certain mathematical operation(s) on the first number result(s) in the second number. Similarly, certain mathematical operation(s) on the second number result(s) in the third number and so on. Which of the given options follows the same set of operations as in the given sets?
(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into their constituent digits. E.g. 13 – Operations on 13 such as adding to/subtracting from/multiplying with 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

11 – 29 – 32 – 40; 6 – 14 – 17 – 25

Ans
✓ A. 8 – 20 – 23 – 31
✗ B. 4 – 10 – 11 – 19
✗ C. 17 – 55 – 58 – 64
✗ D. 13 – 35 – 32 – 40

Question ID : **4410091125660**
Option 1 ID : **4410094438183**
Option 2 ID : **4410094438184**
Option 3 ID : **4410094438186**
Option 4 ID : **4410094438185**
Status : **Not Answered**
Chosen Option : **--**

Q.22 What should come in place of the question mark (?) in the given series?

12 15 22 25 32 35 ?

Ans
✔ A. 42
✘ B. 45
✘ C. 41
✘ D. 38

Question ID : **4410091126022**
Option 1 ID : **4410094439631**
Option 2 ID : **4410094439633**
Option 3 ID : **4410094439634**
Option 4 ID : **4410094439632**
Status : **Answered**
Chosen Option : **A**

Q.23 Six boxes U, V, W, X, Y and Z are kept one over the other but not necessarily in the same order. Only two boxes are placed between V and Y. V is placed above Y. Only four boxes are placed above W. U is placed above X. Neither X nor Y is kept in the bottommost position. Which box is placed at fourth position from bottom?

Ans
✘ A. Z
✘ B. U
✘ C. V
✔ D. X

Question ID : **4410091146733**
Option 1 ID : **4410094521890**
Option 2 ID : **4410094521889**
Option 3 ID : **4410094521891**
Option 4 ID : **4410094521888**
Status : **Not Answered**
Chosen Option : **--**

Q.24 13 is related to 65 following a certain logic. Following the same logic, 19 is related to 95. To which of the given options is 27 related, following the same logic?
(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into their constituent digits. E.g. 13 – Operations on 13 such as adding to/subtracting from/multiplying with 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

Ans
✘ A. 178
✘ B. 124
✔ C. 135
✘ D. 156

Question ID : **4410091125725**
Option 1 ID : **4410094438444**
Option 2 ID : **4410094438446**
Option 3 ID : **4410094438443**
Option 4 ID : **4410094438445**
Status : **Answered**
Chosen Option : **C**

Q.25 Which of the following letter- clusters should replace # and % so that the pattern and relationship followed between the letter - cluster pair on the left side of : : is the same as that on the right side of ::?

RJV : # : : DLZ : %912

Ans
✗ A. # = SLU, % = HKC
✗ B. # = PJV, % = BMD
✓ C. # = QIW, % = CKA
✗ D. # = RIW, % = DJA

Question ID : **4410091145707**
Option 1 ID : **4410094517784**
Option 2 ID : **4410094517785**
Option 3 ID : **4410094517787**
Option 4 ID : **4410094517786**
Status : **Answered**
Chosen Option : **C**

Q.26 In a certain code language, 'you work here' is coded as 'fw nr mt', 'work with you' is coded as 'bo mt nr', and 'with here work' is coded as 'nr fw bo'.
(All codes are two letter codes.)

How is 'work' coded in that language?

Ans
✓ A. nr
✗ B. mt
✗ C. bo
✗ D. fw

Question ID : **4410091145689**
Option 1 ID : **4410094517713**
Option 2 ID : **4410094517714**
Option 3 ID : **4410094517715**
Option 4 ID : **4410094517712**
Status : **Answered**
Chosen Option : **C**

Q.27 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

BI-EL-GJ
DK-GN-IL1144

Ans
✗ A. FM-IP-KO
✗ B. EM-IP-KO
✗ C. EM-IP-LO
✓ D. FM-IP-KN

Question ID : **4410091145939**
Option 1 ID : **4410094518713**
Option 2 ID : **4410094518714**
Option 3 ID : **4410094518715**
Option 4 ID : **4410094518712**
Status : **Answered**
Chosen Option : **A**

Q.28 A, B, C, D, E, F and G are sitting around a circular table facing the centre. Only two people sit between A and B when counted from the right of A. Only two people sit between B and D when counted from the right of B. Only three people sit between A and F when counted from the left of F. C sits to the immediate left of G. Who sits third to the left of C?

Ans
✗ A. B
✗ B. F
✗ C. A
✓ D. E

Question ID : **4410091145957**
Option 1 ID : **4410094518787**
Option 2 ID : **4410094518785**
Option 3 ID : **4410094518786**
Option 4 ID : **4410094518784**
Status : **Not Answered**
Chosen Option : **--**

Q.29 Each of P, Q, R, S, T, U and V has an exam on a different day of a week, starting from Monday and ending on Sunday of the same week. V has an exam on Thursday. Exactly 4 people have their exam between S and U, neither of whom has an exam on Sunday. T has an exam immediately before Q. R does not have an exam on Friday. S does not have an exam after Q. Who has an exam on Tuesday?1512

Ans
✗ A. R
✓ B. T
✗ C. S
✗ D. U

Question ID : **4410091146307**
Option 1 ID : **4410094520186**
Option 2 ID : **4410094520184**
Option 3 ID : **4410094520185**
Option 4 ID : **4410094520187**
Status : **Not Answered**
Chosen Option : **--**

Q.30 Read the given statements 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 conclusion(s) logically follow(s) from the statement(s).

Statements:
All cups are bottles.
All bottles are jars.
No jar is a vase.

Conclusions:
(I) No cup is a vase.
(II) No bottle is a vase.421

Ans
✗ A. Only I follows
✗ B. Neither follows
✗ C. Only II follows
✓ D. Both follow

Question ID : **4410091145216**
Option 1 ID : **4410094515821**
Option 2 ID : **4410094515823**
Option 3 ID : **4410094515822**
Option 4 ID : **4410094515820**
Status : **Answered**
Chosen Option : **D**

Q.31 What should come in place of the question mark (?) in the given series?

11 13 19 21 27 ?

Ans ✔ A. 29

✗ B. 32

✗ C. 28

✗ D. 34

Question ID : **4410091126019**
Option 1 ID : **4410094439619**
Option 2 ID : **4410094439620**
Option 3 ID : **4410094439621**
Option 4 ID : **4410094439622**
Status : **Answered**
Chosen Option : **D**

Q.32 YIPO is related to WGRQ in a certain way based on the English alphabetical order. In the same way, MENO is related to KCPQ. To which of the given options is RTUI related, following the same logic? 976

Ans ✗ A. PPWK

✔ B. PRWK

✗ C. RRWK

✗ D. RPKW

Question ID : **4410091145771**
Option 1 ID : **4410094518042**
Option 2 ID : **4410094518041**
Option 3 ID : **4410094518043**
Option 4 ID : **4410094518040**
Status : **Answered**
Chosen Option : **B**

Q.33 Refer to the following number and symbol series and answer the question that follows. All numbers are single-digit numbers.

(Left) 1 & 5 * 3 ^ 6 £ $ 2 @ 8 % 7 4 ≺ 9 (Right)

If all the symbols are dropped from the series, which of the following will be fourth from the right?

Ans ✔ A. 8

✗ B. 6

✗ C. 2

✗ D. 7

Question ID : **4410091144852**
Option 1 ID : **4410094514365**
Option 2 ID : **4410094514367**
Option 3 ID : **4410094514366**
Option 4 ID : **4410094514364**
Status : **Answered**
Chosen Option : **A**

Q.34 In the following series, only one letter-cluster is incorrect. Select the INCORRECT letter-cluster.

ZDH JNR TWA DHL NRV1014

Ans
✗ A. NRV
✓ B. TWA
✗ C. JNR
✗ D. DHL

Question ID : **4410091145809**
Option 1 ID : **4410094518193**
Option 2 ID : **4410094518192**
Option 3 ID : **4410094518194**
Option 4 ID : **4410094518195**
Status : **Answered**
Chosen Option : **B**

Section : **Domain Knowledge**

Q.1 What kind of system is used in a secondary distribution to supply electricity to consumers?

Ans
✗ A. Single-phase, 2-wire system
✗ B. DC 2-wire system
✗ C. 3-phase, 3-wire system
✓ D. 3-phase, 4-wire system

Question ID : **441009463538**
Option 1 ID : **4410091812731**
Option 2 ID : **4410091812733**
Option 3 ID : **4410091812730**
Option 4 ID : **4410091812732**
Status : **Answered**
Chosen Option : **D**

Q.2 In a Schering bridge used for high voltage testing, which component is usually placed in the arm opposite to the unknown capacitor?

Ans
✗ A. Variable inductor
✗ B. Current transformer
✓ C. Standard capacitor
✗ D. Standard inductor

Question ID : **441009311303**
Option 1 ID : **4410091211640**
Option 2 ID : **4410091211642**
Option 3 ID : **4410091211641**
Option 4 ID : **4410091211639**
Status : **Answered**
Chosen Option : **A**

Q.3 Calculate the active power (P) in a balanced three-phase delta-connected system with line voltage V_L = 400 V, line current I_L = 10 A and power factor cosϕ = 0.8.

Ans
✗ A. 6400 W
✗ B. 4800 W
✗ C. 5900 W
✓ D. 5542 W

Question ID : **441009329814**
Option 1 ID : **4410091285688**
Option 2 ID : **4410091285686**
Option 3 ID : **4410091285687**
Option 4 ID : **4410091285689**
Status : **Answered**
Chosen Option : **B**

Q.4 What is the use of booster mirrors with a flat plate collector?

Ans
✓ A. To increase the beam radiation component on the absorber
✗ B. To increase the diffuse radiation component on the absorber
✗ C. To decrease the reflection to atmosphere
✗ D. To increase the reflection to atmosphere

Question ID : **441009931520**
Option 1 ID : **4410093679857**
Option 2 ID : **4410093679856**
Option 3 ID : **4410093679855**
Option 4 ID : **4410093679854**
Status : **Answered**
Chosen Option : **A**

Q.5 Which of the following types of keyboard is commonly interfaced with 8051?

Ans
✗ A. Wireless keyboard
✗ B. Optical keyboard
✗ C. Mechanical keyboard
✓ D. Matrix keyboard

Question ID : **441009372701**
Option 1 ID : **4410091456415**
Option 2 ID : **4410091456414**
Option 3 ID : **4410091456412**
Option 4 ID : **4410091456413**
Status : **Answered**
Chosen Option : **B**

Q.6 **Which of the following is correct for the maximum demand of a generating plant?**

(I) It determines installed capacity
(II) It is always higher than the connected load

Ans
✗ A. Both statements I and II are incorrect
✗ B. Only statement II is correct
✗ C. Both statements I and II are correct
✓ D. Only statement I is correct

Question ID : **441009271756**
Option 1 ID : **4410091055621**
Option 2 ID : **4410091055619**
Option 3 ID : **4410091055620**
Option 4 ID : **4410091055618**
Status : **Answered**
Chosen Option : **A**

Q.7 **In a singly fed distributor, what happens to the current as we move away from the feeding point?**

Ans
✗ A. It remains constant
✓ B. It decreases
✗ C. It increases
✗ D. It doubles

Question ID : **441009463532**
Option 1 ID : **4410091812707**
Option 2 ID : **4410091812708**
Option 3 ID : **4410091812706**
Option 4 ID : **4410091812709**
Status : **Answered**
Chosen Option : **B**

Q.8 **What does the superposition theorem state about the response in a circuit with multiple sources?**

Ans
✗ A. The total response is the difference between the individual responses.
✗ B. The total response is determined by the strongest source only.
✗ C. The total response is the product of the individual responses.
✓ D. The total response is the sum of the individual responses due to each source.

Question ID : **441009329530**
Option 1 ID : **4410091284565**
Option 2 ID : **4410091284564**
Option 3 ID : **4410091284562**
Option 4 ID : **4410091284563**
Status : **Not Answered**
Chosen Option : **--**

Q.9 Which of the following ports of the 8051 microcontroller DO NOT have any alternate function?

Ans
✗ A. Port 2
✗ B. Port 3
✓ C. Port 1
✗ D. Port 0

Question ID : **441009372689**
Option 1 ID : **4410091456366**
Option 2 ID : **4410091456367**
Option 3 ID : **4410091456365**
Option 4 ID : **4410091456364**
Status : **Answered**
Chosen Option : **D**

Q.10 How do analog sensors communicate with the 8051 microcontroller?

Ans
✓ A. By using an ADC (Analog to Digital Converter)
✗ B. By using PWM signal only
✗ C. Directly through I/O pins
✗ D. Through UART only

Question ID : **441009372809**
Option 1 ID : **4410091456825**
Option 2 ID : **4410091456826**
Option 3 ID : **4410091456824**
Option 4 ID : **4410091456827**
Status : **Answered**
Chosen Option : **A**

Q.11 During maintenance of a 3-phase induction motor, why is the vibration analysis performed?

Ans
✓ A. To detect misalignment and bearing defects
✗ B. To check the insulation resistance
✗ C. To measure slip frequency
✗ D. To assess power factor

Question ID : **441009356296**
Option 1 ID : **4410091391283**
Option 2 ID : **4410091391282**
Option 3 ID : **4410091391284**
Option 4 ID : **4410091391285**
Status : **Answered**
Chosen Option : **B**

Q.12 What is the primary function of a grid-interactive solar power system?

Ans
✗ A. Works only when grid fails
✗ B. Always receives power from the grid
✗ C. Supplies power to as well as receives power from the grid as required
✓ D. Always supplies power to the grid

Question ID : **441009931864**
Option 1 ID : **4410093681261**
Option 2 ID : **4410093681260**
Option 3 ID : **4410093681259**
Option 4 ID : **4410093681258**
Status : **Answered**
Chosen Option : **B**

Q.13 In a single-phase half-wave controlled rectifier with a resistive load, if the firing angle is 90°, what is the conduction angle?

Ans
✗ A. 45°
✗ B. 180°
✗ C. 60°
✓ D. 90°

Question ID : **441009293925**
Option 1 ID : **4410091142562**
Option 2 ID : **4410091142565**
Option 3 ID : **4410091142563**
Option 4 ID : **4410091142564**
Status : **Answered**
Chosen Option : **A**

Q.14 In a radial system, which part of the distributor carries the highest load?

Ans
✗ A. The far end of the distributor
✗ B. The middle of the distributor
✓ C. The end near the feeding point
✗ D. The end connected to consumers

Question ID : **441009463545**
Option 1 ID : **4410091812758**
Option 2 ID : **4410091812760**
Option 3 ID : **4410091812759**
Option 4 ID : **4410091812761**
Status : **Answered**
Chosen Option : **A**

Q.15 Which of the following best describes the working principle of a Permanent Magnet Moving Coil (PMMC) instrument?

Ans
✗ A. The coil is deflected by the mechanical force created by the battery in the circuit.
✗ B. The current causes a change in the resistance of the coil, which is measured.
✓ C. The coil experiences a torque due to the interaction with a magnetic field generated by a permanent magnet.
✗ D. The coil experiences a torque due to the interaction with the external electric field.

Question ID : **441009311678**
Option 1 ID : **4410091213133**
Option 2 ID : **4410091213134**
Option 3 ID : **4410091213132**
Option 4 ID : **4410091213131**
Status : **Answered**
Chosen Option : **B**

Q.16 In mesh analysis, how are the directions of mesh currents chosen?

Ans
✗ A. Must oppose each other in adjacent meshes
✓ B. Can be chosen arbitrarily
✗ C. Must follow the direction of voltage sources
✗ D. Always in clockwise direction

Question ID : **441009326439**
Option 1 ID : **4410091272080**
Option 2 ID : **4410091272081**
Option 3 ID : **4410091272078**
Option 4 ID : **4410091272079**
Status : **Answered**
Chosen Option : **D**

Q.17 What is the formula for calculating total apparent power (S) in a balanced three-phase star or delta system?

Ans
✗ A. $S = V_{Phase} \times I_{Phase}$
✗ B. $S = \sqrt{3} \times V_{Phase} \times I_{Phase}$
✓ C. $S = \sqrt{3} \times V_{Line} \times I_{Line}$
✗ D. $S = V_{Line} \times I_{Line}$

Question ID : **441009329829**
Option 1 ID : **4410091285749**
Option 2 ID : **4410091285748**
Option 3 ID : **4410091285746**
Option 4 ID : **4410091285747**
Status : **Answered**
Chosen Option : **C**

Q.18 Which of the following is a primary function of a measurement system?

Ans
✓ A. To determine the value of the measured quantity accurately
✗ B. To provide precise control of manufacturing processes
✗ C. To convert electrical energy into mechanical energy
✗ D. To amplify the input signal

Question ID : **441009311687**
Option 1 ID : **4410091213168**
Option 2 ID : **4410091213167**
Option 3 ID : **4410091213166**
Option 4 ID : **4410091213169**
Status : **Answered**
Chosen Option : **B**

Q.19 In a single-phase half-wave controlled rectifier with an RL load, under steady-state conditions, the SCR continues to conduct:

Ans
✗ A. for a fixed duration of 90° after firing
✗ B. only until the AC input becomes negative
✓ C. until the current through the SCR naturally falls to zero
✗ D. until the gate pulse is removed

Question ID : **441009293931**
Option 1 ID : **4410091142589**
Option 2 ID : **4410091142586**
Option 3 ID : **4410091142588**
Option 4 ID : **4410091142587**
Status : **Answered**
Chosen Option : **C**

Q.20 What is a key maintenance requirement for a single-phase induction motor?

Ans
✗ A. Replacing rotor windings
✗ B. Adjusting field coils
✗ C. Cleaning commutator
✓ D. Lubricating bearings regularly

Question ID : **441009355664**
Option 1 ID : **4410091388769**
Option 2 ID : **4410091388771**
Option 3 ID : **4410091388770**
Option 4 ID : **4410091388768**
Status : **Answered**
Chosen Option : **A**

Q.21 Diversity factor is usually:

Ans

✗ A. the ratio of the average Demand of the Entire System to the Maximum Demand

✗ B. the ratio of the Maximum Demand of the Entire System to the sum of Individual Maximum Demands

✗ C. the ratio of the average Demand of the Entire System to the sum of Individual Maximum Demands

✓ D. the ratio of sum of Individual Maximum Demands to the Maximum Demand of the Entire System

Question ID : **44100990958**
Option 1 ID : **441009361983**
Option 2 ID : **441009361981**
Option 3 ID : **441009361982**
Option 4 ID : **441009361980**
Status : **Answered**
Chosen Option : **A**

Q.22 Which energy source is predominantly used in India to meet national energy requirements, according to the 2025 energy scenario?

Ans

✗ A. Nuclear Energy

✗ B. Hydropower

✓ C. Coal

✗ D. Natural Gas

Question ID : **441009337513**
Option 1 ID : **4410091316025**
Option 2 ID : **4410091316027**
Option 3 ID : **4410091316026**
Option 4 ID : **4410091316024**
Status : **Answered**
Chosen Option : **A**

Q.23 What elements contribute to the restoration of frequency stability following a sudden fault in the grid system?

Ans

✗ A. Fuse and Circuit Breaker

✗ B. Load Changer

✓ C. Generator Governor Control

✗ D. Surge Arrester

Question ID : **441009281095**
Option 1 ID : **4410091092309**
Option 2 ID : **4410091092308**
Option 3 ID : **4410091092310**
Option 4 ID : **4410091092307**
Status : **Answered**
Chosen Option : **C**

Q.24 What is meant by node in an electric circuit?

Ans
✗ A. A node is defined as a loop which does not contain any other loops.
✗ B. A node is defined as a place where source is connected.
✓ C. A node is defined as a point where two or more branches are joined.
✗ D. A node is defined as a place where load is connected.

Question ID : **44100995194**
Option 1 ID : **441009378723**
Option 2 ID : **441009378720**
Option 3 ID : **441009378722**
Option 4 ID : **441009378721**
Status : **Answered**
Chosen Option : **B**

Q.25 How does a single-phase induction motor initially start rotating?

Ans
✗ A. By reversing current in the rotor
✓ B. Using an auxiliary winding to create a starting torque
✗ C. By using permanent magnets on the rotor
✗ D. Through a rotating magnetic field created by a single winding

Question ID : **441009355605**
Option 1 ID : **4410091388510**
Option 2 ID : **4410091388512**
Option 3 ID : **4410091388513**
Option 4 ID : **4410091388511**
Status : **Answered**
Chosen Option : **A**

Q.26 In which of the following applications is a switched reluctance motor most commonly used?

Ans
✗ A. AC compressor
✓ B. Electric vehicle drive train
✗ C. Analog wall clock
✗ D. Compact disc player

Question ID : **441009355535**
Option 1 ID : **4410091388238**
Option 2 ID : **4410091388239**
Option 3 ID : **4410091388240**
Option 4 ID : **4410091388241**
Status : **Answered**
Chosen Option : **B**

Q.27 Which of the following is commonly used to simplify a linear electrical network for easier analysis?

Ans
✗ A. Faraday's Law
✗ B. Joule's Law
✓ C. Superposition Theorem
✗ D. Lenz's Law

Question ID : **441009329528**
Option 1 ID : **4410091284557**
Option 2 ID : **4410091284555**
Option 3 ID : **4410091284554**
Option 4 ID : **4410091284556**
Status : **Answered**
Chosen Option : **C**

Q.28 What is the primary function of a Megger?

Ans
- ✗ A. To measure the resistance of electrical components
- ✗ B. To measure the voltage drop across conductors
- ✗ C. To measure the power consumption of an electrical device
- ✓ D. To measure the insulation resistance of electrical cables and equipment

Question ID : **441009326703**
Option 1 ID : **4410091273176**
Option 2 ID : **4410091273178**
Option 3 ID : **4410091273179**
Option 4 ID : **4410091273177**
Status : **Answered**
Chosen Option : **D**

Q.29 What is the main function of a snubber circuit in a TRIAC-based control system?

Ans
- ✗ A. Increase the conduction angle
- ✓ B. Prevent false triggering due to high dv/dt
- ✗ C. Increase load voltage
- ✗ D. Provide over-current protection

Question ID : **441009293985**
Option 1 ID : **4410091142845**
Option 2 ID : **4410091142847**
Option 3 ID : **4410091142846**
Option 4 ID : **4410091142848**
Status : **Not Answered**
Chosen Option : **--**

Q.30 Which of the following best defines the precision of a measuring instrument?

Ans
- ✗ A. Maximum error allowed by the instrument
- ✓ B. Ability of the instrument to reproduce the same reading under unchanged conditions
- ✗ C. Smallest change in the input that can be detected
- ✗ D. Closeness of the measured value to the true value

Question ID : **441009311365**
Option 1 ID : **4410091211884**
Option 2 ID : **4410091211882**
Option 3 ID : **4410091211883**
Option 4 ID : **4410091211881**
Status : **Answered**
Chosen Option : **C**

Q.31 To measure AC current using a CRO, which of the following is typically required?

Ans
- ✓ A. A current probe or shunt resistor for current measurement
- ✗ B. A rectifier circuit to convert AC to DC
- ✗ C. A low-frequency signal generator
- ✗ D. A capacitive divider to reduce voltage

Question ID : **441009311467**
Option 1 ID : **4410091212290**
Option 2 ID : **4410091212288**
Option 3 ID : **4410091212287**
Option 4 ID : **4410091212289**
Status : **Not Answered**
Chosen Option : **--**

Q.32 How much on-chip RAM is available in the 8051 microcontroller?

Ans
- ✗ A. 4 KB OTP
- ✗ B. 64 KB
- ✗ C. 256 bytes
- ✓ D. 128 bytes

Question ID : **441009372667**
Option 1 ID : **4410091456283**
Option 2 ID : **4410091456282**
Option 3 ID : **4410091456281**
Option 4 ID : **4410091456280**
Status : **Answered**
Chosen Option : **D**

Q.33 Which of the following parameters is significantly influenced by the height of an obstacle in the wind path?

Ans
- ✗ A. Solar irradiance
- ✓ B. Wind power density
- ✗ C. Air pressure
- ✗ D. Wind temperature

Question ID : **441009311977**
Option 1 ID : **4410091214337**
Option 2 ID : **4410091214334**
Option 3 ID : **4410091214336**
Option 4 ID : **4410091214335**
Status : **Answered**
Chosen Option : **B**

Q.34 The primary disadvantage of a single-phase semi converter compared to a full converter is that:

Ans
- ✗ A. it produces more harmonic distortion
- ✗ B. it cannot be controlled by the firing angle
- ✓ C. it can only provide positive output voltage
- ✗ D. it is more expensive to implement

Question ID : **441009293947**
Option 1 ID : **4410091142645**
Option 2 ID : **4410091142648**
Option 3 ID : **4410091142646**
Option 4 ID : **4410091142647**
Status : **Answered**
Chosen Option : **B**

Q.35 What is the effect of changing excitation in a synchronous motor operating at constant load?

Ans
- ✗ A. Change in motor speed
- ✗ B. Change in power output
- ✓ C. Change in power factor
- ✗ D. Change in torque angle

Question ID : **441009356272**
Option 1 ID : **4410091391186**
Option 2 ID : **4410091391187**
Option 3 ID : **4410091391188**
Option 4 ID : **4410091391189**
Status : **Answered**
Chosen Option : **C**

Q.36 What is the value of Self-GMD (or GMR) for a solid round conductor of radius r?

Ans
- ✔ A. 0.7788 × r
- ✘ B. 1.5 × r
- ✘ C. r^2
- ✘ D. 2 × r

Question ID : **441009471479**
Option 1 ID : **4410091841339**
Option 2 ID : **4410091841338**
Option 3 ID : **4410091841340**
Option 4 ID : **4410091841337**
Status : **Not Answered**
Chosen Option : **--**

Q.37 Why is the determination of the demand factor of plants essential during cost generation?

Ans
- ✔ A. It provides better load utilisation
- ✘ B. It is the ratio of connected load to maximum demand
- ✘ C. It calculates installed capacity of plant
- ✘ D. It determines the power loss of the plant

Question ID : **441009271570**
Option 1 ID : **4410091055103**
Option 2 ID : **4410091055105**
Option 3 ID : **4410091055104**
Option 4 ID : **4410091055102**
Status : **Not Answered**
Chosen Option : **--**

Q.38 Which of the following is a commonly used ADC IC to interface with the 8051 microcontroller?

Ans
- ✘ A. IC 555
- ✘ B. IC 741
- ✔ C. IC 0804
- ✘ D. IC 7400

Question ID : **441009372718**
Option 1 ID : **4410091456478**
Option 2 ID : **4410091456476**
Option 3 ID : **4410091456477**
Option 4 ID : **4410091456479**
Status : **Not Answered**
Chosen Option : **--**

Q.39 What is the primary requirement of aerodynamic surfaces on wind turbine blades?

Ans
- ✔ A. For efficient power conversion process
- ✘ B. To adjust the pitch angle of the blades for high wind speeds
- ✘ C. To generate more power at low wind speeds
- ✘ D. To increase rotor speed

Question ID : **44100952034**
Option 1 ID : **441009207264**
Option 2 ID : **441009207265**
Option 3 ID : **441009207267**
Option 4 ID : **441009207266**
Status : **Answered**
Chosen Option : **C**

Q.40 What is the main function of solar thermal water pumps?

Ans
✗ A. Uses electric powered pumps to circulate water heated by solar energy
✓ B. Uses solar thermal energy for the production of power to drive the pump
✗ C. Uses solar thermal energy to circulate hot water
✗ D. Uses solar thermal energy to evaporate water

Question ID : **441009931038**
Option 1 ID : **4410093677976**
Option 2 ID : **4410093677977**
Option 3 ID : **4410093677975**
Option 4 ID : **4410093677974**
Status : **Not Answered**
Chosen Option : **--**

Q.41 Why are BLDC motors preferred in drones and quadcopters?

Ans
✗ A. They operate at lower speeds
✓ B. They provide high torque and precise control
✗ C. They are cheaper than brushed motors
✗ D. They require no power supply

Question ID : **441009355529**
Option 1 ID : **4410091388215**
Option 2 ID : **4410091388216**
Option 3 ID : **4410091388214**
Option 4 ID : **4410091388217**
Status : **Answered**
Chosen Option : **A**

Q.42 Which of the following addressing modes is used in the instruction MOV A, #25H of the 8051 microcontroller?

Ans
✗ A. Register Indirect
✓ B. Immediate
✗ C. Register
✗ D. Direct

Question ID : **441009371080**
Option 1 ID : **4410091450223**
Option 2 ID : **4410091450220**
Option 3 ID : **4410091450221**
Option 4 ID : **4410091450222**
Status : **Answered**
Chosen Option : **D**

Q.43 In an oscilloscope, if the deflection sensitivity is 20 mV/cm, what is the voltage required to produce a 5 cm deflection?

Ans
✗ A. 0.5 V
✗ B. 0.2 V
✗ C. 2 V
✓ D. 0.1 V

Question ID : **441009311521**
Option 1 ID : **4410091212503**
Option 2 ID : **4410091212500**
Option 3 ID : **4410091212502**
Option 4 ID : **4410091212501**
Status : **Not Answered**
Chosen Option : **--**

Q.44 Why was a UPS NOT considered critical during early DOS operating systems?

Ans
✗ A. DOS was not used on computers.
✗ B. DOS had auto-restart features.
✗ C. DOS had built-in battery backup.
✓ D. DOS did not require a shutdown procedure.

Question ID : **441009293918**
Option 1 ID : **4410091142537**
Option 2 ID : **4410091142534**
Option 3 ID : **4410091142535**
Option 4 ID : **4410091142536**
Status : **Not Answered**
Chosen Option : **--**

Q.45 Which of the following is NOT true about direct drive generators in wind turbines?

Ans
✗ A. They often work with power electronic converters.
✗ B. They tend to have large diameters.
✗ C. They are used in variable-speed wind turbines.
✓ D. They require a gearbox to adjust rotor speeds.

Question ID : **44100952043**
Option 1 ID : **441009207303**
Option 2 ID : **441009207300**
Option 3 ID : **441009207301**
Option 4 ID : **441009207302**
Status : **Not Answered**
Chosen Option : **--**

Q.46 In which biasing condition does a Zener diode exhibit voltage regulation behaviour?

Ans
✗ A. No bias
✓ B. Reverse bias
✗ C. Forward bias
✗ D. Both forward and reverse biases

Question ID : **441009293963**
Option 1 ID : **4410091142735**
Option 2 ID : **4410091142734**
Option 3 ID : **4410091142733**
Option 4 ID : **4410091142736**
Status : **Answered**
Chosen Option : **C**

Q.47 Which of the following is a key characteristic of a Sankey (energy flow) diagram used to represent energy usage in a system?

Ans
✗ A. The length of the arrows represents energy quantity
✗ B. Energy losses are shown as upward-pointing arrows only
✗ C. Energy enters the diagram from the right side and exits to the left
✓ D. The width of each arrow corresponds to the amount of energy flow

Question ID : **441009337736**
Option 1 ID : **4410091316924**
Option 2 ID : **4410091316925**
Option 3 ID : **4410091316927**
Option 4 ID : **4410091316926**
Status : **Not Answered**
Chosen Option : **--**

Q.48 In nodal analysis, if a circuit has 'n' independent nodes, how many simultaneous equations are required to solve the node voltages?

Ans
✗ A. $n - 2$
✓ B. $n - 1$
✗ C. $n + 1$
✗ D. n

Question ID : **441009326509**
Option 1 ID : **4410091272385**
Option 2 ID : **4410091272384**
Option 3 ID : **4410091272383**
Option 4 ID : **4410091272382**
Status : **Not Answered**
Chosen Option : **--**

Q.49 What is the significance of applying an optimised load balancing approach in managing unbalanced feeders within an electrical distribution network?

Ans
✗ A. To increase the voltage, drop across feeder ends
✗ B. To complicate manual balancing operations
✓ C. To minimise losses due to imbalanced currents and improve system stability
✗ D. To reduce the need for transformer maintenance

Question ID : **441009337646**
Option 1 ID : **4410091316564**
Option 2 ID : **4410091316565**
Option 3 ID : **4410091316566**
Option 4 ID : **4410091316567**
Status : **Not Answered**
Chosen Option : **--**

Q.50 What is the primary reason for maintaining the same terminal voltage and current during a source transformation?

Ans
✗ A. To simplify internal resistance calculation
✗ B. To ensure the sources are connected in parallel
✓ C. To maintain the same amount of power delivered to the load
✗ D. To reduce the load impedance

Question ID : **441009329489**
Option 1 ID : **4410091284390**
Option 2 ID : **4410091284391**
Option 3 ID : **4410091284392**
Option 4 ID : **4410091284393**
Status : **Answered**
Chosen Option : **C**

Q.51 What is the equivalent conductance Geq when 'n' identical conductances each of value G are connected in parallel?

Ans
✗ A. G^n
✓ B. nG
✗ C. 1/nG
✗ D. G/n

Question ID : **441009329673**
Option 1 ID : **4410091285127**
Option 2 ID : **4410091285128**
Option 3 ID : **4410091285129**
Option 4 ID : **4410091285126**
Status : **Not Answered**
Chosen Option : **--**

Q.52 In what way does regular maintenance enhance a transformer's service life and energy performance by addressing potential issues before they lead to operational inefficiencies or failures?

Ans
✗ A. By reducing the need for protective device
✗ B. By allowing operation beyond rated capacity
✗ C. By increasing the operating temperature
✓ D. By identifying and addressing insulation deterioration

Question ID : **441009337581**
Option 1 ID : **4410091316307**
Option 2 ID : **4410091316305**
Option 3 ID : **4410091316304**
Option 4 ID : **4410091316306**
Status : **Not Answered**
Chosen Option : **--**

Q.53 What is the nature of armature reaction in a synchronous machine operating at zero power factor leading?

Ans
✗ A. Total cross magnetising
✓ B. Total magnetising
✗ C. Partially magnetising and partially cross magnetising
✗ D. No effect

Question ID : **441009355684**
Option 1 ID : **4410091388842**
Option 2 ID : **4410091388841**
Option 3 ID : **4410091388840**
Option 4 ID : **4410091388843**
Status : **Answered**
Chosen Option : **C**

Q.54 What primarily determines the power developed by a synchronous generator?

Ans
- ✗ A. Stator resistance
- ✗ B. Rotor speed only
- ✓ C. Rotor excitation and load angle
- ✗ D. Load power factor

Question ID : **441009355785**
Option 1 ID : **4410091389240**
Option 2 ID : **4410091389241**
Option 3 ID : **4410091389243**
Option 4 ID : **4410091389242**
Status : **Answered**
Chosen Option : **C**

Q.55 In the power-slip characteristic of an induction motor, what happens to power at '0' slip?

Ans
- ✓ A. Power is zero
- ✗ B. Power is half of maximum
- ✗ C. Power is maximum
- ✗ D. Power equals input power

Question ID : **441009356314**
Option 1 ID : **4410091391355**
Option 2 ID : **4410091391356**
Option 3 ID : **4410091391354**
Option 4 ID : **4410091391357**
Status : **Not Answered**
Chosen Option : **--**

Q.56 Which regulation requires the State Load Dispatch Centre (SLDCs) to operate independently from state utilities?

Ans
- ✓ A. Electricity Act 2003
- ✗ B. CERC Tariff Regulation Act 2019
- ✗ C. Energy Conversion Act 2001
- ✗ D. National Electricity Policy 2005

Question ID : **441009281130**
Option 1 ID : **4410091092450**
Option 2 ID : **4410091092449**
Option 3 ID : **4410091092448**
Option 4 ID : **4410091092447**
Status : **Answered**
Chosen Option : **B**

Q.57 What is a DIAC primarily used for in power electronics?

Ans
- ✗ A. Voltage regulation
- ✗ B. Signal amplification
- ✓ C. Triggering TRIACs
- ✗ D. Frequency modulation

Question ID : **441009293983**
Option 1 ID : **4410091142829**
Option 2 ID : **4410091142831**
Option 3 ID : **4410091142830**
Option 4 ID : **4410091142832**
Status : **Answered**
Chosen Option : **C**

Q.58 What is the typical cooking time of a paraboloidal dish cooker?

Ans
- ✗ A. 2-3 hr
- ✗ B. 6-12 hr
- ✓ C. 20-30 min
- ✗ D. 20-30 sec

Question ID : **441009931042**
Option 1 ID : **4410093677990**
Option 2 ID : **4410093677993**
Option 3 ID : **4410093677991**
Option 4 ID : **4410093677992**
Status : **Answered**
Chosen Option : **C**

Q.59 _____ are considered as series elements in the equivalent circuit of a long transmission line.

Ans
- ✗ A. Capacitance and conductance
- ✗ B. Resistance and capacitance
- ✓ C. Resistance and inductive reactance
- ✗ D. Reactance and susceptance

Question ID : **441009471506**
Option 1 ID : **4410091841445**
Option 2 ID : **4410091841447**
Option 3 ID : **4410091841446**
Option 4 ID : **4410091841448**
Status : **Not Answered**
Chosen Option : **--**

Q.60 According to Norton's theorem, any linear two-terminal circuit can be replaced by an equivalent circuit consisting of _____.

Ans
- ✓ A. a current source in parallel with an equivalent resistance
- ✗ B. a voltage source in parallel with an equivalent resistance
- ✗ C. a voltage source in series with an equivalent resistance
- ✗ D. a current source in series with an equivalent resistance

Question ID : **44100995112**
Option 1 ID : **441009378393**
Option 2 ID : **441009378394**
Option 3 ID : **441009378392**
Option 4 ID : **441009378395**
Status : **Not Answered**
Chosen Option : **--**

Q.61 What is the expression for the resonant frequency fr of a parallel RLC circuit?

Ans
✗ A. fr = 1/(2πRC)

✗ B. fr = $1/\sqrt{(L/C)}$

✗ C. fr = R/(2πL)

✓ D. fr = $1/(2\pi\sqrt{LC})$

Question ID : **441009329618**
Option 1 ID : **4410091284910**
Option 2 ID : **4410091284913**
Option 3 ID : **4410091284911**
Option 4 ID : **4410091284912**
Status : **Not Answered**
Chosen Option : **--**

Q.62 In a delta connected 3-phase system, V_L being the line voltage of the system in volts and I_L is the line current in amperes of the system. The apparent power is given by:

Ans
✗ A. $3\ V_L\ I_L$

✗ B. $\frac{V_L\ I_L}{3}$

✗ C. $V_L\ I_L$

✓ D. $\sqrt{3}\ V_L\ I_L$

Question ID : **44100996318**
Option 1 ID : **441009383318**
Option 2 ID : **441009383319**
Option 3 ID : **441009383316**
Option 4 ID : **441009383317**
Status : **Not Answered**
Chosen Option : **--**

Q.63 Which of the following is the key reason for preventive maintenance in small wind turbines?

Ans
✗ A. Avoid energy generation

✗ B. Shut down power continuously

✗ C. Increase installation cost

✓ D. Minimise downtime and prolong turbine life

Question ID : **441009312035**
Option 1 ID : **4410091214569**
Option 2 ID : **4410091214568**
Option 3 ID : **4410091214566**
Option 4 ID : **4410091214567**
Status : **Answered**
Chosen Option : **D**

Q.64 Which of the following best describes the purpose of using a Carey Foster bridge in inductance measurement?

Ans
✗ A. To determine capacitance in high-frequency circuits
✗ B. To eliminate the effect of mutual inductance in transformer testing
✗ C. To measure low resistance with high precision
✓ D. To compare two nearly equal inductances

Question ID : **441009311337**
Option 1 ID : **4410091211778**
Option 2 ID : **4410091211779**
Option 3 ID : **4410091211776**
Option 4 ID : **4410091211777**
Status : **Not Answered**
Chosen Option : **--**

Q.65 Which design modification in an energy-efficient motor contributes most to enhancing its magnetic efficiency?

Ans
✓ A. Use of low-loss silicon steel laminations
✗ B. Use of cast aluminium rotor
✗ C. Large air gap
✗ D. Shorter stator slots

Question ID : **441009337601**
Option 1 ID : **4410091316387**
Option 2 ID : **4410091316384**
Option 3 ID : **4410091316386**
Option 4 ID : **4410091316385**
Status : **Not Answered**
Chosen Option : **--**

Q.66 Which of the following is the main advantage of active stall control over passive stall control in wind turbines?

Ans
✗ A. It reduces turbine weight significantly
✗ B. It increases the swept area of the rotor
✓ C. It allows better regulation of power output at high wind speeds
✗ D. It completely eliminates the need for braking systems

Question ID : **441009312006**
Option 1 ID : **4410091214452**
Option 2 ID : **4410091214453**
Option 3 ID : **4410091214451**
Option 4 ID : **4410091214450**
Status : **Answered**
Chosen Option : **B**

Q.67 Fleming's right-hand rule is used to determine the direction of:

Ans
✗ A. magnetic field in a coil
✓ B. induced current in a generator winding
✗ C. force on a current-carrying conductor
✗ D. voltage drop in a resistor

Question ID : **441009329713**
Option 1 ID : **4410091285286**
Option 2 ID : **4410091285287**
Option 3 ID : **4410091285288**
Option 4 ID : **4410091285289**
Status : **Answered**
Chosen Option : **B**

Q.68 What does the interconnected system reduce during peak load hours?

Ans
✗ A. Transformer size
✓ B. Reserve power capacity
✗ C. Cable length
✗ D. Power factor

Question ID : **441009463541**
Option 1 ID : **4410091812744**
Option 2 ID : **4410091812743**
Option 3 ID : **4410091812745**
Option 4 ID : **4410091812742**
Status : **Answered**
Chosen Option : **D**

Q.69 What is the effect of non-uniform current distribution due to the proximity effect?

Ans
✗ A. Reduced efficiency
✗ B. Better power factor
✓ C. Increased effective resistance
✗ D. Increased voltage

Question ID : **441009471492**
Option 1 ID : **4410091841389**
Option 2 ID : **4410091841392**
Option 3 ID : **4410091841390**
Option 4 ID : **4410091841391**
Status : **Answered**
Chosen Option : **B**

Q.70 Which of following is NOT an example of solid biomass?

Ans
✓ A. Natural Gas
✗ B. Wood Pellets
✗ C. Municiple Solid Waste
✗ D. Agriculture Waste

Question ID : **441009286599**
Option 1 ID : **4410091113371**
Option 2 ID : **4410091113369**
Option 3 ID : **4410091113372**
Option 4 ID : **4410091113370**
Status : **Answered**
Chosen Option : **B**

Q.71 In a circuit having pure inductor with an AC source, what is the phase difference between the current and voltage?

Ans
✗ A. Voltage leads current by an angle less than π/2.
✓ B. Current lags voltage by π/2.
✗ C. Current leads voltage by π/2.
✗ D. Voltage and current are in phase.

Question ID : **441009329788**
Option 1 ID : **4410091285584**
Option 2 ID : **4410091285585**
Option 3 ID : **4410091285583**
Option 4 ID : **4410091285582**
Status : **Not Answered**
Chosen Option : **--**

Q.72 What is the most accurate description of how 'direct hooking' is used to illegally access electricity?

Ans
✗ A. Bypassing the circuit breaker to reduce voltage drop
✗ B. Installing legal sub-meters to monitor internal energy use
✓ C. Illegally tapping into power lines before the meter to avoid billing
✗ D. Using energy-efficient appliances to reduce consumption

Question ID : **441009337653**
Option 1 ID : **4410091316593**
Option 2 ID : **4410091316592**
Option 3 ID : **4410091316595**
Option 4 ID : **4410091316594**
Status : **Not Answered**
Chosen Option : **--**

Q.73 Which device within an APFC panel detects the power factor and triggers the switching of capacitor banks?

Ans
✓ A. Power factor relay controller
✗ B. Current transformer
✗ C. Voltage regulator
✗ D. Overload relay

Question ID : **441009337593**
Option 1 ID : **4410091316352**
Option 2 ID : **4410091316354**
Option 3 ID : **4410091316353**
Option 4 ID : **4410091316355**
Status : **Answered**
Chosen Option : **B**

Q.74 Which of the following is a conditional jump instruction in the 8051 microcontroller?

Ans
✓ A. JNZ
✗ B. AJMP
✗ C. SJMP
✗ D. NOP

Question ID : **441009372677**
Option 1 ID : **4410091456322**
Option 2 ID : **4410091456321**
Option 3 ID : **4410091456320**
Option 4 ID : **4410091456323**
Status : **Not Answered**
Chosen Option : **--**

Q.75 In a circuit containing pure resistance, how are the alternating voltage and current related?

Ans

✗ A. Current leads voltage by π/2.

✗ B. Voltage lags current by π/2.

✓ C. Voltage and current are in phase with each other.

✗ D. Voltage leads current by π/2.

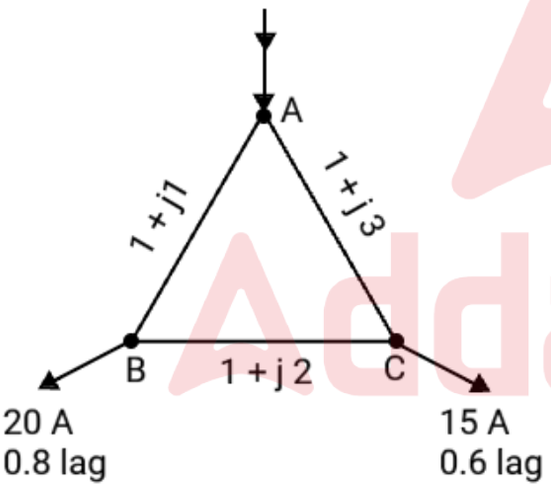
Question ID : **441009329796**
Option 1 ID : **4410091285615**
Option 2 ID : **4410091285617**
Option 3 ID : **4410091285616**
Option 4 ID : **4410091285614**
Status : **Not Answered**
Chosen Option : **--**

Q.76 A single-phase ring distributor ABC is fed at point A. The loads at B and C are as follows:
At point B: 20 A at 0.8 power factor lagging
At point C: 15 A at 0.6 power factor lagging

The impedances of the sections are as follows:
AB = (1 + j1) ohm
BC = (1 + j2) ohm
CA = (1 + j3) ohm

It is given that
Current in section AB = 16 − j12 ohm and
Current in section AC = 9 − j12 ohm.

What is the value of the total current fed at point A?



Ans

✗ A. 27 − j20 A

✓ B. 25 − j24 A

✗ C. 34 − j30 A

✗ D. 26 − j22 A

Question ID : **441009471448**
Option 1 ID : **4410091841215**
Option 2 ID : **4410091841214**
Option 3 ID : **4410091841213**
Option 4 ID : **4410091841216**
Status : **Not Answered**
Chosen Option : **--**

Q.77 What is the plant use factor of generating plant of capacity 50 MW runs at full load throughout the day?

Ans

✗ A. 0.25

✗ B. 2.0

✓ C. 1.0

✗ D. 0.5

Question ID : **441009272440**
Option 1 ID : **4410091058318**
Option 2 ID : **4410091058317**
Option 3 ID : **4410091058315**
Option 4 ID : **4410091058316**
Status : **Answered**
Chosen Option : **A**

Q.78 The thermal resistance of the thyristor is _____.

Ans

✗ A. always zero

✗ B. independent of power loss by the thyristor

✓ C. inversely proportional to the power dissipated by the thyristor

✗ D. directly proportional to the power loss by the thyristor

Question ID : **44100988753**
Option 1 ID : **441009353014**
Option 2 ID : **441009353013**
Option 3 ID : **441009353012**
Option 4 ID : **441009353011**
Status : **Answered**
Chosen Option : **B**

Q.79 What is the formula for equivalent equilateral spacing d used in inductance calculation for an unsymmetrically spaced transposed line?

Ans

✓ A. $d = \sqrt[3]{(d_1 * d_2 * d_3)}$

✗ B. $d = \min((d_1, d_2, d_3)$

✗ C. $d = \sqrt{\frac{(d_1^2 + d_2^2 + d_3^2)}{3}}$

✗ D. $d = \frac{(d_1 + d_2 + d_3)}{3}$

Question ID : **441009471488**
Option 1 ID : **4410091841374**
Option 2 ID : **4410091841376**
Option 3 ID : **4410091841375**
Option 4 ID : **4410091841373**
Status : **Not Answered**
Chosen Option : **--**

Q.80 According to Norton's theorem, any linear two-terminal network can be replaced by which of the following equivalent circuits?

Ans
✔ A. A current source in parallel with a resistance
✘ B. A voltage source in series with a resistance
✘ C. A voltage source in parallel with a resistance
✘ D. A current source in series with a resistance

Question ID : **441009329519**
Option 1 ID : **4410091284520**
Option 2 ID : **4410091284518**
Option 3 ID : **4410091284521**
Option 4 ID : **4410091284519**
Status : **Not Answered**
Chosen Option : **--**

Q.81 Which of the following statements best describes the energy efficiency advantage of LED bulbs compared to CFL and incandescent bulbs?

Ans
✘ A. CFL bulbs are more energy efficient than LEDs but produce lower quality light.
✘ B. LEDs produce about the same light output per watt as incandescent bulbs but last longer.
✘ C. Incandescent bulbs are the most energy efficient but have a shorter lifespan than LEDs.
✔ D. LEDs have an efficiency of around 130 lumens per watt, making them more than twice as efficient as CFLs and over ten times more efficient than incandescent bulbs.

Question ID : **441009337672**
Option 1 ID : **4410091316670**
Option 2 ID : **4410091316668**
Option 3 ID : **4410091316671**
Option 4 ID : **4410091316669**
Status : **Answered**
Chosen Option : **B**

Q.82 Which of the following ports of the 8051 microcontroller requires pull up resistors for its functioning?

Ans
✘ A. Port 3
✔ B. Port 0
✘ C. Port 1
✘ D. Port 2

Question ID : **441009372769**
Option 1 ID : **4410091456671**
Option 2 ID : **4410091456668**
Option 3 ID : **4410091456669**
Option 4 ID : **4410091456670**
Status : **Answered**
Chosen Option : **B**

Q.83 What is the sequence in steps required in an agrichemical-based power plant for electricity generation?
(I)Feedstock Storage (II) Feedstock Preparation (III) Feedstock Identification (IV) Power generation

Ans
✗ A. IV, III, II and I
✓ B. III, I, II and IV
✗ C. I, III, II and IV
✗ D. I, II, IV and III

Question ID : **441009286560**
Option 1 ID : **4410091113214**
Option 2 ID : **4410091113215**
Option 3 ID : **4410091113216**
Option 4 ID : **4410091113213**
Status : **Answered**
Chosen Option : **B**

Q.84 A 3-phase synchronous generator delivers 100 kW output power. The total losses amount to 5 kW. What is the efficiency of the generator?

Ans
✗ A. 90%
✗ B. 97%
✗ C. 92.5%
✓ D. 95.24%

Question ID : **441009355775**
Option 1 ID : **4410091389200**
Option 2 ID : **4410091389203**
Option 3 ID : **4410091389202**
Option 4 ID : **4410091389201**
Status : **Answered**
Chosen Option : **D**

Q.85 An induction motor has rotor resistance Rr=0.5 and rotor reactance Xr=1.5. At what slip does the motor develop maximum running torque?

Ans
✗ A. 0.15
✗ B. 1.5
✓ C. 0.33
✗ D. 0.60

Question ID : **441009356338**
Option 1 ID : **4410091391458**
Option 2 ID : **4410091391461**
Option 3 ID : **4410091391459**
Option 4 ID : **4410091391460**
Status : **Answered**
Chosen Option : **B**