OHPC DET

Previous Year Paper

(Mechanical) 28 Nov 2022

ODISHA HYDRO POWER CORPORATION LIMITED
A GOLD RATED STATE PSU OF GOVT. OF ODISHA

Participant ID	
Participant Name	
Test Center Name	
Test Date	28/11/2022
Test Time	5:00 PM - 7:00 PM
Subject	Diploma Engineer Trainee (Mechanical)

Section : Respective Discipline syllabus

Q.1 The soft-bearing machine derives its name from the fact that it supports the rotor to be balanced on bearings that _____.

Ans
✗ 1. are free to move in at least two directions, usually both horizontal and perpendicular to the rotor axis.

✗ 2. are installed on soft material like rubber pads

✓ 3. are free to move in at least one direction, usually either horizontal or perpendicular to the rotor axis.

✗ 4. have the capability to move in three directions

Question ID : 9744434291
Status : Not Answered
Chosen Option : --

Q.2 Determine the normal stress in a square cross-section of a bar with side 5 cm loaded in tension with forces P, where P = 55 kN.

Ans
✗ 1. 11 MPa

✗ 2. 22 kPa

✓ 3. 22 MPa

✗ 4. 11 kPa

Question ID : 9744434319
Status : Answered
Chosen Option : 3

Q.3 Which of the following statements is true about the magnitude of static friction acting on a body in impeding motion, as compared to the kinetic friction?

Ans ✗ 1.
Static friction is zero and kinetic friction is maximum during impeding motion.

✗ 2.
Both static and kinetic frictions are equal to zero during impeding motion.

✓ 3.
Static friction is greater than kinetic friction during impeding motion.

✗ 4.
Kinetic friction is greater than static friction during impeding motion.

Question ID : 9744434278
Status : Answered
Chosen Option : 3

Q.4 A mechanism used for transmitting rotary motion from one wheel to the other wheel is known as _____.

Ans ✗ 1. beam engine

✗ 2. gnome engine

✗ 3. Whitworth quick return motion mechanism

✓ 4. double crank mechanism or coupling rod of locomotives

Question ID : 9744434286
Status : Answered
Chosen Option : 2

Q.5 Which of the following statements is correct about the tool and work-piece movement in the shaper machine?

Ans ✗ 1. Work piece reciprocates and tool rotates at fixed position.

✗ 2. Work piece rotates and tool remains stationary.

✗ 3.
Work piece reciprocates and tool rotates as well as moves in linear direction.

✓ 4.
Work piece is kept fixed on vice and tool reciprocates fixed with ram.

Question ID : 9744434327
Status : Answered
Chosen Option : 4

Q.6 At very low pressure, melting point and boiling point coincide with each other and all three states, solid, liquid and gas, coexist in equilibrium. What is this known as?

Ans
✗ 1. Tri junction equilibrium
✗ 2. Point of three equilibrium
✓ 3. Triple point
✗ 4. Vacuum equilibrium point

Question ID : 9744434343
Status : Answered
Chosen Option : 3

Q.7 Which of the following rules is INCORRECT regarding dimensioning in an engineering drawing?

Ans
✗ 1. Each dimension should be given only once.
✗ 2. Dimension lines should not cross each other.
✗ 3.
There must be one and only one dimension line bearing one dimension between any two extension lines.
✓ 4.
The two systems of units can be mixed on the same drawing.

Question ID : 9744434318
Status : Answered
Chosen Option : 3

Q.8 Which of the following pairs of materials has the maximum coefficient of kinetic friction (μk) during rubbing action?

Ans
✗ 1. Rubber on concrete
✓ 2. Steel on steel
✗ 3. Aluminium on steel
✗ 4. Wood on wood

Question ID : 9744434279
Status : Answered
Chosen Option : 2

Q.9 Calculate the axial stress (σ - axial) for a thin-walled cylindrical pressure vessel, where internal pressure pi = 2.1 MPa, radius r = 0.8 m and thickness t = 1 cm.

Ans
✗ 1. 34 MPa
✗ 2. 45 MPa
✗ 3. 48 MPa
✓ 4. 84 MPa

Question ID : 9744434321
Status : Not Answered
Chosen Option : --

Q.10 What is the base component of the frame of a vehicle known as?

Ans
✔ 1. Chassis
✘ 2. Shaft
✘ 3. Body
✘ 4. Axle

Question ID : 9744434322
Status : Answered
Chosen Option : 1

Q.11 When the kinematic pairs are coupled in such a way that the last link is joined to the first link to transmit definite motion, it is known as _____.

Ans
✘ 1. mechanism
✘ 2. machine
✔ 3. kinematic chain
✘ 4. structure

Question ID : 9744434284
Status : Answered
Chosen Option : 3

Q.12 Hooke's law states that within the limits of elasticity of a material, the stress is proportional to _____.

Ans
✘ 1. Young's modulus
✘ 2. Poisson's ratio
✔ 3. strain
✘ 4. shear stress

Question ID : 9744434296
Status : Answered
Chosen Option : 3

Q.13 What will be the moment of inertia of a rectangular plate of height h and width b about the x-axis?

Ans
✘ 1. $I_x = \frac{b^2h^2}{12}$
✔ 2. $I_x = \frac{bh^3}{12}$
✘ 3. $I_x = \frac{bh^2}{12}$
✘ 4. $I_x = \frac{b^3h^2}{12}$

Question ID : 9744434280
Status : Answered
Chosen Option : 2

Q.14 The ratio of average load to the peak load in a thermal plant is known as _____.

Ans
✗ 1. use factor
✗ 2. capacity factor
✗ 3. efficiency factor
✓ 4. load factor

Question ID : 9744434336
Status : Answered
Chosen Option : 4

Q.15 Which of the following is NOT an essential specification of the planer machine?

Ans
✗ 1. Maximum distance of the table to the cross rail must be in metres.
✗ 2. Width of the table must be in mm.
✓ 3. Maximum material removal rate of the planer machine must be specified.
✗ 4. Maximum stroke of the table must be in mm.

Question ID : 9744434328
Status : Not Answered
Chosen Option : --

Q.16 Which of the following statements is INCORRECT regarding drawing boards recommended for students?

Ans
✗ 1. It is recommended for use with sheet size A2.
✓ 2. Both D0 and D1 drawing boards are recommended for students.
✗ 3. Its Length × Width (mm) is 700 × 500, respectively.
✗ 4. The drawing board is designated as D2.

Question ID : 9744434315
Status : Answered
Chosen Option : 4

Q.17 The pressure in a car tire is usually measured by a pressure gauge. To which reference is it relative?

Ans
✗ 1. 100 Pascal
✗ 2. Absolute pressure
✗ 3. 5 bar
✓ 4. Ambient air pressure

Question ID : 9744434308
Status : Answered
Chosen Option : 2

Q.18 Arcs of Circle precede with _____ to distinguish them from the length.

Ans
✗ 1. Length
✓ 2. R
✗ 3. Arc
✗ 4. θ

Question ID : 9744434317
Status : Answered
Chosen Option : 4

Q.19 A pull force acting normal (perpendicular) to the cross-section area of a body induces which of the following types of stress/stresses?

Ans
✗ 1. Compressive stress without shear stress
✗ 2. Only shear stress
✓ 3. Tensile stress without shear stress
✗ 4. Both tensile stress and shear stress

Question ID : 9744434294
Status : Answered
Chosen Option : 3

Q.20 Which of the following is NOT a type of coal?

Ans
✗ 1. Bituminous
✗ 2. Lignite
✗ 3. Anthracite
✓ 4. Granite

Question ID : 9744434344
Status : Answered
Chosen Option : 4

Q.21 Which of the following is NOT a vector quantity?

Ans
✓ 1. Speed
✗ 2. Displacement
✗ 3. Force
✗ 4. Moment

Question ID : 9744434275
Status : Answered
Chosen Option : 1

Q.22 Which of the following is NOT a part of a diesel power plant?

Ans
✗ 1. Generator
✗ 2. Engine lubrication system
✗ 3. Diesel engine
✓ 4. Feed water turbine

Question ID : 9744434351
Status : Answered
Chosen Option : 4

Q.23 Which of the following materials is NOT used for manufacturing cutting tool materials?

Ans
✓ 1. Cast iron
✗ 2. Cubic boron nitrite
✗ 3. Diamonds
✗ 4. Ceramics

Question ID : 9744434325
Status : Answered
Chosen Option : 1

Q.24 Which operation is used to enlarge an already drilled hole using a drilling machine?

Ans
✗ 1. Tapping
✗ 2. Drilling
✗ 3. Counter sinking
✓ 4. Boring

Question ID : 9744434323
Status : Answered
Chosen Option : 4

Q.25 The intentional difference between the maximum material limits, i.e., low limit of hole (LLH) and high limit of hole (HLS), also known as minimum clearance or maximum interference, of the two mating parts is known as _____.

Ans
✓ 1. allowance
✗ 2. transition
✗ 3. wages
✗ 4. interference

Question ID : 9744434335
Status : Answered
Chosen Option : 1

Q.26 In which unit is the strain measurement through strain gauge usually expressed?

Ans
✗ 1. Inch (“)
✗ 2. Centimetre (cm)/Metre (m)
✓ 3. Micro-strain (με), or ε × 10 – 6
✗ 4. Millimetre (mm)

Question ID : 9744434306
Status : Answered
Chosen Option : 4

Q.27 Which of the following statements is correct?

Ans
✓ 1. One million = 10 lakh
✗ 2. One million = 2 lakh
✗ 3. One million = 100 lakh
✗ 4. One million = 5 lakh

Question ID : 9744434304
Status : Answered
Chosen Option : 1

Q.28 Calculate the strain (ε) for a change in length δ and length L, where δ = 0.038 cm and L = 1.9 m.

Ans
✗ 1. 0.0085
✗ 2. 0.22
✗ 3. 0.0011
✓ 4. 0.0002

Question ID : 9744434320
Status : Answered
Chosen Option : 4

Q.29 If a body is subjected to forces onto it at only two points and no couples applied onto it at all, then what are the necessary and sufficient conditions for the body to be in equilibrium?

Ans
✗ 1.
The two resultant forces should be of the same magnitude and acting in the same direction on the line.

✗ 2.
The two resultant forces should be of the same magnitude and acting in any direction perpendicular to the line.

✗ 3.
The three resultant forces should be of the same magnitude but acting in opposite directions on the line.

✓ 4.
The two resultant forces should be of the same magnitude but acting in opposite directions on the line.

Question ID : 9744434277
Status : Answered
Chosen Option : 4

Q.30 A body is said to be rigid if it _____.

Ans ✗ 1.
changes its shape and size due to its internal molecular forces

✗ 2.
changes its shape and size when external forces are applied to it

✓ 3.
retains its shape and size even if external forces are applied to it

✗ 4.
buckles up and changes its shape and size even when no external forces are applied to it

Question ID : 9744434274
Status : Answered
Chosen Option : 3

Q.31 What type of tool is the grinding wheel used in a grinding machine?

Ans ✗ 1. Both single as well as multi-point cutting tool

✗ 2. Multi-point cutting tool

✗ 3. Single-point cutting tool

✓ 4.
It is not a cutting tool but only a wheel used for finishing the operation.

Question ID : 9744434331
Status : Answered
Chosen Option : 2

Q.32 Which of the following is the correct basic unit of stress?

Ans ✗ 1. Joule

✗ 2. Faraday in Nm

✓ 3. Pascal in N/m^2

✗ 4. Pascal in N/s

Question ID : 9744434293
Status : Answered
Chosen Option : 3

Q.33 Which of the following is the correct equation for the cutting speed of a drilling machine? (Consider diameter of the drill (D) in mm and work speed in RPM)

Ans
✗ 1. $2\pi D/N$ second/mm

✗ 2. $DN/2\pi$ min/mm

✗ 3. $D(2\pi D/N)$ mm^2/min

✓ 4. $\pi DN/1000$ m/min

Question ID : 9744434324
Status : Answered
Chosen Option : 4

Q.34 The constant speed N in RPM of the generator having poles p, generating power per frequency f and connected to the hydraulic turbine irrespective of the load is given by which of the following formulae?

Ans
✗ 1. $N = \frac{f}{60 \times p}$

✗ 2. $N = \frac{f}{120 \times p}$

✗ 3. $N = \frac{60f}{p}$

✓ 4. $N = \frac{120f}{p}$

Question ID : 9744434353
Status : Answered
Chosen Option : 4

Q.35 Which of the following is NOT an advantage of group technology?

Ans
✗ 1.
It reduces material handling and promotes standardization of tooling, fixture and setups.

✗ 2. It reduces tool set-up time.

✓ 3.
It increases the work- in- process which results in huge inventory cost.

✗ 4. It simplifies process planning and production scheduling.

Question ID : 9744434312
Status : Answered
Chosen Option : 3

Q.36 If an area has at least one axis of symmetry, then the product of inertia is always _____.

Ans
✗ 1. a negative integer value
✗ 2. a positive integer value
✗ 3. a fractional value
✓ 4. zero

Question ID : 9744434281
Status : Not Answered
Chosen Option : --

Q.37 Which of the following is NOT a type of impeller used in centrifugal pumps?

Ans
✓ 1. Opaque impeller
✗ 2. Closed impeller
✗ 3. Semi-open impeller
✗ 4. Open impeller

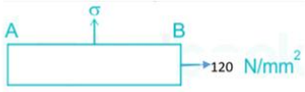
Question ID : 9744434332
Status : Answered
Chosen Option : 1

Q.38 The ratio of a change in length to the original length of a specimen under tension or compression, due to external load, is known as _____.

Ans
✗ 1. Poisson's ratio
✗ 2. shear stress
✗ 3. Young's modulus
✓ 4. strain

Question ID : 9744434295
Status : Answered
Chosen Option : 4

Q.39 Two -dimensional stress system on a block made of a material with Poisson's ratio of 0.3 is shown in the given figure.

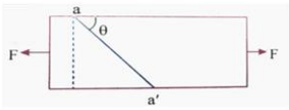


The limiting magnitude (σ) of the stress so as to result in no change in length AB of the block is _____.

Ans
✔ 1. 400 N/mm^2
✘ 2. 120 N/mm^2
✘ 3. 100 N/mm^2
✘ 4. 200 N/mm^2

Question ID : 9744434298
Status : Not Answered
Chosen Option : --

Q.40 If the external puling or pushing force acts at an angle θ with respect to the cross-sectional area of the bar, what is the value of θ at which both normal and shear stress values will be the same?



Ans
✘ 1. 60 degrees
✘ 2. Zero degrees
✔ 3. 45 degrees
✘ 4. 30 degrees

Question ID : 9744434299
Status : Answered
Chosen Option : 3

Q.41 The fundamental mode of vibration of a system is the mode having _____.

Ans
✔ 1. the lowest natural frequency
✘ 2. the highest natural frequency
✘ 3. rotating frequency
✘ 4. any natural frequency

Question ID : 9744434292
Status : Answered
Chosen Option : 4

Q.42 What are the conditions for a rigid body to be in equilibrium?

Ans ✔ 1.
The net force as well as the net moment about any arbitrary point should be equal to zero.

✘ 2.
The net force as well as the net moment about any arbitrary point should not be equal to zero.

✘ 3.
The net force as well as the net moment about any arbitrary point should be higher than 1000 N and Nm.

✘ 4.
The net force should be zero whereas magnitude of moment about any arbitrary point should exist.

Question ID : 9744434276
Status : Answered
Chosen Option : 1

Q.43 When a series of repeated measurements are made on a component under similar conditions and the values or results of measurements still vary, it is known as _____ error.

Ans ✘ 1. repeated

✘ 2. systematic

✘ 3. zero

✔ 4. random

Question ID : 9744434334
Status : Answered
Chosen Option : 1

Q.44 Which letter represents the diameter of a circle in an engineering drawing?

Ans ✔ 1. Φ

✘ 2. R

✘ 3. D

✘ 4. θ

Question ID : 9744434316
Status : Answered
Chosen Option : 1

Q.45 Which of the following statements is INCORRECT about a pendulum, which is a type of machine?

Ans ✘ 1. Static type of unbalancing in a single plane.

✘ 2. Attitude of shaft axis is vertical.

✔ 3. Its principle of operation is centrifugal rotating type.

✘ 4. Its principle of operation is gravity based and non-rotating.

Question ID : 9744434290
Status : Answered
Chosen Option : 3

Q.46 A machine tool used for removing unwanted material chips from the workpiece, to make splines and grooves, is known as _____.

Ans
✗ 1. gas cutting machine
✗ 2. planer machine
✗ 3. grinding machine
✓ 4. slotter machine

Question ID : 9744434329
Status : Answered
Chosen Option : 4

Q.47 A beam of length L is subjected to a point Load W at its mid-point as shown in the given figure. Find the maximum value of the bending moment in terms of W and L.

Ans
✓ 1. $WL/4$
✗ 2. WL
✗ 3. $2WL/3$
✗ 4. $WL/2$

Question ID : 9744434300
Status : Answered
Chosen Option : 1

Q.48 Which of the following is NOT a part of the slotter machine?

Ans
✓ 1. Tailstock and dead centre
✗ 2. Cross-slide
✗ 3. Rotating or Circular table
✗ 4. Ram and tool head

Question ID : 9744434330
Status : Not Answered
Chosen Option : --

Q.49 Which of the following is the correct full form of LMFBR?

Ans
✗ 1. Large Metal Fluidize Based Reactor
✗ 2. Least Melting Fusion Based Reactor
✓ 3. Liquid -Metal Fast Breeder Reactor
✗ 4. Land -Made Based Reactor

Question ID : 9744434350
Status : Answered
Chosen Option : 3

Q.50 During suction stroke, the charge in a diesel engine consists of _____.

Ans
✗ 1. air + diesel
✓ 2. only air
✗ 3. diesel + lubricating oil
✗ 4. air + diesel + lubricating oil

Question ID : 9744434341
Status : Answered
Chosen Option : 2

Q.51 Which of the following equations represents the correct equation of Power in terms of torque (T) in Nm and angular velocity (ω) in RPM?

Ans
✗ 1. Power = T / ω
✗ 2. Power = T − ω
✓ 3. Power = T × ω
✗ 4. Power = 2T / ω

Question ID : 9744434287
Status : Answered
Chosen Option : 3

Q.52 The device used to minimise fluctuations in the mean speed which may occur due to load variation is _____.

Ans
✓ 1. governor
✗ 2. dynamometer
✗ 3. flywheel
✗ 4. clutch

Question ID : 9744434288
Status : Answered
Chosen Option : 1

Q.53 What type of stress is produced by the eccentric load in the column?

Ans
✗ 1. Bending stress only
✓ 2. Both direct and bending stresses
✗ 3. No stresses
✗ 4. Direct stress only

Question ID : 9744434303
Status : Answered
Chosen Option : 2

Q.54 Which of the following is used to measure the length of a curved line?

Ans
✓ 1. String or ring sizer
✗ 2. Micrometer
✗ 3. Inclinometer
✗ 4. Steel rule

Question ID : 9744434305
Status : Answered
Chosen Option : 1

Q.55 A car starts from zero velocity and reaches a velocity of 100 m/s in 10 seconds. What is the acceleration of the car?

Ans
✗ 1. $40\ m/s^2$
✗ 2. $100\ m/s^2$
✓ 3. $10\ m/s^2$
✗ 4. $20\ m/s^2$

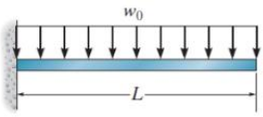
Question ID : 9744434282
Status : Answered
Chosen Option : 3

Q.56 Which law states that "Heat and work are mutually convertible"?

Ans
✗ 1. Faraday's law of conduction
✗ 2. Second law of thermodynamics
✓ 3. First law of thermodynamics
✗ 4. Zeroth law of thermodynamics

Question ID : 9744434338
Status : Answered
Chosen Option : 3

Q.57 A cantilever beam subjected to uniform distribution load (UDL) is shown in the given figure. What will be the maximum value of the bending moment at its fixed end?



Ans
✗ 1. $BM = w_0L^2/4$

✓ 2. $BM = -\frac{w_0L^2}{2}$

✗ 3. $BM = w_0L^3$

✗ 4. $BM = w_0L^2$

Question ID : 9744434301
Status : Answered
Chosen Option : 2

Q.58 We can obtain as many mechanisms as the number of links in a kinematic chain by fixing, in turn, different links in a kinematic chain. What is this known as?

Ans
✗ 1. Dynamic chain inversion

✗ 2. Inversion of machines

✓ 3. Inversion of mechanism

✗ 4. Static chain inversion

Question ID : 9744434285
Status : Answered
Chosen Option : 2

Q.59 Which of the following equations correctly represent the Room Sensible Heat Factor (RSHF) in terms of Room Latent Heat (RLH) and Room Sensible Heat (RSH)?

Ans
✗ 1. $RHSF = \frac{RSH}{RSH - RLH}$

✗ 2. $RHSF = \frac{RLH}{RSH + RLH}$

✗ 3. $RHSF = \frac{RSH + RLH}{RSH}$

✓ 4. $RHSF = \frac{RSH}{RSH + RLH}$

Question ID : 9744434345
Status : Answered
Chosen Option : 4

Q.60 What is the power stroke produced in a 4-stroke single cylinder diesel engine?

Ans
✗ 1. One power stroke per one revolution
✗ 2. Power stroke depends on the air fuel ratio of the engine.
✓ 3. One power stroke per two revolutions
✗ 4. Two power strokes per one revolution

Question ID : 9744434352
Status : Answered
Chosen Option : 3

Q.61 The volume occupied per unit mass of a substance is known as _____.

Ans
✗ 1. specific weight
✓ 2. specific volume
✗ 3. density
✗ 4. Poisson's ratio

Question ID : 9744434340
Status : Answered
Chosen Option : 2

Q.62 What is the alloy of cobalt, chromium and tungsten, used for manufacture of tool bit, known as?

Ans
✓ 1. Stellite
✗ 2. Cemented carbide
✗ 3. Cubic boron nitride
✗ 4. High speed steel

Question ID : 9744434326
Status : Answered
Chosen Option : 3

Q.63 A motor bike starts from zero velocity and reaches a maximum velocity of 100 m/s with an acceleration of 5 m/s^2.
What is the total distance travelled by the motor bike?

Ans
✗ 1. 1500 m
✓ 2. 1000 m
✗ 3. 100 m
✗ 4. 2000 m

Question ID : 9744434283
Status : Answered
Chosen Option : 2

Q.64 According to the theory of simple bending, the stress (σ) acting on the beam at the neutral axis is equal to _____.

Ans

✗ 1. $\sigma = -\frac{M \times I}{y}$

✓ 2. zero

✗ 3. $\sigma = \frac{M \times I}{y}$

✗ 4. $\sigma = \frac{M \times y}{R}$

Question ID : 9744434302
Status : Answered
Chosen Option : 2

Q.65 Which of the following equations correctly represents the equation of the Watt governor in terms of angular velocity (ω), gravitational constant (g) and height of the governor (h)?

Ans

✓ 1. $\omega^2 = g/h$

✗ 2. $h = g \times \omega$

✗ 3. $h^2 = g/\omega$

✗ 4. $\omega = h/g$

Question ID : 9744434289
Status : Answered
Chosen Option : 1

Q.66 Which thermodynamic cycle is used for a steam power plant?

Ans

✗ 1. Carnot cycle

✗ 2. Sterling cycle

✗ 3. Brayton cycle

✓ 4. Rankine cycle

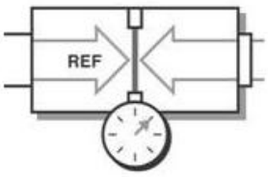
Question ID : 9744434347
Status : Answered
Chosen Option : 4

Q.67 The tendency of a body to be lifted upward in a fluid is due to _____.

Ans
✗ 1. centripetal force
✗ 2. inertia
✗ 3. gravitational force
✓ 4. buoyant force

Question ID : 9744434333
Status : Answered
Chosen Option : 4

Q.68 Which type of pressure measurement is represented by the given figure?



Ans
✗ 1. Difference between absolute and vacuum pressure
✓ 2. Differential measurement
✗ 3. Absolute pressure
✗ 4. Gauge pressure

Question ID : 9744434309
Status : Answered
Chosen Option : 4

Q.69 The rate of steam flow (kg/s) required to produce unit shaft output (1 kW) is known as _____.

Ans
✗ 1. fuel rate
✗ 2. heat rate
✓ 3. steam rate
✗ 4. power rate

Question ID : 9744434346
Status : Answered
Chosen Option : 4

Q.70 About which machine is the second law of thermodynamics given by Clausius?

Ans
✔ 1. Refrigerator
✘ 2. Electric heater
✘ 3. Thermometer
✘ 4. Heat engine

Question ID : 9744434339
Status : Answered
Chosen Option : 1

Q.71 Which of the following statements is correct about stresses in thin cylindrical pressure vessels?

Ans
✘ 1.
The longitudinal and circumferential stresses are not related to each other.

✔ 2.
Longitudinal stress is half in magnitude compared to the circumferential stress.

✘ 3.
Longitudinal stress is twice in magnitude compared to the circumferential stress

✘ 4.
Both longitudinal and circumferential stresses have the same magnitude as well as direction.

Question ID : 9744434297
Status : Answered
Chosen Option : 2

Q.72 For which process are G01 codes used in CNC machines?

Ans
✘ 1. Programming in inches
✘ 2. Circular/Helical interpolation
✘ 3. X-Y plane selection
✔ 4. Linear interpolation

Question ID : 9744434313
Status : Not Answered
Chosen Option : --

Q.73 Which of the following equations represents the work done by a frictionless piston in a cylinder under pressure?

Ans
✔ 1. Work = Pressure × Volume
✘ 2. Work = Force × volume
✘ 3. Work = Pressure × Length
✘ 4. Work = Mass × Pressure

Question ID : 9744434337
Status : Answered
Chosen Option : 1

Q.74 What is the full form of FMS?

Ans
✔ 1. Flexible Manufacturing System
✘ 2. Fully Managed Standard System
✘ 3. Fixed Management System
✘ 4. Flexible in Management and Supervision

Question ID : 9744434311
Status : Not Answered
Chosen Option : --

Q.75 The ratio of fractional change in electrical resistance to the fractional change in length (strain) is known as _____.

Ans
✘ 1. Poisson's ratio
✘ 2. safety factor
✘ 3. design factor
✔ 4. gauge factor

Question ID : 9744434307
Status : Answered
Chosen Option : 3

Q.76 A gas turbine works on which of the following thermodynamic cycles?

Ans
✘ 1. Ericson cycle
✘ 2. Carnot cycle
✘ 3. Rankine cycle
✔ 4. Brayton cycle

Question ID : 9744434342
Status : Answered
Chosen Option : 4

Q.77 Which type of chemical reaction takes place in nuclear reactor to release heat?

Ans
✘ 1. Fusion reaction
✘ 2. Endothermic reaction
✔ 3. Fission reaction
✘ 4. Hydrophobic reaction

Question ID : 9744434349
Status : Answered
Chosen Option : 3

Q.78 A fictitious pressure that, if operated on the piston during the entire power stroke, would produce the same amount of network as that produced during the actual cycle is known as _____.

Ans
✔ 1. mean effective pressure
✘ 2. real pressure
✘ 3. maximum affecting pressure
✘ 4. replicating pressure

Question ID : 9744434348
Status : Answered
Chosen Option : 3

Q.79 Dimensions of Engineer's Drawing Boards with Designation D0 has length × width (mm) as _____.

Ans
✘ 1. 500 × 500
✔ 2. 1500 × 1000
✘ 3. 700 × 500
✘ 4. 1000 × 700

Question ID : 9744434314
Status : Answered
Chosen Option : 3

Q.80 What is the full form of CAD in production engineering?

Ans
✘ 1. Construct And Deport
✔ 2. Computer Aided Design
✘ 3. Computer Addiction Disease
✘ 4. Computer's Additional Design

Question ID : 9744434310
Status : Answered
Chosen Option : 2

Section : 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 conclusions logically follow(s) from the statements.

Statements:

A. All books are films.
B. Some films are trees.
C. No tree is a chair.

Conclusions:

I. No chair is a tree.
II. Some trees are films.
III. Some films are books.

Ans
1. Only conclusions I and II follow
2. Only conclusions II and III follow
3. All conclusions I, II and III follow
4. Only conclusion I follows

Question ID : 9744434356
Status : Answered
Chosen Option : 3

Q.2 Select the number from among the given options that can replace the question mark (?) in the following series.

4, 12, 36, 108, ?

Ans
1. 243
2. 324
3. 342
4. 234

Question ID : 9744434362
Status : Answered
Chosen Option : 2

Q.3 Seven persons A, B, C, D, E, F and G are of different heights. D is taller than F, while C is taller than B. B is taller than F and E. A is not taller than anyone. D is shorter than B. G is taller than C. E is shorter than F. Who is in the middle of all, in terms of height?

Ans
1. G
2. B
3. D
4. C

Question ID : 9744434358
Status : Answered
Chosen Option : 3

Q.4 Eight friends P, Q, R, S T, U, V and W are sitting around a circular table, facing the centre of the table, but not necessarily in the same order. U is sitting third to the right of P. T is sitting between R and P. W is sitting opposite to R. Q is sitting between V and W. W is not an immediate neighbour of U. Who is sitting third to the right of S?

Ans
1. T
2. P
3. R
4. Q

Question ID : 9744434354
Status : Answered
Chosen Option : 3

Q.5 Which two signs should be interchanged to make the following equation correct?

$517 \div 47 + 35 - 23 \times 67 = 749$

Ans
1. ÷ and ×
2. × and −
3. ÷ and −
4. × and +

Question ID : 9744434363
Status : Answered
Chosen Option : 4

Q.6 Fahad drives 15 km in the east direction. Then he turns right and travels 50 km. He again turns left and travels 67 km. He finally turns left and travels 45 km. In which direction is he facing now, and in which direction is he with respect to the starting point, respectively?

Ans
1. North; South-East
2. North; South-West
3. South; South-West
4. West; South-West

Question ID : 9744434361
Status : Answered
Chosen Option : 1

Q.7 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:

A. All birds are fishes.
B. All mangoes are fishes.
C. All fishes are dolphins.

Conclusions:

I. Some birds are mangoes.
II. All dolphins are birds.
III. No bird is a mango.

Ans
✗ 1. All conclusions I, II and III follow
✗ 2. Only conclusion I follows
✓ 3. Either conclusion I or III follows
✗ 4. Only conclusions II and III follow

Question ID : 9744434357
Status : Answered
Chosen Option : 3

Q.8 In a certain code language, 'LIVER' is written as 'QSDFUWHJKM'. How will 'FILM' be written in that language?

Ans
✓ 1. LNKMHJEG
✗ 2. LNKNHJEG
✗ 3. LNKMHJFG
✗ 4. LNKMHIEG

Question ID : 9744434360
Status : Not Answered
Chosen Option : --

Q.9 Select the alphanumeric-cluster from among the given options that can replace the question mark (?) in the following series.

GV6, JX15, ?, PF123, SC366

Ans
✓ 1. ML42
✗ 2. ML46
✗ 3. MK46
✗ 4. MI42

Question ID : 9744434359
Status : Not Answered
Chosen Option : --

Q.10 Manu ranked 27th from the left end of the row and 89th from the right end of the same row of pilgrims. What is the total number of pilgrims in the row?

Ans
✗ 1. 117
✓ 2. 115
✗ 3. 116
✗ 4. 114

Question ID : 9744434355
Status : Answered
Chosen Option : 2

Section : Quantitative Aptitude

Q.1 If the difference between two numbers is 66 and their LCM and HCF are 4301 and 11, respectively, then what is the sum of those two numbers?

Ans
✓ 1. 440
✗ 2. 470
✗ 3. 460
✗ 4. 450

Question ID : 9744434364
Status : Not Answered
Chosen Option : --

Q.2 A trader marked the price of his article so as to include a profit of 18%. If he allowed a discount of 8% on the marked price, then what was his actual profit on that article?

Ans
✗ 1. 8.35 %
✗ 2. 8.92 %
✗ 3. 8.74 %
✓ 4. 8.56 %

Question ID : 9744434368
Status : Not Answered
Chosen Option : --

Q.3 The speed of a bus increases by 3 km/h after every 2 hours. If the bus covers a distance of 82 km in the first 2 hours, then the total distance covered by the bus in 14 hours will be:

Ans
✗ 1. 600 km
✗ 2. 500 km
✗ 3. 800 km
✓ 4. 700 km

Question ID : 9744434370
Status : Not Answered
Chosen Option : --

Q.4 The present height of a tree is 540 cm. If the rate of its growth is 20% per annum, then what was the height of the tree 3 years ago?

Ans
1. 345.5 cm
2. 321.5 cm
3. 335.5 cm
4. 312.5 cm

Question ID : 9744434366
Status : Answered
Chosen Option : 4

Q.5 The GST is reduced from 7.5% to 6.25% on a TV set. How much will a person save if he purchases the TV set with a marked price of ₹16,000?

Ans
1. ₹ 300
2. ₹ 360
3. ₹ 250
4. ₹ 200

Question ID : 9744434365
Status : Answered
Chosen Option : 4

Q.6 A can finish a work in 20 days and B can finish the same work in 16 days. After A had worked for 5 days, B also joined A to finish the remaining work. In how many days will the remaining work be finished?

Ans
1. $9\frac{1}{5}$
2. $6\frac{2}{3}$
3. $8\frac{1}{2}$
4. $7\frac{1}{4}$

Question ID : 9744434371
Status : Answered
Chosen Option : 2

Q.7 A boy covers half of a certain journey at x km/h on bicycle and the remaining half at a speed of 4.5 km/h. If his average speed is 6 km/h, then the value of x is:

Ans
1. 8
2. 7
3. 6
4. 9

Question ID : 9744434369
Status : Answered
Chosen Option : 4

Q.8 A shopkeeper uses a weight of 950 g instead of 1 kg and sells the articles at the marked price which is 20% above the cost price. What is the profit percentage?

Ans
1. $28\frac{1}{19}\%$
2. $25\frac{7}{19}\%$
3. $26\frac{6}{19}\%$
4. $24\frac{5}{19}\%$

Question ID : 9744434367
Status : Not Answered
Chosen Option : --

Q.9 The base of a parallelogram is thrice its height. If the area of the parallelogram is 192 cm^2 , then what is the length of the base of the parallelogram?

Ans
1. 18 cm
2. 24 cm
3. 27cm
4. 30 cm

Question ID : 9744434372
Status : Not Answered
Chosen Option : --

Q.10 The length, breadth and height of a box are 2.4 m, 1.5 m and 80 cm, respectively. What will be the cost of canvas to cover it up fully, if the cost of canvas is ₹ 100 per m^2 ?

Ans
1. ₹ 1,356
2. ₹ 1,378
3. ₹ 1,396
4. ₹ 1,344

Question ID : 9744434373
Status : Answered
Chosen Option : 4

Section : General Awareness

Q.1 After the partition of India, the Reserve Bank served as the central bank of Pakistan up to June _____.

Ans
✗ 1. 1950
✓ 2. 1948
✗ 3. 1949
✗ 4. 1951

Question ID : 9744434377
Status : Not Answered
Chosen Option : --

Q.2 When was the National Monsoon Mission (NMM) launched by the Government of India with an objective of improvement of seasonal and intra-seasonal monsoon forecast?

Ans
✗ 1. 2007
✗ 2. 2002
✓ 3. 2012
✗ 4. 2004

Question ID : 9744434378
Status : Not Answered
Chosen Option : --

Q.3 For what purpose is the Chaitya hall used in Buddhist architecture?

Ans
✗ 1. Cooking
✗ 2. Playing
✓ 3. Worship
✗ 4. Cremation

Question ID : 9744434376
Status : Answered
Chosen Option : 4

Q.4 At which IIT did researchers develop robots in June 2022 to clean septic tanks without the involvement of humans?

Ans
✗ 1. IIT Delhi
✗ 2. IIT Bombay
✗ 3. IIT Mandi
✓ 4. IIT Madras

Question ID : 9744434374
Status : Answered
Chosen Option : 4

Q.5 Which Article of the Indian Constitution deals with removal and suspension of a member of a Public Service Commission?

Ans
✔ 1. Article 317
✘ 2. Article 315
✘ 3. Article 319
✘ 4. Article 313

Question ID : 9744434382
Status : Answered
Chosen Option : 3

Q.6 What is the rank of Delhi among Indian cities in terms of worst summer air quality in India as per the reports of the Centre for Science and Environment (CSE) in 2022?

Ans
✔ 1. 8th
✘ 2. 3rd
✘ 3. 5th
✘ 4. 6th

Question ID : 9744434380
Status : Answered
Chosen Option : 2

Q.7 The ideals of liberty, equality and fraternity in the Preamble of the Indian Constitution are borrowed from the Constitution of:

Ans
✔ 1. France
✘ 2. South Africa
✘ 3. United Kingdom
✘ 4. Germany

Question ID : 9744434381
Status : Answered
Chosen Option : 1

Q.8 In which year was the Hindu Personal Law passed during British rule in India?

Ans
✘ 1. 1778
✘ 2. 1774
✘ 3. 1770
✔ 4. 1772

Question ID : 9744434375
Status : Not Answered
Chosen Option : --

Q.9 Where do you locate the 'Chota Nagpur Plateau' in India?

Ans
✗ 1. Southern India
✗ 2. Northern India
✓ 3. Eastern India
✗ 4. Western India

Question ID : 9744434379
Status : Answered
Chosen Option : 2

Q.10 Who among the following is the first IAS officer to win a medal at the Paralympics?

Ans
✗ 1. Sundar Singh Gurjar
✓ 2. Suhas Yathiraj
✗ 3. Singhraj Adhana
✗ 4. Manoj Sarkar

Question ID : 9744434383
Status : Answered
Chosen Option : 2

Section : English Language

Q.1 Select the correctly spelt word.

Ans
✗ 1. Posthumus
✗ 2. Especialy
✗ 3. Figuretive
✓ 4. Forfeit

Question ID : 9744434387
Status : Answered
Chosen Option : 4

Q.2 Select the most appropriate meaning of the given idiom.

To costs an arm and a leg

Ans
✗ 1. Something that is worthless
✗ 2. Something that is not needed
✗ 3. Paying more than necessary
✓ 4. Something that is very expensive

Question ID : 9744434390
Status : Answered
Chosen Option : 1

Q.3 The following sentence has been split into four segments. Identify the segment that contains a grammatical error.

The most powerful tornado / in United States history / occur near / Oklahoma City in 1999.

Ans
✗ 1. in United States history
✓ 2. occur near
✗ 3. Oklahoma City in 1999.
✗ 4. The most powerful tornado

Question ID : 9744434384
Status : Answered
Chosen Option : 2

Q.4 Select the most appropriate option that can substitute the underlined segment in the given sentence. If there is no need to substitute it, select 'No substitution required'.

The inhabitants of this island in the south of Japan exist longer than people anywhere else in the world.

Ans
✗ 1. No substitution required
✗ 2. live lengthier
✓ 3. live longer
✗ 4. continue longer

Question ID : 9744434389
Status : Answered
Chosen Option : 3

Q.5 Select the INCORRECTLY spelt word.

Ans
✗ 1. Appendage
✗ 2. Appreciable
✗ 3. Primarily
✓ 4. Bienneal

Question ID : 9744434388
Status : Answered
Chosen Option : 4

Q.6 Select the most appropriate synonym of the given word.

Presumptuous

Ans
✗ 1. Cautious
✗ 2. Humble
✓ 3. Overconfident
✗ 4. Simple

Question ID : 9744434386
Status : Answered
Chosen Option : 1

Q.7 Select the most appropriate option to fill in the blanks.

_____ caterpillar rearing project was _____ effort to create _____ exhaustive database for moth host plants.

Ans
1. The, a, a
2. A, a, an
3. The, an, an
4. A, an, a

Question ID : 9744434385
Status : Answered
Chosen Option : 3

Comprehension:

Read the given passage and answer the questions that follow.

The new ban on 'single use plastic' is on. The government has defined 'single-use' plastic as something that is used once and then disposed of or recycled.
The government has listed 21 items that need to be phased out and they include plates made of plastic, cups made of plastic, earbuds with plastic sticks, glasses made of plastic; wrapping or packaging films around sweet boxes and cigarette packets among others.
Going through the extensive list made me sit up and wonder as to how plastics have quietly seeped into our lives and become so entrenched that we can't think of a life without them.
The durability and convenience that plastics offer have proved to be a disaster in the long run. Once we discard plastic items, they are not biodegradable and usually go to a landfill where they are buried or eventually get into water and find their way to the ocean. They later break down into tiny particles and release toxic chemicals. These chemicals enter our food and water supply and are found in our bloodstream, leading to various ailments, including cancer, infertility, birth defects and impaired immunity.
I was lucky enough to have a glimpse of what a pre-plastic or a less-plastic era looked like. We had to carry a glass bottle or steel container while going to buy milk, a cloth bag was integral to shopping at grocery and vegetable stores, and every shop stocked old newspaper to wrap and pack the goods.

SubQuestion No : 8

Q.8 Identify the correct sequence of steps in which plastic can affect the human body.

A. get into water
B. discarded plastics go to landfill.
C. enter our bloodstream causing diseases
D. release toxic chemicals

Ans
1. DCAB
2. BCDA
3. ABCD
4. BADC

Question ID : 9744434392
Status : Answered
Chosen Option : 4

Comprehension:

Read the given passage and answer the questions that follow.

The new ban on 'single use plastic' is on. The government has defined 'single-use' plastic as something that is used once and then disposed of or recycled.
The government has listed 21 items that need to be phased out and they include plates made of plastic, cups made of plastic, earbuds with plastic sticks, glasses made of plastic; wrapping or packaging films around sweet boxes and cigarette packets among others.
Going through the extensive list made me sit up and wonder as to how plastics have quietly seeped into our lives and become so entrenched that we can't think of a life without them.
The durability and convenience that plastics offer have proved to be a disaster in the long run. Once we discard plastic items, they are not biodegradable and usually go to a landfill where they are buried or eventually get into water and find their way to the ocean. They later break down into tiny particles and release toxic chemicals. These chemicals enter our food and water supply and are found in our bloodstream, leading to various ailments, including cancer, infertility, birth defects and impaired immunity.
I was lucky enough to have a glimpse of what a pre-plastic or a less-plastic era looked like. We had to carry a glass bottle or steel container while going to buy milk, a cloth bag was integral to shopping at grocery and vegetable stores, and every shop stocked old newspaper to wrap and pack the goods.

SubQuestion No : 9

Q.9 Which of the following pre-plastic habits is NOT mentioned in the passage?

Ans
✗ 1. Carrying containers for milk

✗ 2. Using newspaper for wrapping and packing

✓ 3. Using steel glasses to drink water

✗ 4. Carrying bags for vegetables

Question ID : 9744434393
Status : Answered
Chosen Option : 3

Comprehension:

Read the given passage and answer the questions that follow.

The new ban on 'single use plastic' is on. The government has defined 'single-use' plastic as something that is used once and then disposed of or recycled.
The government has listed 21 items that need to be phased out and they include plates made of plastic, cups made of plastic, earbuds with plastic sticks, glasses made of plastic; wrapping or packaging films around sweet boxes and cigarette packets among others.
Going through the extensive list made me sit up and wonder as to how plastics have quietly seeped into our lives and become so entrenched that we can't think of a life without them.
The durability and convenience that plastics offer have proved to be a disaster in the long run. Once we discard plastic items, they are not biodegradable and usually go to a landfill where they are buried or eventually get into water and find their way to the ocean. They later break down into tiny particles and release toxic chemicals. These chemicals enter our food and water supply and are found in our bloodstream, leading to various ailments, including cancer, infertility, birth defects and impaired immunity.
I was lucky enough to have a glimpse of what a pre-plastic or a less-plastic era looked like. We had to carry a glass bottle or steel container while going to buy milk, a cloth bag was integral to shopping at grocery and vegetable stores, and every shop stocked old newspaper to wrap and pack the goods.

SubQuestion No : 10

Q.10 Select the most appropriate synonym of the given word as used in the passage.

Extensive

Ans
✗ 1. Sweeping
✗ 2. Unrestricted
✗ 3. Pervasive
✓ 4. Comprehensive

Question ID : 9744434394
Status : Not Answered
Chosen Option : --