

AP Vidyut Recruitment Exam 23rd to 27th Aug 2026

Hall Ticket Number	
Participant Name	
Test Center Name	
Test Time	9:00 AM - 12:00 PM
Test Date	24/08/2026
Subject	Mechanical Engineering

Section : General Intelligence and Reasoning

Q.1 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 spoons are forks.
All cutlery are forks.

Conclusions:

(I) Some spoons are cutlery.
(II) Some forks are cutlery.1269

- Ans ☒ 1. Only conclusion (II) follows.
- ☐ 2. Both conclusions (I) and (II) follow.
- ☐ 3. Only conclusion (I) follows.
- ☐ 4. Neither conclusion (I) nor (II) follows.

Question ID : 441009787399
Chosen Option : 1

Q.2 Seven people, J, K, L, M, S, T and U are sitting in a row, facing north. Only three people sit between S and M. J sits to the immediate left of M. No one sits to the right of L. Only two people sit between L and J. T sits to the immediate right of K. How many people sit between U and T?

- Ans ☐ 1. One
- ☐ 2. Three
- ☐ 3. Four
- ☒ 4. Two

Question ID : 441009512081
Chosen Option : 4



ALL EXAMS, **ONE** SUBSCRIPTION



Test. Analyze. Improve. Repeat.



*Don't just
prepare.
Perform.*

Test Prime – built only
for mock tests.



1,50,000+
Mock Tests



25,000+
Previous Year
Papers



800+
Exam
Covered



500%
Refund on
Selection



5 lakh+
Free Quizzes



Daily
Free PDFs



Top Alerts
Stay Updated

WHY TEST PRIME?

- ✓ Multilingual
- ✓ Detailed Solution
- ✓ Strong and Weak Areas
- ✓ All India Rankings



Safe & Reliable



Trusted by
Lakhs of Aspirants



Your Success,
Our Mission



**DOWNLOAD
TEST PRIME**

Your Success Partner!



Test

Prime



SUCCESS GALLERY!

MEET THE ACHIEVERS



Shreya, SBI PO



Sahil, SBI PO



Srijita, SBI PO



Vikram, IBPS PO



Neeti, IBPS PO



Arya, IBPS PO



Hasan, SSC CGL



Palak, SSC CGL



Priti, UP TGT



Aniket, Bihar Stet



Shaurya, NTPC



Sarita, CTET



Gourav, NTPC



Sanni, NTPC



Abhishek, CTET



Sapna, IBPS Clerk

THEY DID IT. YOU CAN TOO

READ THEIR STORIES!



Q.3 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 conclusions logically follow(s) from the statements.

Statements:
All monkeys are kangaroos.
Some kangaroos are tigers.

Conclusions:
I. Some monkeys are tigers.
II. Some kangaroos are monkeys.3712

- Ans
- ☒ 1. Neither conclusion I nor II follows
 - ☒ 2. Only conclusion I follows
 - ☒ 3. Only conclusion II follows
 - ☒ 4. Both conclusions I and II follow

Question ID : 441009724182
Chosen Option : 3

Q.4 The position(s) of how many letters will remain unchanged if each of the letters in the word HAEMOLYSIN is arranged in reverse English alphabetical order?2018

- Ans
- ☒ 1. Zero
 - ☒ 2. One
 - ☒ 3. Two
 - ☒ 4. Three

Question ID : 441009814650
Chosen Option : 1

Q.5 What should come in place of '?' in the given series?
0 11 33 66 110 ?

- Ans
- ☒ 1. 165
 - ☒ 2. 164
 - ☒ 3. 162
 - ☒ 4. 163

Question ID : 4410091202835
Chosen Option : 1

Section : General awareness

Q.6 Which of the following is a recognized language included in the Eighth Schedule of the Indian Constitution?

- Ans
- ☒ 1. Tulu
 - ☒ 2. Bhojpuri
 - ☒ 3. Maithili
 - ☒ 4. Rajasthani

Question ID : 4410092201161
Chosen Option : 4

Q.7 In June 2026, India won 114 medals, including 102 gold medals, at the inaugural edition of which championship?

- Ans
- ☐ 1. Asian Indoor Rowing Championships
 - ☐ 2. Asian Para Athletics Championships
 - ☒ 3. World Yogasana Championships
 - ☐ 4. World Junior Shooting Championships

Question ID : 4410092201050
Chosen Option : 2

Q.8 What is the predominant soil type found in the Great Indian Desert region?

- Ans
- ☐ 1. Alluvial soil forms the main surface in the desert
 - ☒ 2. Sandy soil with low organic content dominates the area
 - ☐ 3. Black cotton soil is common throughout the region
 - ☐ 4. Laterite soil is prevalent due to seasonal rains

Question ID : 4410092258052
Chosen Option : 2

Q.9 Which of the following social reformers strongly opposed child marriage and promoted widow remarriage?

- Ans
- ☐ 1. Bipin Chandra Pal
 - ☐ 2. Lala Lajpat Rai
 - ☒ 3. Ishwar Chandra Vidyasagar
 - ☐ 4. Subhas Chandra Bose

Question ID : 4410092201157
Chosen Option : 3

Q.10 Who among the following first used the expression “First War of Independence” in nationalist historiography for the Revolt of 1857?

- Ans
- ☐ 1. Bal Gangadhar Tilak
 - ☐ 2. Lala Lajpat Rai
 - ☐ 3. Subhas Chandra Bose
 - ☒ 4. V. D. Savarkar

Question ID : 4410092201145
Chosen Option : 1

Q.11 Which geological feature best explains the presence of black soils in the Deccan region of the Peninsular Plateau?

- Ans
- ☒ 1. Extensive volcanic activity formed basaltic rocks
 - ☐ 2. Widespread accumulation of limestone layers
 - ☐ 3. Prevailing marine sedimentation processes
 - ☐ 4. Continuous alluvial deposition from major rivers

Question ID : 4410092258050
Chosen Option : 4

Q.12 According to the Economic Survey 2025-26, India remained the world's largest recipient of remittances with inflows of:

- Ans
- ☐ 1. US\$ 235.4 billion in FY25
 - ☐ 2. US\$ 164.4 billion in FY25
 - ☐ 3. US\$ 335.4 billion in FY25
 - ☒ 4. US\$ 135.4 billion in FY25

Question ID : 4410091578952
Chosen Option : 1

Section : English

Comprehension:

Read the passage carefully and answer all the questions that follow.
The United Nations declared 2025 as the International Year of Quantum Science and Technology to recognise the contributions of quantum research to modern science and innovation. Quantum technologies are based on principles of quantum physics and have the potential to influence areas such as computing, communication, healthcare, and scientific measurement. Researchers are exploring ways to develop advanced quantum systems that can solve complex problems and improve technological capabilities. However, experts also emphasise the need for responsible development, skilled professionals, and international cooperation to ensure that these technologies benefit society. Educational initiatives and research programmes are encouraged to increase awareness and strengthen scientific capacity among future generations. The global focus on quantum science highlights the importance of supporting innovation while considering ethical, social, and practical challenges associated with emerging technologies.

SubQuestion No : 13

Q.13 Select the best title that fits the passage.

- Ans
- ☐ 1. Financial Restructuring Strategies for Global Telecommunication Networks
 - ☒ 2. Promoting and Managing the Global Future of Quantum Science
 - ☐ 3. The Universal Resolution of Practical Challenges in Modern Physics
 - ☐ 4. Institutional Strategies for Training Next-Generation Quantum Physicists

Question ID : 4410092412134
Chosen Option : 2

Comprehension:

Read the passage carefully and answer all the questions that follow.
The United Nations declared 2025 as the International Year of Quantum Science and Technology to recognise the contributions of quantum research to modern science and innovation. Quantum technologies are based on principles of quantum physics and have the potential to influence areas such as computing, communication, healthcare, and scientific measurement. Researchers are exploring ways to develop advanced quantum systems that can solve complex problems and improve technological capabilities. However, experts also emphasise the need for responsible development, skilled professionals, and international cooperation to ensure that these technologies benefit society. Educational initiatives and research programmes are encouraged to increase awareness and strengthen scientific capacity among future generations. The global focus on quantum science highlights the importance of supporting innovation while considering ethical, social, and practical challenges associated with emerging technologies.

SubQuestion No : 14

Q.14 Which of the following facts is true according to the passage?

- Ans
- ☒ 1. Quantum advancement depends entirely on individual researchers.
 - ☒ 2. Quantum applications are restricted strictly to numerical computing.
 - ☒ 3. Quantum research requires skilled expertise and responsible development.
 - ☒ 4. The United Nations mandated centralized global technological oversight.

Question ID : 4410092412135
Chosen Option : 3

Q.15 Complete the sentence with the most appropriate direct speech option.
The police asked the driver where he was going. The driver replied that he was just heading home.

Police: "Where are you going?"
Driver: "_____."

- Ans
- ☒ 1. I am just heading home
 - ☒ 2. I must just head home
 - ☒ 3. I will be just heading home
 - ☒ 4. I was just heading home

Question ID : 4410091535319
Chosen Option : 1

Q.16 Select the correct option to complete the sentence.
She completed the statistical analysis _____ to ensure the data remained consistent with the revised methodology.

- Ans
- ☒ 1. cursorily
 - ☒ 2. arbitrarily
 - ☒ 3. precipitously
 - ☒ 4. assiduously

Question ID : 4410091556286
Chosen Option : 2

Q.17 The parts of a sentence are given below. While the first part (S) is fixed and correctly placed, the remaining segments are jumbled. Rearrange them to form a clear, meaningful, and grammatically correct sentence.

S. The Cold War created

A. nations for decades

B. relations between powerful

C. increased military competition

D. and shaped international

Ans  1. CBAD

 2. CDBA

 3. BDAC

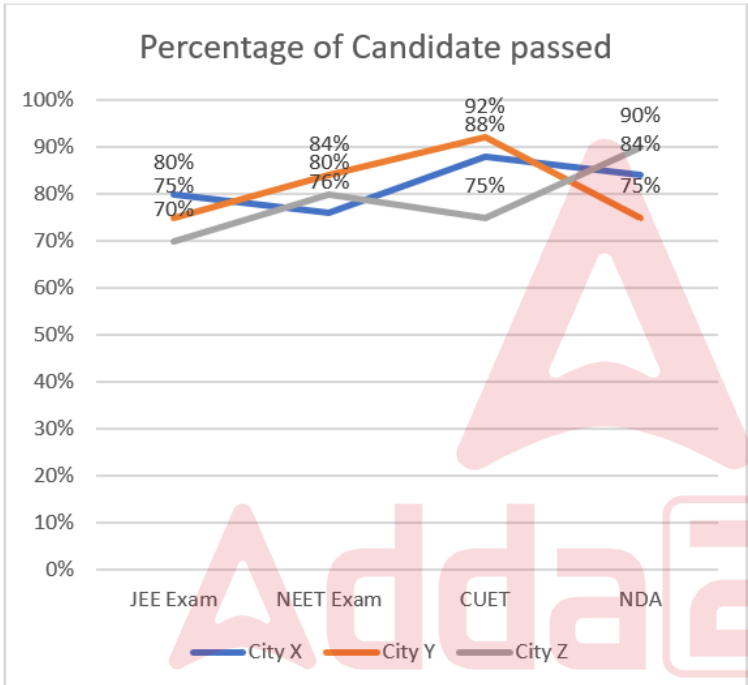
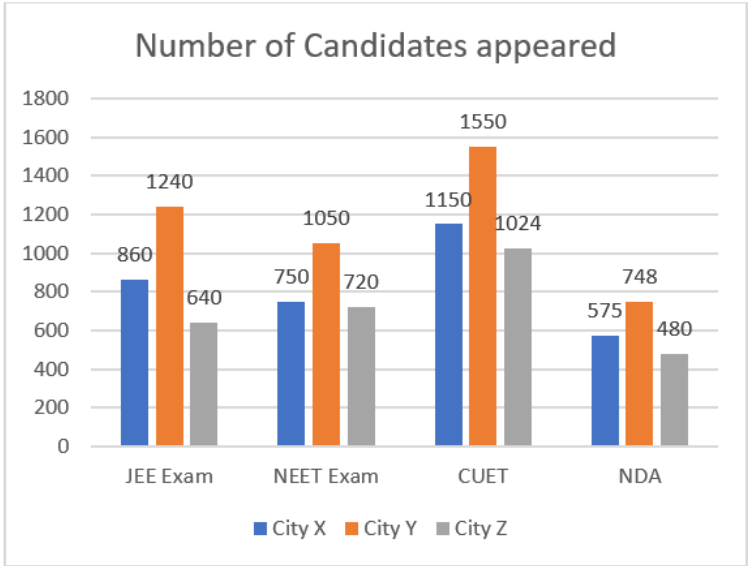
 4. BACD

Question ID : 4410091868874
Chosen Option : 2

Section : Quantitative aptitude



Q.18 The following bar graph shows the number of candidates appeared in four different exams from three different cities and the line graph shows the percentage of the candidates who got passed in these exams.



Find the ratio of the number of students who passed in NEET exam from city Y to the number of students who passed in CUET exam from city X.

- Ans ☒ 1. 441 : 506
- ☐ 2. 221 : 437
- ☐ 3. 441 : 515
- ☐ 4. 221 : 506

Question ID : 4410092188554
Chosen Option : 2

Q.19 The average of three numbers is 22. If two numbers are 14 and 26, the third number is:

- Ans
- ☐ 1. 25
 - ☐ 2. 28
 - ☐ 3. 27
 - ☒ 4. 26

Question ID : 441009581206
Chosen Option : 4

Q.20 Three friends, P, Q, and R, start running simultaneously from the same point on a 240-metre circular track. P and R run in the same direction with speeds of 8 m/s and 4 m/s, respectively, while Q runs in the opposite direction to P at a speed of 4 m/s. After how many seconds will all three be together at the same point on the track for the first time?

- Ans
- ☐ 1. 200
 - ☒ 2. 120
 - ☐ 3. 140
 - ☐ 4. 180

Question ID : 4410092188559
Chosen Option : 2

Q.21 AB is parallel to CD. A transversal PQ intersects AB and CD at E and F, respectively, and $\angle PEB = 78^\circ$. G is a point between AB and CD such that $\angle BEG = 19^\circ$ and $\angle GFE = 24^\circ$. What is the measure of $\angle EGF$?

- Ans
- ☐ 1. 64°
 - ☐ 2. 65°
 - ☐ 3. 71°
 - ☒ 4. 73°

Question ID : 441009601582
Chosen Option : 2

Q.22 A, B and C enter into a partnership. A invests twice as much as B invests and B invests thrice as much as C invests. At the end of the year a profit of ₹1,60,000 is earned. Find the profit share of B.

- Ans
- ☐ 1. ₹50,000
 - ☐ 2. ₹90,000
 - ☐ 3. ₹60,000
 - ☒ 4. ₹48,000

Question ID : 4410091355632
Chosen Option : 4

Q.23 The population of a town increases by 10% in the first year and decreases by 10% in the second year. Determine the overall percentage change in the population over the two years.

- Ans
- ☐ 1. No change
 - ☐ 2. 2% decrease
 - ☒ 3. 1% decrease
 - ☐ 4. 1% increase

Question ID : 4410091256990
Chosen Option : 3

Q.24 Ravina has a cylindrical glass having radius 3.5 cm and height

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



- Ans
- ☐ 1. 1
 - ☐ 2. 0.66
 - ☐ 3. 1.515
 - ☒ 4. 1.155

Question ID : 441009601728
Chosen Option : 3

Q.25 The value of $16^3 - 8^3$ is:

- Ans
- ☐ 1. 3421
 - ☐ 2. 3632
 - ☐ 3. 3331
 - ☒ 4. 3584

Question ID : 4410091220571
Chosen Option : 4

Section : Computer knowledge

Q.26 In the MS Word print dialog, what effect does changing the number in the 'Copies' field have?

- Ans
- ☐ 1. It speeds up the printing process for large documents
 - ☐ 2. It increases the font size for all printed pages
 - ☒ 3. It determines how many duplicates of the document will be printed
 - ☐ 4. It changes the number of pages per sheet in the printout

Question ID : 4410092275889
Chosen Option : 3

Q.27 During the evolution of computers, which development marked the beginning of the third generation of computers?

- Ans
- ☐ 1. The development of graphical user interfaces
 - ☐ 2. The use of transistors
 - ☒ 3. The introduction of integrated circuits
 - ☐ 4. The adoption of optical storage media

Question ID : 4410092306896
Chosen Option : 1

Q.28 Which Excel feature or formula is most effective for converting formula-generated data from rows into columns?

- Ans
- ☐ 1. Use INDIRECT for transposing
 - ☐ 2. Use OFFSET for transposing
 - ☐ 3. Use PASTE SPECIAL for transpose
 - ☒ 4. Use TRANSPOSE function

Question ID : 4410092307312
Chosen Option : 2

Q.29 During a presentation to a client, which approach ensures that each slide advances smoothly in sequence without manual intervention when demonstrating a new product feature set?

- Ans
- ☐ 1. Using the print preview option during the presentation
 - ☐ 2. Manually advancing each slide using keyboard or mouse
 - ☐ 3. Restarting the software to trigger the next slide
 - ☒ 4. Setting automatic timings for each slide before starting the show

Question ID : 4410092276353
Chosen Option : 2

Q.30 A company employee sends a digital message with documents to a client using the internet. The message reaches the client's inbox within seconds and can be replied to electronically. Which option best describes an electronic mail (e-mail)?

- Ans
- ☒ 1. A method of sending messages digitally between computers over a network
 - ☐ 2. A device used to connect computers to a network
 - ☐ 3. A method of sending messages digitally between computers without a network
 - ☐ 4. A tool for making voice calls between computers

Question ID : 4410092307592
Chosen Option : 2

Q.31 In a psychrometric chart, constant enthalpy lines are approximately parallel to:

- Ans
- ☐ 1. Constant specific volume lines
 - ☐ 2. Constant relative humidity lines
 - ☐ 3. Constant dry bulb temperature lines
 - ☒ 4. Constant wet bulb temperature lines

Question ID : 4410091399205
Chosen Option : 2

Q.32 The thermodynamic temperature scale is independent of:

- Ans
- ☐ 1. The efficiency of a Carnot engine
 - ☐ 2. The second law of thermodynamics
 - ☐ 3. The zeroth law of thermodynamics
 - ☒ 4. The properties of any particular substance

Question ID : 4410091372849
Chosen Option : 3

Q.33 The effective energy content(Exergy) of a reservoir decreases as:

- Ans
- ☐ 1. the pressure increases
 - ☐ 2. the mass decreases
 - ☐ 3. the velocity rises
 - ☒ 4. the temperature approaches environment

Question ID : 4410091327785
Chosen Option : 1

Q.34 If the same body is completely submerged in equal volumes of different fluids, in which fluid will it experience the maximum buoyant force?

- Ans
- ☐ 1. Oil
 - ☒ 2. Mercury
 - ☐ 3. Alcohol
 - ☐ 4. Water

Question ID : 441009258545
Chosen Option : 4

Q.35 Lambert's Cosine Law is applicable to which type of surfaces?

- Ans
- ☒ 1. Diffuse radiating surfaces
 - ☐ 2. Transparent surfaces
 - ☐ 3. Surfaces that reflect like mirrors
 - ☐ 4. Perfect black bodies only

Question ID : 4410091069109
Chosen Option : 3

Q.36 Which of the following describes the direction of the Coriolis acceleration?

- Ans
- ☒ 1. Radially outward direction
 - ☐ 2. Perpendicular to the relative velocity and rotation axis
 - ☐ 3. Along the direction of the axis of rotation
 - ☐ 4. Radially inward direction

Question ID : 4410091235628
Chosen Option : 2

Q.37 Which factor is most critical in determining the optimal interstage pressure for a Multi-stage reciprocating compressor operating at high pressure ratios?

- Ans
- ☒ 1. The ratio of final to initial pressure
 - ☐ 2. Piston speed of the second stage
 - ☐ 3. Discharge temperature of the last stage
 - ☐ 4. Cylinder diameter of the first stage

Question ID : 4410091684716
Chosen Option : 2

Q.38 Which sequence correctly represents the flow process inside a ramjet engine from inlet to exhaust?

- Ans
- ☐ 1. Combustion, compression by inlet, expansion through nozzle
 - ☐ 2. Expansion through nozzle, combustion, compression by inlet
 - ☒ 3. Compression by inlet, combustion, expansion through nozzle
 - ☐ 4. Mechanical compression, combustion, expansion through nozzle

Question ID : 4410092234367
Chosen Option : 3

Q.39 What is calculated in each row and column during Vogel's Approximation Method (VAM) to assist in making the allocation decision?

- Ans
- ☐ 1. Maximum supply
 - ☐ 2. Average cost
 - ☒ 3. Penalty cost
 - ☐ 4. Total demand

Question ID : 4410091121766
Chosen Option : 1

Q.40 For a cantilever beam subjected to a uniformly distributed load, which internal force primarily contributes to the strain energy stored in the beam?

- Ans
- ☐ 1. Shear force
 - ☒ 2. Bending moment
 - ☐ 3. Torsional moment
 - ☐ 4. Axial force

Question ID : 4410092229871
Chosen Option : 2

Q.41 An undamped mass–spring system has its mass doubled while the spring stiffness remains unchanged. How does the natural frequency of free vibration change?

- Ans
- ✗ 1. The natural frequency decreases by a factor of 2
 - ✗ 2. The natural frequency decreases by a factor of $\sqrt{2}$
 - ✓ 3. The natural frequency increases by a factor of $\sqrt{2}$
 - ✗ 4. The natural frequency increases by a factor of 2

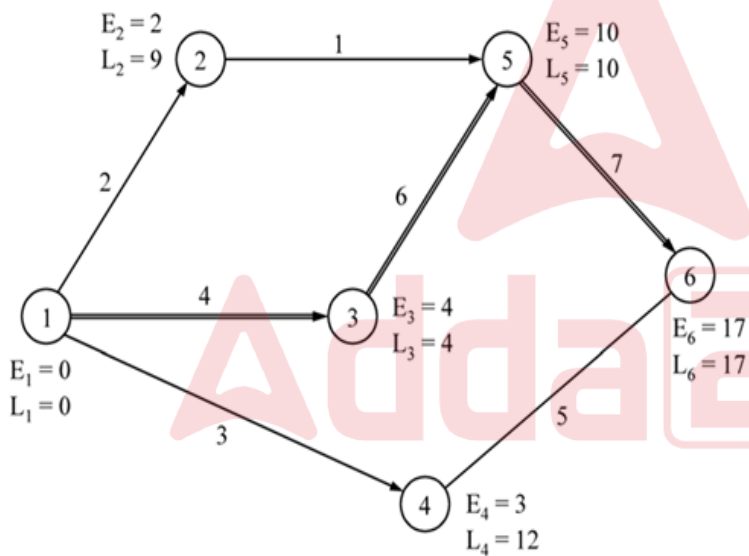
Question ID : 4410092229895
Chosen Option : 2

Q.42 An industrial valve is fitted with a damper to prevent oscillations after actuation. If the system is designed to be overdamped instead of critically damped, what will be the most likely effect?

- Ans
- ✗ 1. The valve returns instantly to its closed position.
 - ✗ 2. The valve returns faster with oscillations.
 - ✗ 3. The valve exhibits unstable oscillations.
 - ✓ 4. The valve returns more slowly without oscillation.

Question ID : 4410092229904
Chosen Option : 2

Q.43 A small project involves 7 activities, and their time estimates are listed in the following figure. Activities are identified by their beginning (i) and ending (j) node numbers. What is the expected project length of the project?



- Ans
- ✓ 1. 17 weeks
 - ✗ 2. 23 weeks
 - ✗ 3. 21 weeks
 - ✗ 4. 19 weeks

Question ID : 441009800572
Chosen Option : 1

Q.44 A composite wall consists of three layers of equal thickness and area. If thermal conductivities $k_A \ll k_B \approx k_C$, which layer contributes most to the total thermal resistance?

- Ans
- ☒ 1. Layer B
 - ☒ 2. Layer A
 - ☒ 3. All layers contribute equally
 - ☒ 4. Layer C

Question ID : 4410092229920
Chosen Option : 1

Q.45 What does the optimal solution of a Transportation Problem represent?

- Ans
- ☒ 1. The maximum possible transportation cost that satisfies supply and demand constraints
 - ☒ 2. The allocation of goods that maximizes the number of shipments
 - ☒ 3. The solution with the least number of allocated cells
 - ☒ 4. The minimum transportation cost that satisfies supply and demand constraints

Question ID : 4410091229080
Chosen Option : 2

Q.46 Which statement correctly describes the relationship between the cutting force and the shear force in orthogonal machining?

- Ans
- ☒ 1. The cutting force is always less than the shear force.
 - ☒ 2. The cutting and shear forces are related by Merchant's theory.
 - ☒ 3. The cutting force and shear force act in the same direction and are identical.
 - ☒ 4. The cutting force is always equal to the shear force.

Question ID : 4410092234342
Chosen Option : 2

Q.47 Which statement best describes the effect of a positive back rake angle on cutting performance?

- Ans
- ☒ 1. It reduces cutting force and facilitates chip removal
 - ☒ 2. It increases tool wear during operation
 - ☒ 3. It mainly controls heat generation at the cutting edge
 - ☒ 4. It restricts chip flow away from the workpiece

Question ID : 4410092234338
Chosen Option : 2

Q.48 Two identical steel bars are subjected to the same mean stress but different stress amplitudes under cyclic loading. Which bar is more likely to fail first due to fatigue, and why?

- Ans
- ☐ 1. The bar with higher mean stress, regardless of amplitude
 - ☐ 2. Both bars are equally likely, since material is identical
 - ☐ 3. The bar with lower stress amplitude, due to slower fatigue damage
 - ☒ 4. The bar with higher stress amplitude, due to greater fatigue damage accumulation

Question ID : 4410092229918
Chosen Option : 4

Q.49 Which phase is predominantly present in pure iron at room temperature?

- Ans
- ☒ 1. Ferrite
 - ☐ 2. Austenite
 - ☐ 3. Cementite
 - ☐ 4. Martensite

Question ID : 441009998317
Chosen Option : 1

Q.50 The polytropic efficiency of a reciprocating compressor is higher than the adiabatic efficiency when:

- Ans
- ☐ 1. Clearance volume is zero
 - ☐ 2. Pressure ratio is very low
 - ☒ 3. The process is closer to isothermal
 - ☐ 4. The compression is extremely fast

Question ID : 4410091374501
Chosen Option : 3

Q.51 When applying Goodman's equation for fatigue analysis under biaxial dynamic loading, what is the crucial initial step before using the equation that relates mean and alternating stresses to material properties?

- Ans
- ☐ 1. Determine the maximum shear stress amplitude and compare it directly to the endurance limit in shear.
 - ☐ 2. Calculate the factor of safety based solely on the maximum principal stress and the material's yield strength.
 - ☒ 3. Convert the biaxial mean and alternating stress components into equivalent uniaxial mean and alternating stresses using a static yield criterion (e.g., Von Mises or Tresca).
 - ☐ 4. Use the average of the maximum and minimum stresses in both directions directly in the Goodman equation without further transformation.

Question ID : 4410091216198
Chosen Option : 2

Q.52 In the iron–iron carbide equilibrium diagram, which of the following correctly represents the basic phases present across the composition range of steel and cast iron?

- Ans
- ☐ 1. Austenite, Martensite, Pearlite, Cementite
 - ☐ 2. Ferrite, Liquid, Martensite, Bainite
 - ☐ 3. Ferrite, Pearlite, Bainite, Cementite
 - ☒ 4. Ferrite, Austenite, Cementite, Liquid

Question ID : 4410091310650
Chosen Option : 3

Q.53 If two castings are made of the same material and have the same volume but different shapes, which factor primarily causes their solidification times to differ according to Chvorinov's rule?

- Ans
- ☐ 1. Difference in alloy composition
 - ☒ 2. Difference in surface area
 - ☐ 3. Difference in mold constant
 - ☐ 4. Difference in pouring temperature

Question ID : 4410092234331
Chosen Option : 2

Q.54 Which of the following patterns is most suitable for producing axis-symmetric castings?

- Ans
- ☐ 1. Match plate pattern
 - ☐ 2. Single piece pattern
 - ☐ 3. Skeleton pattern
 - ☒ 4. Sweep pattern

Question ID : 44100959752
Chosen Option : 2

Q.55 The zeroth law of thermodynamics forms the basis for which of the following?

- Ans
- ☐ 1. Measurement of volume
 - ☐ 2. Measurement of mass
 - ☒ 3. Measurement of temperature
 - ☐ 4. Measurement of pressure

Question ID : 4410091459825
Chosen Option : 3

Q.56 As per the Hencky and Von Misses theory, The maximum distortion energy is

- Ans
- ☐ 1. the ratio between the total strain energy and the strain energy due to uniform stress.
 - ☐ 2. the product of the total strain energy and the strain energy due to uniform stress.
 - ☐ 3. sum of the total strain energy and the strain energy due to uniform stress.
 - ☒ 4. the difference between the total strain energy and the strain energy due to uniform stress.

Question ID : 441009976907
Chosen Option : 1

Q.57 In the inversion of a slider-crank mechanism where the slider is fixed and the crank rotates, which of the following devices is based on this configuration?

- Ans
- ☐ 1. Rotary engine
 - ☐ 2. Hand pump
 - ☐ 3. Elliptical trammel
 - ☒ 4. Reciprocating compressor

Question ID : 4410092229886
Chosen Option : 4

Q.58 The primary reason for the brittleness of ceramics is:

- Ans
- ☐ 1. High internal porosity reducing overall structural cohesion
 - ☒ 2. Strong ionic and covalent bonding restricting dislocation motion
 - ☐ 3. Metallic bonding enabling free movement of dislocations
 - ☐ 4. Weak van der Waals interactions allowing easy atom separation

Question ID : 4410091470943
Chosen Option : 4

Q.59 In a counterflow heat exchanger, the hot fluid enters at 130°C and exits at 90°C, while the cold fluid enters at 30°C and exits at 80°C. Determine the log mean temperature difference (LMTD).

- Ans
- ☐ 1. 25.32 °C
 - ☒ 2. 54.84 °C
 - ☐ 3. 81.75 °C
 - ☐ 4. 63.91 °C

Question ID : 4410091186579
Chosen Option : 2

Q.60 The elastic failure theory relates complex stress strength to mechanical properties from which of the following tests?

- Ans
- ☒ 1. Creep test
 - ☒ 2. Fracture test
 - ☒ 3. Tension test
 - ☒ 4. Impact test

Question ID : 441009979424
Chosen Option : 3

Q.61 A simply supported beam exhibits a higher natural frequency in its second mode compared to its first. What primarily accounts for this difference?

- Ans
- ☒ 1. The beam's span is decreased for the second mode
 - ☒ 2. The second mode shape has more nodes and higher curvature
 - ☒ 3. The boundary conditions are altered for higher modes
 - ☒ 4. The material properties change with mode number

Question ID : 4410092229910
Chosen Option : 2

Q.62 A heat-generating spherical element operates under fixed radius and surface conditions. Which design modification is most effective for reducing the center temperature?

- Ans
- ☒ 1. Increase the sphere's radius
 - ☒ 2. Decrease the sphere's radius
 - ☒ 3. Increase the volumetric heat generation rate
 - ☒ 4. Increase the sphere's thermal conductivity

Question ID : 4410092229922
Chosen Option : 3

Q.63 If the modulus of elasticity (E) of a simply supported beam is doubled while keeping all other parameters constant, what will be the effect on the maximum deflection under a central point load?

- Ans
- ☒ 1. The maximum deflection remains unchanged
 - ☒ 2. The maximum deflection is quadrupled
 - ☒ 3. The maximum deflection is doubled
 - ☒ 4. The maximum deflection is halved

Question ID : 4410092229864
Chosen Option : 4

Q.64 The basic configuration of a double slider mechanism includes:

- Ans
- ☐ 1. 4 links, 3 pairs
 - ☐ 2. 3 links, 3 pairs
 - ☒ 3. 4 links, 4 pairs
 - ☐ 4. 5 links, 5 pairs

Question ID : 441009291379
Chosen Option : 4

Q.65 Why is the shear plane angle important in the analysis of orthogonal machining?

- Ans
- ☐ 1. It measures the wear rate of the cutting tool
 - ☐ 2. It controls the temperature at the tool-work interface
 - ☒ 3. It determines the direction and magnitude of material deformation
 - ☐ 4. It sets the feed rate for chip removal

Question ID : 4410092234341
Chosen Option : 2

Q.66 An internal combustion (IC) engine works with a compression ratio of 21. If cut-off happens at 10% of the stroke, then the cut-off ratio of this engine is:

- Ans
- ☐ 1. 2
 - ☐ 2. 2.1
 - ☒ 3. 3
 - ☐ 4. 1

Question ID : 4410091447059
Chosen Option : 2

Q.67 What is a primary reason for choosing a filler metal with a lower melting point than the base metals in brazing?

- Ans
- ☐ 1. To provide color contrast with the base metals
 - ☐ 2. To reduce the cost of the process
 - ☐ 3. To increase the joint hardness
 - ☒ 4. To join the base metals without melting or deforming

Question ID : 4410092234337
Chosen Option : 2

Q.68 For a vertical column of length L , cross-sectional area A , density ρ , and modulus of elasticity E , what is the effect of doubling the column length on the strain energy stored due to its self-weight?

- Ans
- ☐ 1. The strain energy increases by a factor of 2
 - ☐ 2. The strain energy increases by a factor of 4
 - ☐ 3. The strain energy increases by a factor of 6
 - ☒ 4. The strain energy increases by a factor of 8

Question ID : 4410092229881
Chosen Option : 2

Q.69 When designing a gating system, why is the ratio of sprue, runner, and gate cross-sectional areas important?

- Ans
- ☐ 1. It ensures maximum metal temperature at the gate
 - ☒ 2. It controls the flow rate and minimizes turbulence in the mold
 - ☐ 3. It increases the metal's solidification time uniformly
 - ☐ 4. It prevents chemical reactions between metal and mold

Question ID : 4410092234327
Chosen Option : 2

Q.70 Which of the following conditions must be simultaneously satisfied to ensure complete similarity between a turbine model and its prototype during model testing?

- Ans
- ☒ 1. Equality of specific speed, flow ratio, and head coefficient between model and prototype.
 - ☐ 2. Equality of Euler's head across model and prototype, irrespective of velocity triangles.
 - ☐ 3. Equality of velocity ratio, pressure ratio, and cavitation coefficient between model and prototype.
 - ☐ 4. Equality of Reynolds number and Mach number between model and prototype.

Question ID : 4410091281803
Chosen Option : 2

Q.71 Which of the following types of coordinate measuring machines is best suited for large, heavy workpieces?

- Ans
- ☐ 1. Floating bridge type
 - ☐ 2. Cantilever type
 - ☐ 3. Bridge type
 - ☒ 4. Horizontal boring mill type

Question ID : 4410091503504
Chosen Option : 2

Q.72 In the NRL (Naval Research Laboratory) method of riser design, why is the modulus of the riser compared with that of the casting?

- Ans
- ☐ 1. To achieve the same cooling rate in both components
 - ☐ 2. To match the volume of the riser to the casting
 - ☒ 3. To ensure that the riser solidifies later than the casting
 - ☐ 4. To standardize riser shapes for different castings

Question ID : 4410092234330
Chosen Option : 3

Q.73 A shell-and-tube heat exchanger has shell-side baffles spaced farther apart than recommended. What is the most direct effect on the overall heat transfer coefficient?

- Ans
- ☒ 1. Increased shell-side turbulence reduces fouling resistance
 - ☒ 2. Increased wall resistance dominates overall resistance
 - ☒ 3. Reduced shell-side turbulence increases film resistance, decreasing the coefficient
 - ☒ 4. Reduced shell-side turbulence decreases wall resistance

Question ID : 4410092229927
Chosen Option : 2

Q.74 For a wooden beam subjected to a transverse shear force, which factor increases the maximum shear stress when all other parameters are kept constant?

- Ans
- ☒ 1. Increasing the width of the cross-section
 - ☒ 2. Changing the material to one of higher density
 - ☒ 3. Decreasing the depth of the cross-section
 - ☒ 4. Increasing the length of the beam

Question ID : 4410092229856
Chosen Option : 2

Q.75 Which among the following design parameters in boundary layer flow is effected by energy thickness?

- Ans
- ☒ 1. Wall shear
 - ☒ 2. Drag force
 - ☒ 3. Heat transfer
 - ☒ 4. Pressure distribution

Question ID : 441009265502
Chosen Option : 3

Q.76 Which application is most suitable for a ramjet engine?

- Ans
- ☒ 1. Vertical take-off helicopter
 - ☒ 2. Commercial subsonic airliner
 - ☒ 3. Supersonic missile propulsion
 - ☒ 4. Subsonic cargo transport aircraft

Question ID : 4410092234365
Chosen Option : 3

Q.77 Which of the following best expresses the head loss (h_c) due to sudden contraction in pipe flow?
(V represent velocity, g is acceleration due to gravity and K is the contraction loss coefficient)

Ans

✓ 1. $h_c = K \frac{V^2}{2g}$

✗ 2. $h_c = \frac{(KV)^2}{2g}$

✗ 3. $h_c = K \frac{V^2}{g}$

✗ 4. $h_c = \frac{V^2}{2gK}$

Question ID : 4410091441564
Chosen Option : 1

Q.78 In Merchant's circle diagram, the cutting force (F_c) acts _____.

Ans

✗ 1. Perpendicular to cutting velocity

✓ 2. Along the cutting velocity direction

✗ 3. Along the shear plane

✗ 4. Perpendicular to the resultant force (R)

Question ID : 4410091000456
Chosen Option : 4

Q.79 Which statement accurately describes the effect of regeneration on the Rankine cycle?

Ans

✓ 1. It increases the mean effective temperature of heat addition.

✗ 2. It adds heat to the fluid at a higher temperature.

✗ 3. It adds heat to the fluid at a lower temperature.

✗ 4. It decreases the specific volume of the working fluid in the pump.

Question ID : 4410091506247
Chosen Option : 3

Q.80 In a simple epicyclic gear train with the arm fixed, the sun gear is the input and the ring gear is the output. Which gear arrangement provides the greatest speed reduction and hence the highest output torque (neglecting power losses)?

Ans

✗ 1. Both sun and ring gear with equal number of teeth.

✓ 2. A sun gear with fewer teeth than the ring gear.

✗ 3. A sun gear with more teeth than the ring gear.

✗ 4. A ring gear with fewer teeth than the sun gear.

Question ID : 4410092229891
Chosen Option : 2

Q.81 Which equation gives the boundary layer thickness (δ) over a flat plate at a distance x from the leading edge for laminar flow, according to the Blasius solution?
(Where Re_x = Local Reynolds number)

Ans

- ✓ 1. $\delta = \frac{5.0x}{\sqrt{Re_x}}$
- ✗ 2. $\delta = \frac{0.287x}{\sqrt{Re_x}}$
- ✗ 3. $\delta = \frac{0.074x}{\sqrt{Re_x}}$
- ✗ 4. $\delta = \frac{0.382x}{\sqrt{Re_x}}$

Question ID : 4410091436960
Chosen Option : 4

Q.82 For a shaft subjected to constant torque and having a fixed length, which of the following parameters does *not* affect the polar moment of inertia?

Ans

- ✗ 1. The cross-sectional shape of the shaft
- ✓ 2. The length of the shaft
- ✗ 3. The outer diameter of the shaft
- ✗ 4. The inner diameter of a hollow shaft

Question ID : 4410092229844
Chosen Option : 4

Q.83 Determine the coefficient of fluctuation of speed when a machine runs at an average speed of 600 rpm and varies between 630 rpm and 570 rpm in a cycle.

Ans

- ✗ 1. 0.15
- ✗ 2. 0.2
- ✗ 3. 0.05
- ✓ 4. 0.1

Question ID : 4410091687042
Chosen Option : 2

Q.84 Which statement accurately describes the behavior of thermosetting plastics?

Ans

- ✗ 1. They dissolve easily in water
- ✗ 2. They melt when heated
- ✗ 3. They can be molded repeatedly
- ✓ 4. They become permanently hard after heating

Question ID : 4410091049183
Chosen Option : 4

Q.85 If dynamic viscosity is 0.001 Pa·s and density is 1000 kg/m³, kinematic viscosity is:

- Ans
- ☒ 1. $1.0 \times 10^{-3} \text{ m}^2/\text{s}$
 - ☒ 2. $1.0 \times 10^{-2} \text{ m}^2/\text{s}$
 - ☒ 3. $1.0 \times 10^{-6} \text{ m}^2/\text{s}$
 - ☒ 4. $1.0 \text{ m}^2/\text{s}$

Question ID : 441009265453
Chosen Option : 2

Q.86 A vibrating system exhibits oscillations with gradually decreasing amplitude. Which damping ratio best describes this behavior?

- Ans
- ☒ 1. Greater than one
 - ☒ 2. Equal to zero
 - ☒ 3. Equal to one
 - ☒ 4. Less than one

Question ID : 4410092229905
Chosen Option : 4

Q.87 In a lap riveted joint subjected to a tensile load, which of the following is a common mode of failure for the rivet itself?

- Ans
- ☒ 1. Splitting of the plate at the edge parallel to the applied load
 - ☒ 2. Tearing of the plate along the row of rivets
 - ☒ 3. Shearing of the rivet across its cross-section
 - ☒ 4. Crushing (bearing) failure of the plate under the rivet head

Question ID : 4410091216202
Chosen Option : 3

Q.88 A cantilever beam is subjected to a point load at its free end. Which of the following statements best describes the relationship between the beam length and the free-end deflection?

- Ans
- ☒ 1. Deflection remains unchanged as the length increases
 - ☒ 2. Deflection increases linearly as the length increases
 - ☒ 3. Deflection decreases as the length increases
 - ☒ 4. Deflection increases non-linearly as the length increases

Question ID : 4410092229859
Chosen Option : 2

Q.89 In multistage compression, intercooling is primarily used to:

- Ans
- ☒ 1. increase power required
 - ☒ 2. reduce power consumption
 - ☒ 3. increase air temperature
 - ☒ 4. reduce volumetric efficiency

Question ID : 441009283747
Chosen Option : 1

Q.90 Which of the following is a characteristic of Critical Path Method (CPM)?

- Ans
- ☒ 1. Uses optimistic and pessimistic time estimates
 - ☒ 2. Focuses only on events
 - ☒ 3. Does not identify critical activities
 - ☒ 4. Emphasises cost and resource optimisation

Question ID : 4410091066957
Chosen Option : 2

Q.91 The effectiveness ϵ of a parallel flow heat exchanger with number of transfer units (NTU) and capacity rate ratio $C_r = C_{min}/C_{max}$ is given by:

- Ans
- ☒ 1. $\epsilon = 1 - e^{(-NTU)}$
 - ☒ 2. $\epsilon = (1 - e^{(-NTU(1 + C_r))}) / (1 + C_r)$
 - ☒ 3. $\epsilon = (1 - C_r e^{(-NTU(1 - C_r))}) / (1 - e^{(-NTU(1 - C_r))})$
 - ☒ 4. $\epsilon = NTU / (1 + NTU)$

Question ID : 4410091278665
Chosen Option : 4

Q.92 If W_n is the normal force acting on the surfaces, α is the semi cone angle and μ is the coefficient of friction between the surfaces, the total axial force required to engage the clutch is given by ____.

- Ans
- ☒ 1. $W_n (\sin \alpha / \mu \cos \alpha)$
 - ☒ 2. $W_n (\sin \alpha - \mu \cos \alpha)$
 - ☒ 3. $W_n (\sin \alpha + \mu \cos \alpha)$
 - ☒ 4. $W_n (\sin \alpha \times \mu \cos \alpha)$

Question ID : 441009992338
Chosen Option : 2

Q.93 A turbine with a high specific speed is generally best for:

- Ans
- ☒ 1. Low-flow, medium-head applications.
 - ☒ 2. High-flow, high-head applications.
 - ☒ 3. High-flow, low-head applications.
 - ☒ 4. Low-flow, high-head applications.

Question ID : 441009184432
Chosen Option : 3

Q.94 Free air delivery (FAD) of a reciprocating compressor is generally expressed as:

- Ans
- ☐ 1. kg/min at compressor suction conditions
 - ☐ 2. m³/min at compressor discharge conditions
 - ☒ 3. m³/min at atmospheric inlet conditions
 - ☐ 4. m³/min at instantaneous cylinder conditions

Question ID : 441009283730
Chosen Option : 3

Q.95 The volumetric efficiency of a reciprocating compressor decreases with ____

- Ans
- ☐ 1. Decreasing clearance volume
 - ☒ 2. Increasing clearance volume
 - ☐ 3. Reducing stroke length
 - ☐ 4. Increasing piston speed

Question ID : 4410091374511
Chosen Option : 2

Q.96 When the crank of a slider-crank mechanism is at either the inner dead centre (IDC) or outer dead centre (ODC), what is the instantaneous velocity of the slider?

- Ans
- ☒ 1. The velocity of the slider is zero
 - ☐ 2. The velocity of the slider is maximum
 - ☐ 3. The slider's velocity equals the crank's angular velocity
 - ☐ 4. The slider moves in the opposite direction

Question ID : 4410092229888
Chosen Option : 1

Q.97 During spheroidizing annealing, cementite particles transform into spheroids due to:

- Ans
- ☐ 1. Nucleation of martensite
 - ☐ 2. Dislocation multiplication
 - ☐ 3. Grain boundary migration
 - ☒ 4. Decrease in interfacial energy

Question ID : 4410091372360
Chosen Option : 1

**Test
Prime**

By Adda247

PREVIOUS YEAR PAPERS PDF



PRACTICE MORE, SCORE HIGHER!



**Free
25,000+
PDF's**

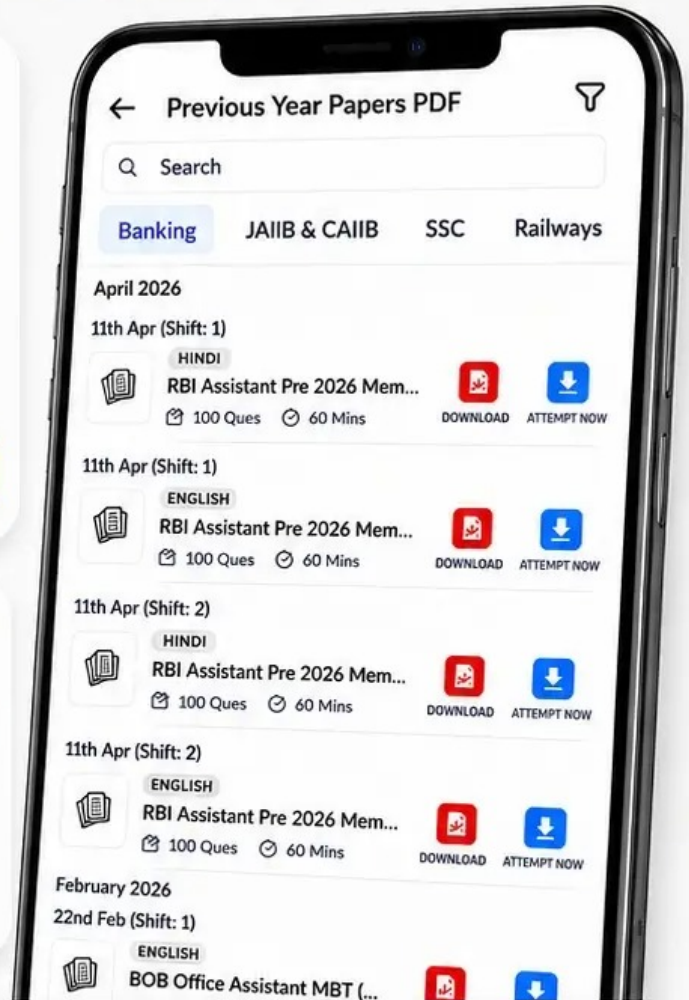
High-Quality | Exam-Wise | Updated Regularly



**ATTEMPT AS
MOCK**



Turn PDFs into real exam experience.
Analyze. Improve. Succeed.



Topic-wise &
Exam-wise PDFs



Download &
Study Offline



Attempt as Mock
& Track Score



Smart Analysis
& Performance

AVAILABLE IN



Banking



SSC



Railway



Teaching



UGC



Agriculture



Nursing



Bihar



UP



Punjab



WB



Odisha



TN



AP & Telangana



Haryana



DOWNLOAD TEST PRIME

Test

Prime



SUCCESS GALLERY!

★ MEET THE ACHIEVERS ★



Kunal, RRB JE



Shivam, UPSSSC AGTA



Priya, ANM



KHALILUR, LDA



Manoj, PWD



Atin, JENPAS



Shatarupa, OPSC



Arpita, JENPAS



Shital, SSC JE (Mech)



Nancy, UGC NET



Atul, SSC JE (ELCT)



Rahul, SSC JE (CIVIL)



Anand, SSC JE (ELCT)



Mohan, SSC JE (ELCT)



Saurabh, UGC NET



Ved, SSC JE (Mech)

★ THEY DID IT. YOU CAN TOO ★

READ THEIR STORIES!



Q.98 A cylindrical metal rod is subjected to a uniaxial tensile load, causing it to elongate along its length and contract laterally. If the axial strain is measured as 0.002 and the lateral strain as -0.0006, what is the Poisson's ratio of the material?

- Ans
- ☒ 1. 0.45
 - ☒ 2. 0.12
 - ☒ 3. 0.9
 - ☒ 4. 0.3

Question ID : 4410092229874
Chosen Option : 2

Q.99 A helical compression spring experiences shear stress above its allowable design limit. Which design modification most effectively reduces the maximum shear stress?

- Ans
- ☒ 1. Increase the mean coil diameter
 - ☒ 2. Increase the coil pitch
 - ☒ 3. Increase the number of coils
 - ☒ 4. Increase the wire diameter

Question ID : 4410092229917
Chosen Option : 2

Q.100 Which is incorrect about the Critical Path Method?

- Ans
- ☒ 1. Used for R&D projects
 - ☒ 2. Associated with deterministic activities
 - ☒ 3. Consider cost analysis
 - ☒ 4. Activity oriented

Question ID : 44100957985
Chosen Option : 1