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Participant Name	
Test Center Name	Ion Digital Zone IDZ2 Mundka
Test Date	30/11/2019
Test Time	3:30 PM - 5:00 PM
Subject	Senior Engineer (Production)

Section : General English

Q.1 The sentence below has jumbled up parts. Rearrange these parts, which are labelled P, Q, R, S and T to produce the correct sentence. From the options given below choose the one that gives the proper sequence:

of (P)/ what (Q)/ the product (R)/ the quality (S)/ matters most is (T)

- Ans
- 1. QRPST
 - 2. TQPSR
 - 3. QTSPR
 - 4. PRTQS

Question ID : 5944593716
Status : Answered
Chosen Option : 3

Q.2 From the options given below choose the one that gives the meaning of the idiom printed in bold in the given sentence:

Unexpectedly, he proved to be a **man of straw**.

- Ans
- 1. useful
 - 2. very stubborn
 - 3. self-loving
 - 4. weak

Question ID : 5944593722
Status : Not Answered
Chosen Option : --

Q.3 Choose the correct synonym of the word printed in bold from the given options:

She was accused of **slandering** his former boss.

- Ans
- 1. cheating
 - 2. defaming
 - 3. ordering
 - 4. assaulting

Question ID : 5944593718
Status : Not Answered

Q.4 From the options given below choose the one that gives the meaning of the idiom printed in bold in the given sentence:

He has the **gift of the gab**.

- Ans**
- 1. Fluency of speech
 - 2. Writing proficiency
 - 3. Most valuable gift
 - 4. An unexpected gain

Question ID : 5944593721

Status : **Not Answered**

Chosen Option : --

Q.5 From the options given below choose the one that shows error in the given sentence.

Diana was leading a happy and leisurely life after his retirement in service.

A B C D

- Ans**
- 1. C
 - 2. A
 - 3. B
 - 4. D

Question ID : 5944593709

Status : **Answered**

Chosen Option : 3

Q.6 Fill in the blank with the appropriate word from among the four options:

Acoustics is the science of _____.

- Ans**
- 1. sound
 - 2. environment
 - 3. space
 - 4. weather

Question ID : 5944593713

Status : **Answered**

Chosen Option : 1

Q.7 The sentence below has jumbled up parts. Rearrange these parts, which are labelled P, Q, R, S and T to produce the correct sentence. From the options given below choose the one that gives the proper sequence.

I was (p)/child (Q)/ as innocent (R)/ as a (S)/ I told them that (T)

- Ans**
- 1. QTSPR
 - 2. TPRSQ
 - 3. TSQPR
 - 4. TPRQS

Question ID : 5944593715

Status : **Answered**

Chosen Option : 2

Q.8 Find out the misspelt word.

- Ans
- 1. adamantly
 - 2. finally
 - 3. intellectually
 - 4. accordingly

Question ID : 5944593720
Status : Not Answered
Chosen Option : --

Q.9 Choose the correct alternative which can be substituted for the word/ words in bold in the sentence.

He is a magician, **isn't it?**

- Ans
- 1. aren't he?
 - 2. isn't he?
 - 3. is it?
 - 4. is he?

Question ID : 5944593712
Status : Answered
Chosen Option : 2

Q.10 From the options given below choose the one that shows error in the given sentence:

Avinash is so old to stay in a foreign Country for six months.

- Ans
- | | | | | |
|-------------------------------------|------|---|---|---|
| | A | B | C | D |
| <input type="checkbox"/> | 1. B | | | |
| <input type="checkbox"/> | 2. D | | | |
| <input type="checkbox"/> | 3. C | | | |
| <input checked="" type="checkbox"/> | 4. A | | | |

Question ID : 5944593710
Status : Not Answered
Chosen Option : --

Q.11 Find out the misspelt word.

- Ans
- 1. mockery
 - 2. intrude
 - 3. moderator
 - 4. phenomenan

Question ID : 5944593719
Status : Answered
Chosen Option : 4

Q.12 Choose the correct synonym of the word printed in bold from the given options:

Incensed by his rude behavior, all his friends deserted him.

- Ans
- 1. insulted
 - 2. excited

3. enraged

4. annoyed

Question ID : 5944593717

Status : Answered

Chosen Option : 4

Q.13 From the options given below choose the one word substitute for the expression "A person who is mentally ill."

Ans 1. mercenary

2. immoral

3. heretic

4. lunatic

Question ID : 5944593723

Status : Not Answered

Chosen Option : --

Q.14 Fill in the blank with the appropriate word from among the four options:

A person who is selflessly concerned with the welfare of others is _____.

Ans 1. Aesthete

2. pessimist

3. ascetic

4. altruist

Question ID : 5944593714

Status : Not Answered

Chosen Option : --

Q.15 Choose the correct alternative which can be substituted for the word/ words in bold in the sentence.

I will be happy if he does not ascribe any motive **into** my action.

Ans 1. with

2. to

3. for

4. on

Question ID : 5944593711

Status : Not Answered

Chosen Option : --

Section : Reasoning

Q.1 In an examination, five students got different percentage marks. Sania scored more than Neha but less than Shilpa who scored 70%. Shreya scored less marks than Sonam but more than everyone else. The one who scored the minimum marks scored 65% marks and the one who scored the highest got 87% marks. Find out who scored the second lowest score.

Ans 1. Neha

2. Shreya

3. Sonam

4. Sania

Question ID : 5944593731

Status : Answered

Q.2 A certain number of camels and an equal number of owners who are all male are going up a hill. Half of the owners are sitting on their respective camels while the remaining men are walking on foot. If the total number of legs walking on the ground is 70, find the number of camels.

- Ans**
- 1. 16
 - 2. 12
 - 3. 10
 - 4. 14

Question ID : 5944593736

Status : Answered

Chosen Option : 4

Q.3 If Cloth : Measure and Money : Count, then Wheat : ?

- Ans**
- 1. Grind
 - 2. Load
 - 3. Mix
 - 4. Weigh

Question ID : 5944593728

Status : Answered

Chosen Option : 4

Q.4 Below list of words have some aspect in common. Choose the one which is least like other words and is the odd one out.

Beanie, Sweater, Glove, Fleece Jacket, Muffler, Mittens, Sweatshirt

- Ans**
- 1. Beanie
 - 2. Sweatshirt
 - 3. Mittens
 - 4. Fleece Jacket

Question ID : 5944593726

Status : Answered

Chosen Option : 1

Q.5 If Entry : Exit and Arrival : Departure, then Welcome : ?

- Ans**
- 1. Insult
 - 2. Pack-up
 - 3. Farewell
 - 4. Ignore

Question ID : 5944593727

Status : Answered

Chosen Option : 3

Q.6 In a certain coded language, if "743" means "Fruits are good", "657" means "Eat good food" and "934" means "Fruits are ripe", then which number represents "Ripe" in that language?

- Ans**
- 1. 5
 - 2. 4
 - 3. 9
 - 4. 7

Question ID : 5944593729

Status : **Answered**

Chosen Option : 3

Q.7 Read the below statements taking them as true even if they seem to be at variance from the commonly known facts. Then read the conclusions and choose which of these can be definitely drawn from these statements.

Statements:

- 1) Some cars are trucks
- 2) No truck is a bus

Conclusions:

- I) Some buses are cars
- II) No car is a bus

- Ans**
- 1. Only conclusion I follows
 - 2. Neither conclusion I nor II follows
 - 3. Only conclusion II follows
 - 4. Either conclusion I or II follows

Question ID : 5944593733

Status : **Answered**

Chosen Option : 4

Q.8 From the given options below, identify the word which cannot be formed using the letters of the word "STEREOTYPE" such that no letter can be used more times than its number of appearances in this word.

- Ans**
- 1. STRESS
 - 2. TREES
 - 3. POSTER
 - 4. TYRES

Question ID : 5944593725

Status : **Answered**

Chosen Option : 1

Q.9 At a fruit market, a dozen plus three bananas cost Rs. 75. Abhishek decides to buy five dozen bananas. How much he will have to pay for same?

- Ans**
- 1. Rs. 600
 - 2. Rs. 300
 - 3. Rs. 200
 - 4. Rs. 400

Question ID : 5944593734

Status : **Answered**

Chosen Option : 2

Q.10 A book seller loses 4% when he sells a book at Rs. 240. Identify at what price should he sell the book to gain 20% profit?

- Ans**
- 1. Rs. 275
 - 2. Rs. 250
 - 3. Rs. 320
 - 4. Rs. 300

Question ID : 5944593735

Status : **Answered**

Chosen Option : 4

Q.11

Eight members of a club A, B, C, D, E, F, G and H are enjoying tea and are sitting around a square table in such a way that four members are sitting at four corners while others are sitting at the middle of each of the sides. The ones who are sitting at the corners are all facing towards the centre of the table while others are facing outwards. A, who is facing towards the centre, is sitting third to the right of F. E, who is also facing the centre, is not an immediate neighbor of F. Only one person is sitting between F & G. D is sitting to the immediate right of B who is facing towards the centre. C is not an immediate neighbor of A. Identify who is sitting exactly opposite to F?

- Ans
- 1. G
 - 2. C
 - 3. D
 - 4. H

Question ID : 5944593732
Status : Answered
Chosen Option : 4

Q.12 One evening Deepak and Vishnu were talking to each other face to face such that Vishnu's shadow was exactly to the right hand side of Deepak. Which direction was Deepak facing?

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

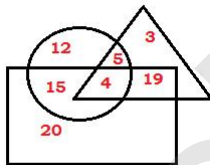
Question ID : 5944593738
Status : Answered
Chosen Option : 4

Q.13 In a certain coded language, if "BEDROOM" is written as "6853009" and "CUPBOARD" is written as 14260735, then how is "BOREDOM" written in that language?

- Ans
- 1. 6038590
 - 2. 6083509
 - 3. 6038509
 - 4. 6035809

Question ID : 5944593730
Status : Answered
Chosen Option : 3

Q.14 In the below diagram, Circle represents Players, Triangle represents Engineers and Rectangle represents Professors.



Identify how many are Professors as well as Engineers but not Players.

- Ans
- 1. 15
 - 2. 19
 - 3. 4
 - 4. 5

Question ID : 5944593737
Status : Answered
Chosen Option : 2

Q.15 In the standard English alphabet series, what is the position of the letter J to the right of the letter which is 12th to the left of letter N?

- Ans
- 1. 12th
 - 2. 5th

3. 4th

4. 8th

Question ID : 5944593724
Status : Answered
Chosen Option : 4

Section : Numerical Aptitude

Q.1 A manufacturer announced a discount of 20% on their pens. A boy wanted to save Rs. 504 in discount. How many pens should he buy to do so, if each pen costs Rs. 360?

- Ans**
- 1. 10
 - 2. 11
 - 3. 7
 - 4. 8

Question ID : 5944593741
Status : Answered
Chosen Option : 3

Q.2 The sum of two numbers is 182 and their HCF is 13. The total numbers of such pairs is:

- Ans**
- 1. 2
 - 2. 1
 - 3. 3
 - 4. 4

Question ID : 5944593739
Status : Answered
Chosen Option : 1

Q.3 If a ten-digit number $678x43267y$, (x and y are non-zero numbers) is divisible by 72, then the value of $\sqrt{2x - y}$ is:

- Ans**
- 1. 4
 - 2. 0
 - 3. 3
 - 4. 2

Question ID : 5944593740
Status : Not Answered
Chosen Option : --

Q.4 If 3 men and 4 women can do a piece of work in 8 days and 3 men and 2 women in 10 days. In how many days can the work be done by 5 men and 6 women working together?

- Ans**
- 1. 6
 - 2. 5
 - 3. 8
 - 4. 4

Question ID : 5944593748
Status : Answered
Chosen Option : 2

Q.5 A number is decreased by 30% then increased by 30% and then further increased by 20% and then decreased by 20%. What is the net increase /decrease percent in the number?

- Ans**
- 1. 12.94% increase

- 2. 17.5% increase
- 3. 15.2% decrease
- 4. 12.64% decrease

Question ID : 5944593742
Status : Answered
Chosen Option : 4

Q.6 In a library, the ratio of number of Mathematics books to that of Computers books was 5:3 and total number of Computer books was 1248. When some more Mathematics books were bought, the ratio became 2:1. The number of Mathematics books bought is:

- Ans**
- 1. 832
 - 2. 312
 - 3. 208
 - 4. 416

Question ID : 5944593745
Status : Answered
Chosen Option : 4

Q.7 A is faster than Q. A and Q each walk 20 km. The sum of their speeds is 7 km/hr and the sum of times taken by them is 14 hours. Then, A's speed (in km/h) is equal to:

- Ans**
- 1. 4.25
 - 2. 5
 - 3. 3.5
 - 4. 4

Question ID : 5944593747
Status : Answered
Chosen Option : 2

Q.8 The value of compound interest (in Rs.), if Rs 40,00,000 is deposited in a bank for one year at the rate of 16% per annum compounded quarterly is:

- Ans**
- 1. Rs. 687987
 - 2. Rs. 679434.24
 - 3. Rs. 679324.5
 - 4. Rs. 697344.56

Question ID : 5944593746
Status : Not Answered
Chosen Option : --

Q.9 A vendor sells 5 clips for a rupee and got 20% profit. How many clips did he buy for a rupee?

- Ans**
- 1. 10
 - 2. 8
 - 3. 7
 - 4. 6

Question ID : 5944593743
Status : Answered
Chosen Option : 4

Q.10

If $x : y : z = 3 : 4 : 5$, what is the value of:

$$\left(\frac{x^2 + y^2 + z^2}{3x^2 - 2y^2 + 4z^2} \right)?$$

- Ans
- 1. $\frac{10}{9}$
 - 2. $\frac{20}{19}$
 - 3. $\frac{1}{19}$
 - 4. $\frac{10}{19}$

Question ID : 5944593744
Status : Answered
Chosen Option : 4

Section : Subject/Discipline

Q.1 _____ Welding technique required vacuum environment.

- Ans
- 1. Electron beam
 - 2. Laser beam
 - 3. Plasma
 - 4. Ultrasonic

Question ID : 5944593796
Status : Answered
Chosen Option : 1

Q.2 Inertia force of reciprocating mass is given as:

- Ans
- 1. $F_i = m\omega^2 r \left[\cos 2\theta + \frac{\cos\theta}{2n} \right]$
 - 2. $F_i = m\omega^2 r \left[\cos 2\theta + \frac{\cos 2\theta}{n} \right]$
 - 3. $F_i = m\omega^2 r \left[\cos\theta + \frac{\cos 2\theta}{2n} \right]$
 - 4. $F_i = m\omega^2 r \left[\cos\theta + \frac{\cos 2\theta}{n} \right]$

Question ID : 5944593757
Status : Answered
Chosen Option : 4

Q.3 If single degree of freedom vibratory system has mass = 3kg, stiffness = 100 N/m and damping coefficient = 3 N-s/m then logarithmic decrement is:

- Ans
- 1. 0.55
 - 2. 0.32
 - 3. 0.65
 - 4. 0.46

Question ID : 5944593759
Status : Not Attempted and Marked For Review

Q.4 Pressure of steady and adiabatic flow of an ideal gas through pipe is reduced from P_1 to P_2 . If $T_0 =$ environment temperature, its irreversibility per unit mass flow rate is given by:

Ans

✓ 1. $T_0 R \ln \frac{P_1}{P_2}$

✗ 2. $T_0 R \ln \left(\frac{P_1 - P_2}{P_2} \right)$

✗ 3. $T_0 R \ln \frac{P_2}{P_1}$

✗ 4. $T_0 R \ln \left(\frac{P_1}{P_1 - P_2} \right)$

Question ID : 5944593768

Status : Answered

Chosen Option : 1

Q.5 For pipes arranged in series:

Ans

✓ 1. the flow rate must be the same in all pipes

✗ 2. the head loss must be same in all pipes

✗ 3. the velocity must be the same in all pipes

✗ 4. the flow rate may be different in different pipes

Question ID : 5944593765

Status : Answered

Chosen Option : 1

Q.6 The laminar boundary layer thickness on a flat plate varies as:

Ans

✗ 1. $x^{(-1/2)}$

✗ 2. x^2

✓ 3. $x^{(1/2)}$

✗ 4. $x^{(4/5)}$

Question ID : 5944593764

Status : Answered

Chosen Option : 3

Q.7 In the theory of columns, Rankine's constant is given by:

Ans

✓ 1. $\frac{\sigma_c}{\pi^2 E}$

✗ 2. $\frac{\sigma_c}{\pi^2}$

✗ 3. $\frac{\sigma_c^2}{\pi^2 E}$

✗ 4. $\frac{\sigma_c}{E}$

Q.8 _____ instrument is used in machining to measure cutting forces the.

- Ans
- 1. Comparator
 - 2. Dynamometer
 - 3. Latometer
 - 4. Tachometer

Question ID : 5944593800

Status : Answered

Chosen Option : 4

Q.9 If a rigid body is in equilibrium, the total virtual work of the external forces acting on the rigid body due to virtual displacement of the body is _____.

- Ans
- 1. $-\infty$
 - 2. $+\infty$
 - 3. 0
 - 4. 1

Question ID : 5944593749

Status : Answered

Chosen Option : 3

Q.10 A dimensionless group formed with the variables ρ (density), ω (angular velocity), μ (dynamic viscosity), and D (characteristic diameter) is:

- Ans
- 1. $\mu D^2 \rho \omega$
 - 2. $\rho \omega D^2 / \mu$
 - 3. $\rho \omega \mu / D^2$
 - 4. $\rho \omega \mu D$

Question ID : 5944593763

Status : Answered

Chosen Option : 2

Q.11 Relation between modulus of rigidity and young's modulus is:

- Ans
- 1. $G = \frac{E}{2(1 + \nu)}$
 - 2. $G = \frac{2E}{(1 + \nu)}$
 - 3. $G = \frac{E}{2(1 - \nu)}$
 - 4. $G = \frac{E}{(1 - 2\nu)}$

Question ID : 5944593752

Status : Answered

Chosen Option : 1

Q.12 _____ can be used to measure the flatness of a machine bed.

- Ans
- 1. Tool makers microscope
 - 2. Vernier calipers
 - 3. Auto collimator
 - 4. Height gauge

Question ID : 5944593805
Status : Answered
Chosen Option : 3

Q.13 The free fall of a body is referred as:

- Ans
- 1. Uniform motion
 - 2. Curvilinear motion
 - 3. Uniformly accelerated motion
 - 4. Non-uniformly accelerated motion

Question ID : 5944593751
Status : Answered
Chosen Option : 3

Q.14 The rank of the matrix A is:

$$A = \begin{bmatrix} 3 & 0 & 2 & 2 \\ -6 & 42 & 24 & 54 \\ 21 & -21 & 0 & -15 \end{bmatrix}$$

- Ans
- 1. 2
 - 2. 3
 - 3. 1
 - 4. 0

Question ID : 5944593782
Status : Answered
Chosen Option : 2

Q.15 Los Alamitos Store buys sets of steel at \$40 per set from an outside vendor. It will sell 6,400 sets evenly throughout the year. The store's carrying cost is \$8 per unit per year. The ordering cost is \$100 per order. Total number of order per year is:

- Ans
- 1. 20
 - 2. 16
 - 3. 18
 - 4. 14

Question ID : 5944593807
Status : Answered
Chosen Option : 2

Q.16 The order of error in the Simpson's rule for numerical integration with a step size h is:

- Ans
- 1. h^4
 - 2. h^3
 - 3. h^2

✗ 4. h

Question ID : 5944593778

Status : **Not Attempted and Marked For Review**

Chosen Option : --

Q.17 Self lubricating bearings can be manufactured by _____.

- Ans
- 1. Powder Metallurgy
 - 2. Forming
 - 3. Extrusion
 - 4. Drawing

Question ID : 5944593793

Status : **Answered**

Chosen Option : 1

Q.18 Spherical drop of molten metal of radius 4 was found out to solidify in 10 sec. A similar drop of radius 8 mm would solidify in:

- Ans
- 1. 20 sec
 - 2. 10 sec
 - 3. 40 sec
 - 4. 4 sec

Question ID : 5944593795

Status : **Answered**

Chosen Option : 3

Q.19 Epicyclic gear train has _____ degrees of freedom.

- Ans
- 1. 1
 - 2. 4
 - 3. 2
 - 4. 3

Question ID : 5944593756

Status : **Answered**

Chosen Option : 3

Q.20 The Hole $80.00^{+0.30}_{+0.00}$ & Shaft $80.00^{+0.021}_{+0.002}$ when assembled will result in:

- Ans
- 1. Clearance fit
 - 2. Drive fit
 - 3. Transition fit
 - 4. Interference fit

Question ID : 5944593804

Status : **Answered**

Chosen Option : 3

Q.21 Let e^z is a periodic with period of:

- Ans
- 1. 2π
 - 2. π

✓ 3. 2π

✗ 4. $i\pi$

Question ID : 5944593787

Status : **Not Attempted and Marked For Review**

Chosen Option : --

Q.22 For polytropic process ($Pv^n = \text{constant}$), the value of 'n' between two states (1 and 2) is given as:

Ans

✗ 1. $n = \frac{\ln(P_1 - P_2)}{\ln(v_1 - v_2)}$

✗ 2. $n = \frac{\ln\left(\frac{P_1}{P_2}\right)}{\ln\left(\frac{v_1}{v_2}\right)}$

✓ 3. $n = \frac{\ln(P_1/P_2)}{\ln(v_2/v_1)}$

✗ 4. $n = \frac{\ln(P_1 P_2)}{\ln(v_1 v_2)}$

Question ID : 5944593767

Status : **Answered**

Chosen Option : 3

Q.23 _____ is most suitable process for casting of turbine blades made of high temperature and high strength alloy.

Ans

✗ 1. Centrifugal casting

✓ 2. Investment casting

✗ 3. Die casting

✗ 4. Slush casting

Question ID : 5944593794

Status : **Answered**

Chosen Option : 2

Q.24 In counter flow heat exchanger, the product of specific heat and mass flow rate is same for hot and cold fluids. If NTU is equal to 0.5, then effectiveness of the heat exchanger is:

Ans

✗ 1. 0.2

✗ 2. 0.5

✓ 3. 0.33

✗ 4. 1.0

Question ID : 5944593772

Status : **Answered**

Chosen Option : 3

Q.25 In Electrochemical machining (ECM), rate of material removal is:

Ans

✗ 1. Directly proportional to square of the hardness

✓ 2. Independent of the workpiece hardness

✗ 3. Directly proportional to workpiece hardness

✗ 4. Inversely proportional to workpiece hardness

Question ID : 5944593802
Status : Answered
Chosen Option : 2

Q.26 In blanking process, clearance is provided:

- Ans
- 1. On the punch
 - 2. Both on punch and die
 - 3. On the die
 - 4. Neither on die nor on punch

Question ID : 5944593799
Status : Answered
Chosen Option : 1

Q.27 Regulation of flow in Pelton Turbine is done by changing:

- Ans
- 1. The head available at the nozzle
 - 2. The vane angle
 - 3. The velocity of flow from nozzle
 - 4. The annular area of the nozzle

Question ID : 5944593773
Status : Answered
Chosen Option : 4

Q.28 Saturated state of pure substance (water) is a:

- Ans
- 1.
State from which a change of phase may occur without a change in pressure or temperature.
 - 2.
State from which a change of phase may occur with a change in pressure or temperature.
 - 3.
State from which a change of phase may occur with a change in pressure and temperature.
 - 4.
State from which a change of phase may occur without a change in pressure and temperature.

Question ID : 5944593769
Status : Answered
Chosen Option : 4

Q.29 For face-centered cubics, the coordination number is:

- Ans
- 1. 12
 - 2. 8
 - 3. 14
 - 4. 10

Question ID : 5944593791
Status : Answered
Chosen Option : 1

Q.30 The curvature equation of beam is given as:

Ans

1. $M = EI \frac{dy}{dx}$

2. $M = EI \frac{d^2y}{dx^2}$

3. $M = EI \frac{d^2y}{dx^2}$

4. $M = EI \frac{d^4y}{dx^4}$

Question ID : 5944593755

Status : Marked For Review

Chosen Option : 3

Q.31 The motion of the particle is defined as $x = t^3 + t - 5$, where 'x' is the displacement in meter and 't' is time in sec. Find the velocity and acceleration at 5 sec.

Ans 1. 70 m/s, 60 m/s²

2. 25 m/s, 50 m/s²

3. 76 m/s, 30 m/s²

4. 47 m/s, 30 m/s²

Question ID : 5944593750

Status : Answered

Chosen Option : 3

Q.32 Volume of an FCC unit cell in terms of the atomic radius R is:

Ans 1. $8R\sqrt{2}$

2. $16 R^3 \sqrt{2}$

3. $8 R^3 \sqrt{2}$

4. $16R\sqrt{2}$

Question ID : 5944593792

Status : Answered

Chosen Option : 2

Q.33 When a cylindrical bar is located in Vee block, how many number of degree of freedom will be restricted:

Ans 1. 7

2. 8

3. 4

4. 2

Question ID : 5944593803

Status : Not Answered

Chosen Option : --

Q.34 Which one of the following is not part of material requirement planning?

Ans 1. Inventory level

2. Material price

3. Bill of material

4. Production schedule

Question ID : 5944593806

Status : Not Answered

Chosen Option : --

Q.35 A process of joining metal pipes usually in the form of overlapped joints by making a filler metal flow into the gap between them by capillary action is known as:

- Ans
- 1. Rolling
 - 2. Soldering
 - 3. Brazing
 - 4. Braze welding

Question ID : 5944593797

Status : Answered

Chosen Option : 3

Q.36 A differential equation is considered to be ordinary if it has:

- Ans
- 1. one dependent variable
 - 2. more than one dependent variable
 - 3. more than one independent variable
 - 4. one independent variable

Question ID : 5944593781

Status : Not Attempted and Marked For Review

Chosen Option : --

Q.37 Which one of the following options provides the correct values of eigen values of the matrix S?

$$S = \begin{bmatrix} 1 & 0 & 0 \\ 2 & 8 & 0 \\ 4 & 9 & 7 \end{bmatrix}$$

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

Question ID : 5944593783

Status : Answered

Chosen Option : 3

Q.38 Which of the following is not true for Rolling contact bearing?

- Ans
- 1. Low starting friction
 - 2. Good damping ability
 - 3. Can support combined load
 - 4. Compact in axial direction

Question ID : 5944593760

Status : Not Answered

Chosen Option : --

Q.39

A solid spherical ball taken out of a furnace at 1200 K is allowed to cool in air. Given the following,
radius of the ball = 2 cm
density of the ball = 7800 kg/m³
specific heat of the ball = 420 kJ/kg emissivity = 0.85
Stefan-Boltzman constant = 5.67 x10⁻⁸ W/m²K⁴
Ambient temperature = 300 K Convection coefficient to air = 350 W/m²K
The differential equation governing the temperature θ of the ball as a function of time t is given by:

Ans

1. $\frac{d\theta}{dt} = -1.6026 \times 10^{-2}(\theta - 300)$

2.

$$\frac{d\theta}{dt} = 2.2067 \times 10^{-12}(\theta^4 - 81 \times 10^8) + 1.6026 \times 10^{-2}(\theta - 300)$$

3. $\frac{d\theta}{dt} = -2.2067 \times 10^{-12}(\theta^4 - 81 \times 10^8)$

4.

$$\frac{d\theta}{dt} = -2.2067 \times 10^{-12}(\theta^4 - 81 \times 10^8) - 1.6026 \times 10^{-2}(\theta - 300)$$

Question ID : 5944593780

Status : Not Attempted and Marked For Review

Chosen Option : --

Q.40 Coefficient of performance(COP) of vapour compression refrigeration system with T_e as evaporator temperature and T_c as condenser temperature:

Ans

1. Increases with decrease in T_e at constant T_c

2. Increases with increase in T_c at constant T_e

3. Increases with increase in T_e at constant T_c

4. Does not change with variation of T_e at constant T_c

Question ID : 5944593766

Status : Answered

Chosen Option : 3

Q.41 Directional derivative of $f(x, y, z) = 2x^2 + 3y^2 + z^2$ at $Q: (2, 1, 3)$ in the direction of $p = 1, 0, -2$ is:

Ans

1. $\frac{20}{\sqrt{5}}$

2. $\frac{-20}{\sqrt{5}}$

3. $\frac{-4}{\sqrt{5}}$

4. $\frac{4}{\sqrt{5}}$

Question ID : 5944593786

Status : Answered

Chosen Option : 3

Q.42 Using Newton-Raphson method, find a root correct to three decimal places of the equation $x^3 - 3x - 5 = 0$. Take initial guess as 2.

Ans

1. 2.275

2. 2.333

3. 2.222

✓ 4. 2.279

Question ID : 5944593776
Status : Answered
Chosen Option : 2

Q.43 A bar of 20 mm diameter is subjected to pull of 50 KN. If the measured extension over the gauge length of 20 cm is 0.1mm and the change in diameter is 0.0035 mm, Poisson's ratio and young's modulus are:

- Ans
- ✓ 1. 0.35, 318 GPa
 - ✗ 2. 0.18, 200 GPa
 - ✗ 3. 0.25, 180 GPa
 - ✗ 4. 0.1, 108 GPa

Question ID : 5944593753
Status : Answered
Chosen Option : 1

Q.44 _____ is not associated with the vector calculus.

- Ans
- ✗ 1. Gauss Theorem
 - ✗ 2. Greens Theorem
 - ✓ 3. Kennedy's Theorem
 - ✗ 4. Stokes's Theorem

Question ID : 5944593785
Status : Answered
Chosen Option : 3

Q.45 In heat Transfer process, Grashoff number signifies the ratio of:

- Ans
- ✗ 1. inertia force to viscous force
 - ✓ 2. buoyancy force to viscous force
 - ✗ 3. inertia force to surface tension force
 - ✗ 4. buoyancy force to inertia force

Question ID : 5944593770
Status : Answered
Chosen Option : 2

Q.46 Magnification factor is maximum at a frequency ratio (r):

- Ans
- ✗ 1. $r = \sqrt{1 - \zeta^2}$
 - ✗ 2. $r = \sqrt{1 + 2\zeta^2}$
 - ✗ 3. $r = \sqrt{1 - 2\zeta}$
 - ✓ 4. $r = \sqrt{1 - 2\zeta^2}$

Question ID : 5944593758
Status : Answered
Chosen Option : 1

Q.47 For stable equilibrium of floating bodies, the centre of gravity has to be always:

- Ans
- ✗ 1. below the centre of buoyancy

- 2. above the metacentre
- 3. below the metacentre
- 4. above the centre of buoyancy

Question ID : 5944593762
Status : Answered
Chosen Option : 1

Q.48 In the Gauss elimination method for solving a system of linear algebraic equations, triangularization leads to:

- Ans
- 1. Singular Matrix
 - 2. Lower Triangular matrix
 - 3. Upper Triangular matrix
 - 4. Diagonal matrix

Question ID : 5944593777
Status : Not Answered
Chosen Option : --

Q.49 Consider the following statements:

- i. Slow heating of water from an electric heater.
 - ii. Isentropic expansion of air.
 - iii. Evaporation of a liquid from a heat source at the evaporation temperature.
 - iv. Constant pressure heating of a gas by a constant temperature source.
- Which of these processes is/are reversible?

- Ans
- 1. ii and iv
 - 2. iii and iv
 - 3. iv only
 - 4. ii and iii

Question ID : 5944593775
Status : Answered
Chosen Option : 4

Q.50 Expected time of an activity when pessimistic time (t_p) = 12 days, Most likely time (t_m) = 9 days, Optimistic time (t_o) = 6 days is:

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

Question ID : 5944593808
Status : Answered
Chosen Option : 4

Q.51 i^i where $i = \sqrt{-1}$:

- Ans
- 1. 1
 - 2. $e^{-\pi/2}$
 - 3. $\pi/2$
 - 4. 0

Question ID : 5944593788

Status : Answered

Chosen Option : 2

Q.52 A fair coin is tossed 3 times in succession. If the first toss produces a tail then the probability of getting exactly two tails in three toss is:

- Ans
- 1. $3/4$
 - 2. $1/4$
 - 3. $1/8$
 - 4. $1/2$

Question ID : 5944593790

Status : Answered

Chosen Option : 4

Q.53 Newton's law of viscosity relates:

- Ans
- 1. pressure, velocity and viscosity
 - 2. shear stress and rate of angular deformation in a fluid
 - 3. pressure, viscosity and rate of angular deformation
 - 4. shear stress and shear strain in a fluid

Question ID : 5944593761

Status : Answered

Chosen Option : 2

Q.54 The value of the integral $\oint_C \sec z \, dz$ where C is unit circle.

- Ans
- 1. 4
 - 2. 0
 - 3. 1
 - 4. 2

Question ID : 5944593789

Status : Answered

Chosen Option : 2

Q.55 The differential equation $2 \frac{dy}{dx} + x^2 y^2 = 2x + 3, y(0) = 5$ is:

- Ans
- 1. linear
 - 2. non-linear
 - 3. undeterminable to be linear or non-linear
 - 4. linear with fixed constants

Question ID : 5944593779

Status : Answered

Chosen Option : 2

Q.56 Usually fins are provided to increase the rate of heat transfer. But fins also acts as insulation. Which one of the following non-dimensional numbers decides this factor?

- Ans
- 1. Peclet number
 - 2. Fourier number
 - 3. Biot number

✗ 4. Eckert number

Question ID : 5944593771
Status : Answered
Chosen Option : 2

Q.57 $\lim_{x \rightarrow 0} \frac{x - \sin x}{1 - \cos x} =$

- Ans
- 1. 1
 - 2. 0
 - 3. Not defined
 - 4. 3

Question ID : 5944593784
Status : Answered
Chosen Option : 2

Q.58 During orthogonal machining with a cutting tool having a 10° rake angle, the chip thickness is measured to be 0.4 mm, uncut chip thickness being 0.15 then shear strain is _____.

- Ans
- 1. 4.71
 - 2. 2.71
 - 3. 5.51
 - 4. 3.78

Question ID : 5944593801
Status : Not Answered
Chosen Option : --

Q.59 Plastic deformation of the metals below the recrystallisation temperature is known as:

- Ans
- 1. Joining process
 - 2. Cold working process
 - 3. Hot working process
 - 4. Warm working process

Question ID : 5944593798
Status : Answered
Chosen Option : 2

Q.60 Which of the following is the highest specific speed turbine?

- Ans
- 1. Francis turbine
 - 2. Pelton wheel with double jet
 - 3. Kaplan turbine
 - 4. Pelton wheel with single jet

Question ID : 5944593774
Status : Answered
Chosen Option : 3