Ques # :1

In casting process, which of the following cross section is preferred for runner?

1) Square
2) Rectangular
3) Trapezoidal
4) Circular

Ques # :2

Thickness of slush casting process is given by $t = 0.577\tau^{0.5} + 0.413$.
After pouring metal if we immediately invert the mould then
what is the thickness of casting?

1)   0
2)   0.413
3)   0.99
4)   1.567

Ques # :3

With increase in torch angle, flame density:-

1) Increases
2) Decreases
3) Remain constant
4) First increases then decreases

Ques # :4

Cycle time of resistance welding consists of
1) Squeeze time, weld time, hold time & on time
2) On time, weld time , hold time & off time
3) On time, weld time & off time
4) Squeeze time, weld time, hold time & off time

Ques # :5

Go gauge is made for _____ limit to inspect hole size .
1) Maximum material
2) Minimum material
3) Intermediate material
4) Optimum material

Ques # :6

Tool life equation for tools under consideration are as follows-
HSS: $VT^{0.2} = 150$, Carbide: $VT^{0.3} = 250$,
where V is cutting speed in m/min and T is the tool life in min.
The breakeven cutting speed above which the carbide tool will
be beneficial is :-

1)   54 m/min
2)   150 m/min
3)   194 m/min
4)   250 m/min

Ques # :7

When the ordering cost is increased to 4 times,the Economic Order Quantity(EOQ) will be increased to :

1) 2 times

2) 3 times

3) 8 times

4) Remains same

Ques # :8

The time taken to drill a hole through a 25 mm thick plate with the drill rotating at 300 rpm and moving at a feed rate of 0.25 mm/rev is:-

1) 10 sec

2) 20 sec

3) 60 sec

4) 100 sec

Ques # :9

The method of classification of items to be adopted for spare parts inventory is :

1) ABC analysis

2) XYZ analysis

3) VED analysis

4) SDE analysis

Ques # :10

In rolling process, sheet of 25 mm thickness is rolled to 20 mm thickness. Roll is of diameter 600 mm and it rotates at 100 rpm. The rod strip contact length will be

1) 5 mm

2) 39 mm

3) 78 mm

4) 120 mm

Ques # :11

Calculate the smallest punch diameter that can be designed for piercing sheet metal strip with the following data: [Crushing strength of the punch material is 1500 Mpa. Thickness of the sheet is 2mm, factor of safety is 3, and shear strength of the sheet material is 500 MPa]

1) 2 mm

2) 6 mm

3) 8 mm

4) 24 mm

Ques # :12

A shaft has diameter $35^{-0.009}_{-0.025}$. The respective values of fundamental deviation and tolerance are :-

1) $-0.025, \pm 0.008$

2) $-0.025, -0.008$

3) $-0.009, \pm 0.008$

4) $-0.009, 0.016$

Ques # :13

A taper hole is inspected using a CMM, with a probe of 2 mm diameter. At a height, Z=10 mm from the bottom, 5 points are touched and diameter of circle (not compensated for probe size) is obtained as 20 mm. Similarly, a 40 mm diameter at height Z= 40 mm, the smaller diameter (in mm) of the hole at Z=0 is
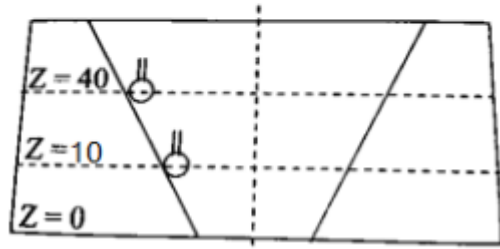
1)   13.334
2)   15.334
3)   15.442
4)   15.542

Ques # :14

In a 2-D CAD package, clockwise circular are of radius 5,specified from $P_1(15,10)$ to $P_2(10,15)$ will have its centre at:-

1)   (10,10)
2)   (15,10)
3)   (15,15)
4)   (10,15)

Ques # :15

In a transportation problem, there are four supply centers and five demand centers,The total quantity of supply available is greater than total demand . The number of allocations without degeneracy during an iteration is :

1)   3

2)   6

3)   9

4)   0

Ques # :16

The length of the links of a 4-bar linkage with revolute pairs only are m, n, o and p units. Given that n>m>p>o . Which of these links should be the fixed one, for obtaining a "double crank" mechanism?

1) Link of length m

2) Link of length n

3) Link of length o

4) Link of length p

Ques # :17

A slider crank mechanism with crank radius 60 mm is perpendicular to connecting rod having length 240 mm. The crank is rotating with uniform angular speed of 10 rad/s, counter clockwise. For the given configuration, the speed of slider is _____m/s.

1)   618

2)   0.618

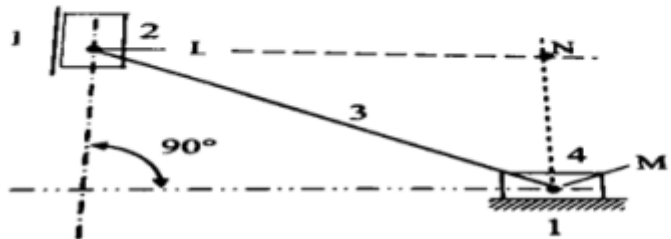3)   6.18

4)   61.8

Ques # :18

The sun gear given in the figure is driven clockwise at 100 rpm. The ring gear is held stationary. For the number of teeth shown on the gears, the arm rotates at _____
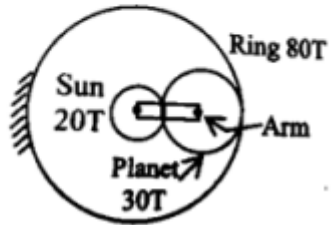
1)   0 rpm
2)   20 rpm
3)   33.33 rpm
4)   66.67 rpm

Ques # :19

The figure below shows a planar mechanism with single degree of freedom. The instant centre I_{24} for the given configuration is located at the position?-

1)   L
2)   M
3)   N
4)   ∞

Ques # :20

For a certain engine having an average speed of 20 rps, a flywheel approximated as a solid disc, is required for keeping the fluctuation of the speed within 2% about the average speed. The fluctuation of kinetic energy per cycle is found to be 2kJ. What is the least possible mass of the flywheel if its diameter is not to exceed 1 m?

1) 40 kg
2) 62 kg
3) 51 kg
4) 73 kg

Ques # :21

In the figure shown, the spring deflects by
δ to position A (the equilibrium position)
when a mass **m** is at position B at some instant.
The change in potential energy of the spring mass
system from position A to position B is
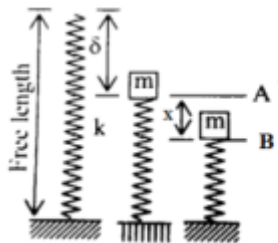
1)
$$\frac{1}{2}kx^2$$

2)
$$\frac{1}{2}kx^2 - mgx$$

3)

$$\frac{1}{2}k(x+\delta)^2$$

4)
$$\frac{1}{2}kx^2 + mgx$$

Ques # :22

The vibration machine is isolated from floor using springs. If the ratio of excitation frequency of vibration of machine to the natural frequency of the isolation system is equal to 0.5, the transmissibility ratio of isolation is :-

1)   1/2
2)   3/4
3)   4/3
4)   2

Ques # :23

The state of stress at a point under plane stress condition is $\sigma_{xx} = 40$ Mpa;

$\sigma_{yy} = 100$ Mpa; $\tau_{xy} = 40$ Mpa;

(notations have usual meaning).

The radius of the Mohr's circle representing the given state of stress in Mpa is :-

1)   40
2)   50
3)   60

4)   100

Ques # :24

In metals subjected to cold working, strain hardening effect is due to :
1) Slip mechanism
2) Twinning mechanism
3) Dislocation mechanism
4) Fracture mechanism

Ques # :25

A steel bar of 5 mm is heated from 15 °C to 40 °C and it is free to expand. The bar will induce
1) No stress
2) Shear Stress
3) Tensile Stress
4) Compressive stress

Ques # :26

Euler's critical load for a column with both ends hinged is found as 40 kN. What would be the change in the critical load if both ends are fixed?
1) 160 kN
2) 200 kN
3) 20 kN
4) 50 kN

Ques # :27

A solid circular shaft is subjected to a bending moment M and twisting moment T. What is the equivalent twisting moment T_e which will produce the same maximum shear stress as the above combination?

1) $M^2 + T^2$

2) M+T

3) $\sqrt{M^2 + T^2}$

4) M-T

Ques # :28

The shapes of the bending moment diagram for a uniform cantilever beam carrying a uniformly distributed load over its length is:-
1) A straight line
2) A hyperbola
3) An ellipse
4) A parabola

Ques # :29

A steel bar of 40 mm x 40 mm square cross-section is subjected to an axial compressive load of 200 kN. If the length of the bar is 2m and E = 200 GPa, the elongation of the bar will be:
1) 1.25 mm
2) 2.70 mm
3) 4.05 mm
4) 5.40 mm

Ques # :30

The shear stress on principal planes is :-

1) Maximum

2) Minimum

3) Zero

4) None of these

Ques # :31

A dimensionless combination of pressure drop 'ΔP',
dynamic viscosity 'μ', velocity 'V' and length 'L' is :-

1) $\Delta P/(V^2.L)$

2) $(V.L)/\mu$

3) $\Delta P/(\mu.V.L)$

4) $(\Delta P.L)/(\mu.V)$

Ques # :32

The flow of a liquid at constant rate in a conically tapered pipe is classified as

1) Steady, uniform flow

2) Steady, non uniform flow

3) Unsteady, uniform flow

4) Unsteady, non uniform flow

Ques # :33

If coefficients of discharge of a venturimeter, orifice meter and nozzle are X,Y,Z respectively then,

1) X>Z>Y

2) X>Y>Z

3) Z>Y>X

4) Y>Z>X

Ques # :34

The intensity of turbulence refers to :-

1) correlation of 'μ' and 'V'

2) average kinetic energy of turbulence per unit mass

3) root mean square value of turbulent velocity fluctuations

4) the Reynolds stresses

Ques # :35

A 1000 m long pipe discharges 1 m³/sec of water with the head of 99 m at the inlet. The maximum power transmitted by pipe is (specific weight of water = 10 kN/m³)

1) 990 kW

2) 660 kW

3) 445 kW

4) None

Ques # :36

An oil of kinematic viscosity 0.25 stokes flows through a pipe of diameter 10 cm. The flow is critical at the velocity of :

1) 7.2 m/sec

2) 5.0 m/sec

3) 0.5 m/sec

4) 0.72 m/sec

Ques # :37

A water jet with a velocity 20 m/sec is directed upwards at an angle of 45° to the horizontal. If air resistance is neglected, it will reach a maximum elevation at a distance of 'x' from nozzle. The value of 'x' in meters is:-

1) 20.38
2) 40.77
3) 10.19
4) 14.41

Ques # :38

In a turbulent flow through a pipe the centre line velocity is 3.61 m/sec and the friction factor f = 0.02, the mean velocity of flow in m/sec is:-

1) 4.80
2) 3.00
3) 2.21
4) 0.96

Ques # :39

The velocity profile in fully developed laminar flow in a pipe of diameter D is given by $u = u_0[1\text{-}(4r^2/D^2)]$, where r is the radial distance from the centre. If the viscosity of the fluids is μ, the pressure drop across a length L of the pipe is:

1)
$$\frac{\mu * u_0 * L}{D^2}$$

2)
$$\frac{4 * \mu * u_0 * L}{D^2}$$

3)

$$\frac{8*\mu*u_0*L}{D^2}$$

4)

$$\frac{16*\mu*u_0*L}{D^2}$$

Ques # :40

A smooth pipe of diameter 200 mm carries water. The pressure in the pipe at section S1 (elevation=10m) is 50 kPa. At section S2 (elevation=12 m) the pressure is 20 kPa and velocity 2m/s. Density of water is 1000 kg/m³ and acceleration due to gravity is 9.81 m/s². Which of the following is true?

1) Flow is from S1 to S2 and head loss is 0.53 m

2) Flow is from S2 to S1 and head loss is 0.53 m

3) flow is from S1 to S2 and head loss is 1.06 m

4) flow is from S2 to S1 and head loss is 1.06 m

Ques # :41

Regression method of forecasting is applicable mainly for :-

1) Causal models

2) Qualitative forecasting

3) Time -series models

4) Delphy method

Ques # :42

The 2D flow with velocity $\vec{V} = (x+2y+2)\hat{i} + (4-y)\hat{j}$ is

1) Compressible and irrotational

2) Compressible and rotational

3) Incompressible and irrotational

4) Incompressible and rotational

Ques # :43

Which of the following is not a turbo machine

1) Centrifugal pump

2) Kaplan Turbine

3) Reciprocating pump

4) Fans

Ques # :44

An impulse turbine

1) Always operates submerged

2) Makes use of draft tube

3) Is most suited for low head installations

4) Operates by initial complete conversion of kinetic head

Ques # :45

Windage is :-

1) Effect of runner speed on wind

2) Winding of electrical wire on motor

3) Friction between pelton wheel and atmoshpere

4) Cavitation

Ques # :46

Which of the following is an objective of annealing :-

1) To relieve internal stress

2) To refine grain structures

3) To soften the metal

4) To improve machinability

Ques # :47

The function of draft tube is :-

1) Recuperation of energy

2) To make it possible to establish the turbine above tail race

3) Both recuperation of energy and to make it possible to establish the turbine above tail race

4) None of these

Ques # :48

A reaction turbine discharges 50 m³/sec of water under a head of 7.5 m with an overall efficiency of 80%. The H.P developed is :-

1) 5000

2) 300

3) 4000

4) None of these

Ques # :49

A large hydraulic turbine is to generate 300 kW at 100 rpm under a head of 40 m. For initial testing, a 1:4 scale model of the turbine operates under a head of 10 m. The power generated by model (in kW) will be :-

1) 2.34

2) 4.68

3) 9.38

4) 18.75

Ques # :50

Which of the following parameters are true when the cavitation parameter σ =0 ? i. The local pressure is reduced to vapour pressure ii. Cavitation starts iii. Boiling of liquid starts iv. Cavitation stops

1) (i), (ii) and (iv)
2) only (ii) and (iii)
3) only (i) and (iii)
4) (i), (ii) and (iii)

Ques # :51

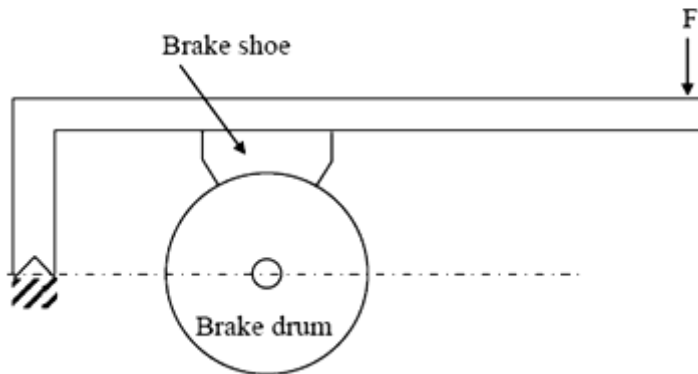The forces F_1 and F_2 in a brake band and the direction of rotation of the drum are as shown in the figure. The coefficient of friction is 0.25. The angle of wrap is $3\pi/2$ radians. It is given that R = 1 m and F_2 = 1 N. The torque (in N-m) exerted on the drum is ____
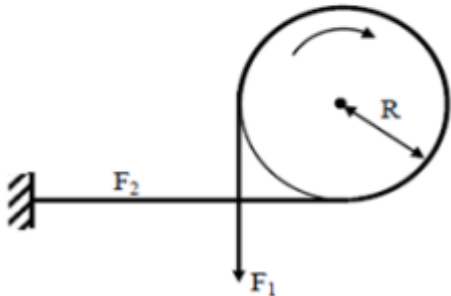
1)   2.248
2)   4.248
3)   0.693
4)   1.308

For the brake shown in figure, which
of the following is true?

1) Self-energizing for clockwise rotation of the drum
2) Self-energizing for anti-clockwise rotation of the drum
3) Self-energizing for rotation in either direction of the drum
4) Not of the self-energizing type

Ques # :53

Errors generally distributed in accordance with the Goussian distribution are :
1) Controllable errors
2) Caliberation errors
3) Avoidable errors
4) Random errors

Ques # :54

Ball bearing are made from:-
1) Low carbon steel
2) Medium carbon steel
3) High speed steel
4) Chrome nickel steel

Ques # :55

Instrument used to measure the flow through open canal:-
1) Orifice plate
2) Venturi meter
3) Pitot tube
4) V notch method

Ques # :56

The torque that can be transmitted safely by the spur gear tooth at zero pitch line velocity is known as:-
1) Average torque
2) Maximum torque

3) Minimum torque

4) Stalling torque

Ques # :57

M 20 bolt has a shank of 50 mm length and a thread of 25 mm length. It is subjected to a tensile load of 10kN. Young's modulus of bolt material is 205000 N/mm². D_c = 0.8d. The strain energy stored in the bolt, if the shank of the bolt is turned down to root of the thread, is:-

1)   67 N.mm
2)   84 N.mm
3)   114 N.mm
4)   50 N.mm

Ques # :58

Two plates are joined by a parallel fillet weld. The plate is subjected to a tensile load of 340 kN. The working stress in shear for weld material is 80 Mpa. The length of 15 mm weld received to resist load is:-

1) 400 mm length of weld adjusted on both sides

2) 200 mm length of weld adjusted on both sides

3) 400 mm length on each side

4) 100 mm length of weld on each side

Ques # :59

A solid copper ball of mass 500 grams, when quenched in a water bath at 30°C, cools from 530°C to 430°C in 10 seconds. What will be the temperature of the ball after next 10 seconds?

1) 300°C

2) 320°C

3) 350°C

4) Not determinable for want of sufficient data

Ques # :60

A steam pipe is covered with two layers of insulating materials, with the better insulating material forming the outer part. If the two layers are interchanged, the heat conducted:-

1) Will decrease
2) Will increase
3) Will remain unaffected
4) may increase or decrease depending upon the thickness of each layer

---

Ques # :61

A plane wall of thickness 2L has a uniform volumetric heat source q^*(W/m^3). It is exposed to local ambient temperature T_α at both the ends(x=$\pm$L). The surface temperature T_s of the wall under steady-state condition (where h and k have their usual meanings) is given by:

1)
$$T_s = T_\alpha + \frac{q^*L}{h}$$

2)
$$T_s = T_\alpha + \frac{q^*L^2}{2k}$$

3)
$$T_s = T_\alpha + \frac{q^*L^2}{h}$$

4)
$$T_s = T_\alpha + \frac{q^*L^3}{2k}$$

Ques # :62

A Prandtl number of a flowing fluid greater than unity indicates that hydrodynamic boundary layer thickness is:-

1) Greater than thermal boundary layer thicknesss
2) Equal to thermal boundary layer thickness
3) Smaller than thermal boundary layer thickness
4) Independent of thermal boundary layer thickness

Ques # :63

For fully developed turbulent flow in a pipe with heating, the Nusselt number Nu, varies with Reynolds number Re and Prandtl number Pr as:-

1)
$$Re^{0.5}Pr^{1/3}$$

2)
$$Re^{0.8}Pr^{0.2}$$

3)
$$Re^{0.8}Pr^{0.4}$$

4)
$$Re^{0.8}Pr^{0.3}$$

Ques # :64

Heat is lost from a 100 mm diameter steam pipe placed horizontally in ambience at 30°C. If the Nusselt number is 25 and thermal conductivity of air is 0.03 W/mk, then the heat transfer coefficient will be:-

1) 7.5 W/m²k
2) 16.2 W/m²k
3) 25.2 W/m²k
4) 30 W/m²k

Ques # :65

A large spherical enclosure has a small opening. The rate of emission of radiative flux through this opening is 7.35 kW/m². The temperature at the inner surface of the sphere will be about (assume Stefan Boltzman constant $\sigma = 5.67 \times 10^{-8}$ W/m²k⁴) :-

1)   600 K
2)   330°C
3)   373 K
4)   1000 K

Ques # :66

For the radiation between two infinite parallel planes of emissivity ε_1 and ε_2 respectively, which one of the following is the expression for emissivity?

1) ε_1 and ε_2

2) $1/\varepsilon_1 + 1/\varepsilon_2$

3) $1/[1/\varepsilon_1 + 1/\varepsilon_2]$

4) $1/[1/\varepsilon_1 + 1/\varepsilon_2 - 1]$

Ques # :67

What is the radiation intensity in a particular direction?

1) Radiation energy per unit time per unit area of the radiating surface

2) Radiant energy per unit time per unit solid angle per unit area of the radiation surface

3) Radiant energy per unit time per unit solid angle per unit projected area of the radiation surface in the given direction

4) Radiant energy per unit time per unit projected area of the radiating surface in the given direction

---

Ques # :68

Which one of the following heat exchangers gives parallel straight-line pattern of temperature distribution for both cold and hot fluids?
1) Parallel-flow with unequal heat capacities.
2) Counter -flow with equal heat capacities.
3) Parallel-flow with equal heat capacities.
4) Counter-flow with unequal heat capacities.

Ques # :69

A heat exchanger with heat transfer area A and overall heat transfer coefficient U handles two fluids of heat capacities C_1 and C_2 such that $C_1 > C_2$. The NTU of the heat exchanger is given by:-

1) AU/C_2

2) $\exp[-AU/C_2]$

3) $\exp[-AU/C_1]$

4) AU/C_1

Ques # :70

In a certain heat exchanger,both the fluids have identical mass flow rate specific heat product. The hot fluid enters at 76°C and leaves at 47°C and the cold fluid entering at 26°C leaves at 55°C. The effectiveness of the heat exchanger is:-

1) 0.16
2) 0.58
3) 0.72
4) 1.0

Ques # :71

When the air is throttled,there is an entropy increase. For 2 kg/s of air the entropy increase by 0.06 kW/K . The pressure ratio (final to initial state) is [for air, characteristic gas constant= 0.287 kJ/kgK]:-

1) 0.9
2) 1.0
3) 0.8
4) None of these

Ques # :72

Determine the available energy of furnace gas, C_p= 1.046 kJ/kg.K, when it is cooled from 1260 K to 480 K at constant pressure. The surroundings are at 295 K.

1)   -518.1 kJ/kg
2)   428.3 kJ/kg
3)   -1113.7 kJ/kg
4)   None of these

Ques # :73

In an otto cycle, twice as much energy is generated per cycle as is rejected through the exhaust. What is the compression ratio? (for air , k = 1.4)

1) 5.66
2) 7.66

3) 11.2
4) None of these

Ques # :74

A tyre with an inside volume of 1 m³ contains
air at 77°C with a pressure of 5 bar. Air is an ideal
gas under these conditions.The mass(kg) of air
in the tyre is:-

1)   0.172
2)   2.4
3)   4.98
4)   0.06

Ques # :75

Ranking cycle uses steam. The "high" temperature
and pressure are 500 K and 35 bar ; the "low" pressure is
1 bar. The pump work (kJ/kg) for the cycle is (specific
volume of water = 1.043 x 10⁻³ m³/kg)-

1)   3.55
2)   3.4
3)   3.6
4)   None of these

Ques # :76

Oxygen expands in a reversible adiabatic manner through a nozzle from an initial pressure and initial temperature, and with an initial velocity of 50 m/s. There is a decrease of 38 K in temperature across the nozzle. (C_p for oxygen is 0.9185 kJ/kg.K).The exit velocity is :--

1)   268.9 m/s
2)   278.5 m/s
3)   300 m/s
4)   None of these

Ques # :77

A steam turbine receives steam steadily at 10 bar with an enthalpy of 3000 kJ/kg and discharges at 1 bar with an enthalpy of 2700 kJ/kg. The work output is 250 kJ/kg . The change in KE and PE are negligible. The heat transfer from the turbine casing to the surroundings is equal to :-

1) 0 kJ
2) 50 kJ
3) 150 kJ
4) 250 kJ

Ques # :78

Saturated liquid at high-pressure P_1 having enthalpy of saturated liquid 1000 kJ/kg is throttled to a lower pressure P_2. At pressure P_2, enthalpy of saturated liquid and that of the saturated vapour are 800 and 2800 kJ/kg respectively. The dryness fraction of vapour, after trotting process is:-

1)   0.1
2)   0.5

3)   18/28
4)   0.8

Ques # :79

Polar moment of inertia of a hollow tube of diameter 'd' and thickness 't' is

1)
$$\frac{\pi \, d^3 \, t}{32}$$

2)
$$\frac{\pi \, d^3 \, t}{16}$$

3)
$$\frac{\pi \, d^3 \, t}{4}$$

4)
$$\frac{\pi \, d^4}{16}$$

Ques # :80

An air standard Brayton cycle has air entering the compressor at 27 °C and 100 kPa. The pressure ratio is 10 and maximum allowable temperature in the cycle is 1350 K. The temperature after expansion in the turbine will be :-

1) 699 K

2) 650 K

3) 630 K

4) 600 K

Ques # :81

A uniform rod of length 'L', cross- section area 'A' and modulus of elasticity 'E' is held rigidly by fixed supports at the ends and an axial load 'P' is applied at mid length of the rod. The strain energy stored is :-

1) $\dfrac{P^2 L}{EA}$

2) $\dfrac{P^2 L}{4EA}$

3) $\dfrac{P^2 L}{8EA}$

4) None of these

Ques # :82

Chilled cast iron is:-
1) Soft on surface
2) Machine freely
3) High Resitance to wear
4) None of these

Ques # :83

Three carnot engines A, B and C having source temperatures of 750 K, 700 K and 650 K have sink temperatures respectively 400 K, 350 K and 300 K . Which engine is least efficient?
1) Engine A
2) Engine B

3) Engine C
4) none of these

Ques # :84

Pearlite is a combination of :-
1) Ferrite and cementite
2) Cementite and gamma iron
3) Ferrite and austenite
4) Ferrite and iron graphite

Ques # :85

Which of the following is used to find percent idle time for man machines :-
1) Work study
2) Time study
3) Method study
4) Work-sampling

Ques # :86

A four cylinder four stroke petrol engine running at 1000 rpm will have in all how many sparks in one minute?
1) 250
2) 500
3) 1000
4) 2000

Ques # :87

LPG mainly consists of:-
1) Methane and ethane
2) Propane and butane
3) Petrol and diesel
4) Hexane and butadiene

Ques # :88

Dynamo in automobile is a :-
1) Series generator
2) Shunt generator
3) Either of series generator or shunt generator
4) none of these

Ques # :89

Which type of pump is preferred for pumping lubricating oil in automobile:-
1) Open impeller type
2) Centrifugal pump with impeller shrouded on one side only
3) Centrifugal pump with impeller shrouded on both side only
4) Gear pump

Ques # :90

A thermostat is provided in automobile engines for :-
1) Controlling the temperature of the piston
2) Controlling the temperature of the cooling system
3) Regulating the temperature of lubricating oil
4) Regulating the temperature of suction air

Ques # :91

The constraints in given situation are found as follows:-
$0 \leq x \leq 12$
$0 \leq y \leq 9$
$3x+6y \leq 66$

The objective functioin, which is to be maximized, is as follows
$P = 5x+4y$.

Value of x and y are :--

1)   (11,6)
2)   (6,11)
3)   (5,12)
4)   (12,5)

Ques # :92

A dummy activity:-
1) Has no sequence and can be easily fitted anywhere
2) Has only a head event but no tail event
3) Has no head event but only a tail event
4) Neither requires any resources nor any time.

Ques # :93

At breakeven point, slope of sales line is equal to :-
1) $\dfrac{\text{Variable expenses} + \text{Constant expenses}}{\text{Total sales}}$
2) Slope of total expenses line.
3)

$$\frac{\text{Total sales - Profit}}{\text{Variable expenses + Profit}}$$

4) $\dfrac{\text{Variable expenses - Constant expenses}}{\text{Total sales}}$

Ques # :94

A discrepancy is :-

1) The difference between a measurement and true value of the quantity measured

2) The difference between true value of the quantity and error

3) The difference between measured value and actual value

4) The difference between measured values of the same quantity

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Ques # :95

Which of the following is a non -contact type thermometer?

1) Thermocouple

2) Bimetallic strip thermometer

3) Vapour pressure thermometer

4) Optical pyrometer

Ques # :96

A hot wire anemometer is used to measure :-

1) Pressure of gases

2) Liquid discharges

3) Very low pressure

4) Gas velocities

Ques # :97

A piezoelectric crystal can be used to measure :-
1) Temperature
2) Velocity
3) Acceleration
4) Flow

Ques # :98

Which of the following material can bear sudden and excessive shocks better?
1) Cast iron
2) Pig iron
3) White iron
4) Wrought iron

Ques # :99

In petrol engine mechanism , the piston is at its dead centre position when piston:- (a) Acceleration is zero (b) Acceleration is maximum (c) Velocity is zero (d) Velocity is infinity
1) (a) and (d)
2) (a) and (c)
3) (b) and (c)
4) (b) and (d)

Ques # :100

OC curves are used for the selection of lots by :-
1) Attributes
2) Variables
3) Both Attributes and Variables

4) Non of these