NHPC JE

Previous Year Paper

Mechanical
6 April 2022 (Shift 2)

NHPC Limited
(A Government of India Enterprise)
⭐ Mini-Ratna Category-I PSU

India's Premier Hydro Power Utility

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NHPC

Participant ID	
Participant Name	
Test Center Name	
Test Date	06/04/2022
Test Time :	2:00 PM - 5:00 PM
Subject	Junior Engineer (Mechanical)

Section : **General Awareness**

Q.1 Lakshadweep is under the jurisdiction of:

Ans ✗ A. the High Courtof Andhra Pradesh

✗ B. the High Courtof Chhattisgarh

✗ C. the High Court of Bombay

✔ D. the High Court of Kerala

Question ID : **1034358413**

Status : **Answered**

Q.2 In which year was the National Green Tribunal Act enacted?

Ans ✅ A. 2010

❌ B. 2009

❌ C. 2007

❌ D. 2011

Question ID : **1034358411**

Status : **Answered**

Q.3 The Fourth Mysore war was fought between _____ and the East India Company under General Lord Mornington.

Ans ✅ A. Tipu Sultan

❌ B. Aurangzeb

❌ C. Shuja-ud-Daula

❌ D. Sher Shah Suri

Question ID : **1034358402**

Status : **Answered**

Q.4 Which of the following is a type of Open Market Creation?

Ans ❌ A. Neutral

❌ B. Quantitative

✅ C. Expansionary

❌ D. Government spending

Question ID : **1034358394**

Status : **Answered**

Q.5 Which organization was established to administer all multilateral trade agreements by providing equal opportunities to all countries in the international market for trading purpose?

Ans ✗ A. World Economic Forum

✓ B. World Trade Organization

✗ C. Export Credit Guarantee Corporation

✗ D. International Trade Promotion Organization

Question ID : **1034358393**

Status : **Answered**

Q.6 The Battle of Pratapgarh, Battle of Kolhapur, Battle of Pavan Khind and Battle of Vishalgad is a reference to which of the following dynasties?

Ans ✗ A. Maurya Dynasty

✓ B. Maratha Dynasty

✗ C. Slave Dynasty

✗ D. Mughal Dynasty

Question ID : **1034358403**

Status : **Answered**

Q.7 Who wrote the book 'The Man-Eaters of Kumaon'?

Ans ✓ A. Jim Corbett

✗ B. Andrew Duff

✗ C. Ruskin Bond

✗ D. William Dalrymple

Question ID : **1034358388**

Status : **Answered**

Q.8 In which year did the three-tier scheme of Panchayati Raj begin functioning in India?

Ans ✗ A. 1961

✗ B. 1980

✔ C. 1959

✗ D. 1970

Question ID : **1034358412**

Status : **Answered**

Q.9 In which year first official common wealth games started?

Ans ✗ A. 1950

✗ B. 1970

✗ C. 1966

✔ D. 1930

Question ID : **1034358414**

Status : **Answered**

Q.10 'Shelter belts' is a reference to:

Ans ✗ A. infiltration of water

✔ B. planting lines of trees

✗ C. methods of watering plants

✗ D. protection of animals

Question ID : **1034358398**

Status : **Not Answered**

Chosen Option : **--**

Q.11 Population growth has two components, namely natural and induced. Which of the following best explains 'induced' population growth?

Ans ✔ A. Inward and outward movement of people

✘ B. Death rate

✘ C. Permanent residence of people in a particular area

✘ D. Birth rate

Question ID : 1034358400

Status : **Answered**

Q.12 Who was the first Indian to claim a World Title in Motorsports, FIM World Cup in the women's category?

Ans ✔ A. Aishwarya Pissay

✘ B. Garima Avtar

✘ C. Mira Erda

✘ D. Alisha Abdullah

Question ID : 1034358416

Status : **Answered**

Q.13 In the context of technology used in football, VAR stands for:

Ans ✔ A. Video Assistant Referees

✘ B. Video Assistant Replays

✘ C. Video At Risk

✘ D. Video Assurance Review

Question ID : 1034358415

Status : **Answered**

Q.14 Pushkar Fair is also known as _____

Ans ✔ A. Camel Fair

✘ B. Rayno Fair

✘ C. Dog Fair

✘ D. Elephant Fair

Question ID : 1034358389

Status : **Answered**

Q.15 The Shanti Swarup Bhatnagar Award is given by which of the following organisations?

Ans ✘ A. ICMR

✘ B. DRDO

✘ C. ISRO

✔ D. CSIR

Question ID : 1034358406

Status : **Answered**

Q.16 Which soil, ideal for growing cotton, made up of lava flows, is also made up of extremely fine i.e., clayey material and it develops deep cracks during hot weather?

Ans ✘ A. Laterite soil

✘ B. Arid soil

✔ C. Black soil

✘ D. Alluvial soil

Question ID : 1034358399

Status : **Answered**

Q.17 Which gas is absorbed during photosynthesis?

Ans ✗ A. Hydrogen

✗ B. Oxygen

✗ C. Nitrogen

✓ D. Carbon dioxide

Question ID : **1034358396**

Status : **Answered**

Q.18 NABARD is a:

Ans ✗ A. public sector bank

✓ B. development bank

✗ C. central bank

✗ D. retail bank

Question ID : **1034358392**

Status : **Answered**

Q.19 The inertia of an object can be measured by its _____.

Ans ✗ A. acceleration

✗ B. state of motion

✗ C. force

✓ D. mass

Question ID : **1034358395**

Status : **Answered**

Q.20 The Mahamastakabhisheka refers to:

Ans ✔ A. anointment of Jain images held on a large scale

✘ B. anointment held at the Golden Temple once every 12 years

✘ C. anointment of Krishna images held on a large scale

✘ D. Maha Kumbha Mela when people take dip in Sangam

Question ID : **1034358391**

Status : **Not Answered**

Chosen Option : **--**

Q.21 Ravi Kumar Dahiya bagged the Silver medal for which of the following sports in Tokyo Olympics 2020?

Ans ✔ A. Wrestling

✘ B. Badminton

✘ C. Hockey

✘ D. Boxing

Question ID : **1034358407**

Status : **Answered**

Q.22 Which is the shallowest part of the ocean, showing an average gradient of 1° or even less and it typically ends at a very steep slope?

Ans ✘ A. Deep Sea Plain

✘ B. Oceanic Deeps

✔ C. Continental Shelf

✘ D. Continental Slope

Question ID : **1034358401**

Status : **Answered**

Q.23 Tamil Nadu government has decided to celebrate the birth anniversary of the reformist leader EV Ramaswamy as:

Ans ✗ A. Movement Day

✔ B. Social Justice Day

✗ C. Pandemic Day

✗ D. Medication Day

Question ID : **1034358408**

Status : **Not Answered**

Chosen Option : **--**

Q.24 Which of the following was an important battle fought during the time of Emperor Ashoka?

Ans ✗ A. First Battle of Panipat

✔ B. Kalinga War

✗ C. Battle of Haldighati

✗ D. Battle of Pullalur

Question ID : **1034358404**

Status : **Answered**

Q.25 Which of the following Sultans of Delhi has been described by the historians as the 'Mixture of opposite'?

Ans ✗ A. Ghiyas-ud-din Balban

✗ B. Shams-ud-din-Iltutmish

✔ C. Muhammad Tughlaq

✗ D. Kaiqubad

Question ID : **1034358405**

Status : **Not Answered**

Chosen Option : **--**

Q.26 Who among the following has been appointed by the World Athletics as the Head of Global Development?

Ans ✗ A. Sai Praneeth

✗ B. Amit Phangal

✓ C. Laurent Boquillet

✗ D. Lin Das

Question ID : **1034358417**

Status : **Answered**

Q.27 Who was the first speaker of the Lok Sabha?

Ans ✗ A. Hukam Singh

✓ B. Ganesh Vasudev Mavalankar

✗ C. Neelam Sanjiva Reddy

✗ D. MA Ayyangar

Question ID : **1034358410**

Status : **Answered**

Q.28 When an electric current is passed through a conductor, the conductor becomes hot after sometime and produces heat. This happens due to:

Ans ✓ A. conversion of electric energy into heat energy

✗ B. resistors in series

✗ C. the triangle technique

✗ D. conversion of heat energy into electric energy

Question ID : **1034358397**

Status : **Answered**

Q.29 Bamnia Chhau Dance Festival is organized by which of the following states?

Ans ✗ A. Madhya Pradesh

✗ B. Odisha

✗ C. Chhattisgarh

✔ D. West Bengal

Question ID : **1034358390**

Status : **Answered**

Q.30 Who was the first Indian to receive the World Food Prize in 1987?

Ans ✗ A. Dr. Rattan Lal

✔ B. MS Swaminathan

✗ C. Dr. BR Barwale

✗ D. Dr. Verghese

Question ID : **1034358409**

Status : **Answered**

Section : **Reasoning**

Q.1 One morning Rohan left his home and walked 20 km southwards, turned right and walked 10 km and turned right and walked 20 km and turned left and walked 20 km. How many kilometres will he have to walk to reach his home straight?

Ans ✗ A. 25 km

✗ B. 35 km

✔ C. 30 km

✗ D. 20 km

Question ID : **1034358441**

Status : **Answered**

Q.2 If 'Purple' means 'Maroon', 'Maroon' means 'Green', 'Green' means 'Red', 'Red' means 'Grey', 'Grey' means 'Salmon' and 'Salmon' means 'Ivory', then what is the colour of the human blood?

Ans ✗ A. Salmon

✗ B. Green

✗ C. Maroon

✓ D. Grey

Question ID : **1034358429**

Status : **Answered**

Q.3 Select the option that is related to the third word in the same way as the second word is related to the first word.
Deafness : Ear : : Myopia : ?

Ans ✗ A. Stomach

✗ B. Nose

✗ C. Throat

✓ D. Eye

Question ID : **1034358425**

Status : **Answered**

Q.4 Select the combination of letters from among the given options that can sequentially replace the question marks (?) in the following series.
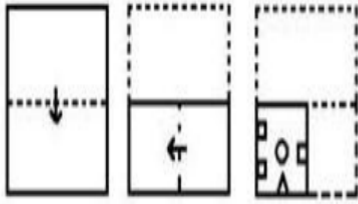**Z, U, P, K, F, ?, V, Q, ?, G, B**

Ans ✗ A. Z, K

✗ B. Z, P

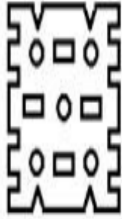✓ C. A, L

✗ D. A, M

Question ID : **1034358420**

Status : **Answered**

Q.5 The sequence of folding a piece of paper and the manner in which the folded paper has been cut is shown in the following figures. How would this paper look when unfolded?
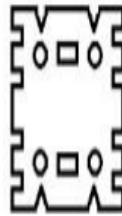
Ans

✗ A.

✓ B.

✗ C.

✗ D.

Question ID : 1034358444
Status : **Answered**

Q.6 Four pair of words have been given, out of which three pairs are alike in some manner and one is different. Select the pair of words that is different.

Ans ✗ A. Boxing : Ring

✗ B. Golf : Course

✗ C. Baseball : Diamond

✔ D. Pool : Swimming

Question ID : 1034358422

Status : **Answered**

Q.7 Select the number from among the given options that can replace the question mark (?) in the following series.
3, 5, 7, 12, 37, 69, 357, ?

Ans ✗ A. 665

✗ B. 645

✔ C. 656

✗ D. 654

Question ID : 1034358438

Status : **Not Answered**

Chosen Option : --

Q.8 Study the given pattern carefully and select the number from among the given options that can replace the question mark (?) in it.

14	22	5
18	42	11
22	35	?

Ans ✗ A. 7

✗ B. 12

✗ C. 9

✓ D. 8

Question ID : 1034358435

Status : **Not Answered**

Chosen Option : **--**

Q.9 In a certain code language,
'Boys dance good' is written as 'JAP TRC XZB',
'Sing of boys' is written as 'ODE JAP RGJ' and
'Did sing dance' is written as 'TRC KMI ODE'.
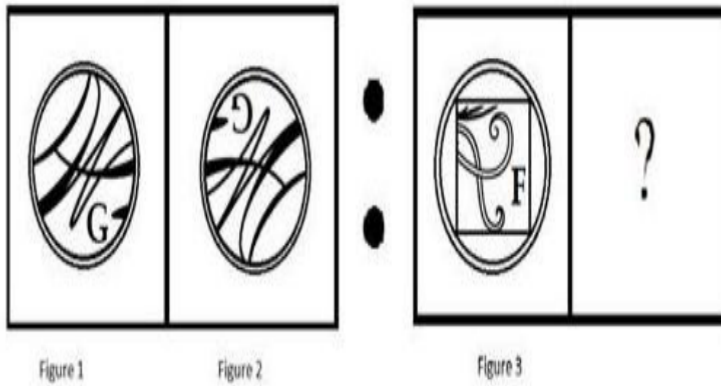What does code 'RGJ' stand for?
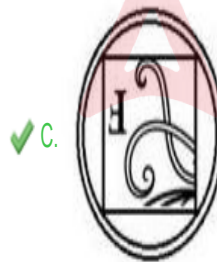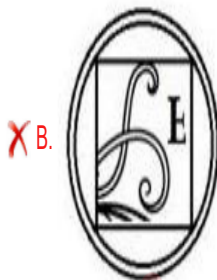
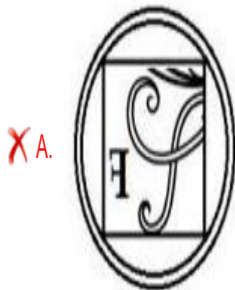Ans ✗ A. Dance

✗ B. Good

✗ C. Did

✓ D. Of

Question ID : 1034358428

Status : **Answered**

Q.10 Select the option that is related to the third figure in the same way as the second figure is related to the first figure.

Figure 1   Figure 2   Figure 3

Ans

✗ A.

✗ B.

✔ C.

✗ D.

Question ID : 1034358446

Status : **Answered**

Q.11 The distance between Nalini and Pramod is 50 m and that between Sarayu and Ravali is 40 m. Sarayu is to the west of Ravali, who is to the east of Nalini at a distance of 70 m. Pramod is to the west or northwest or north of Sarayu.
If Sarayu is to the south of Pramod, what is the distance between Pramod and Sarayu?

Ans ✗ A. 80 m

✗ B. 20 m

✓ C. 40 m

✗ D. 35 m

Question ID : **1034358443**

Status : **Not Answered**

Chosen Option : **--**

Q.12 Pramod, Dilip, Rohan, Sukumar, Tilak, Vishak, Wasim and Nilam are sitting around a circle facing the centre. Tilak is second to the right of Rohan, who is third to the right of Pramod. Sukumar is second to the left of Pramod and fourth to the right of Dilip. Nilam is third to the right of Vishak, who is not an immediate neighbour of Pramod. Who is to the immediate left of Nilam?

Ans ✓ A. Sukumar

✗ B. Tilak

✗ C. Pramod

✗ D. Vishak

Question ID : **1034358431**

Status : **Answered**

Q.13 Select the combination of letters that when sequentially placed in the blanks of the given series will complete the series.

LM_NP_ _MNN_OLM_ _POL_NNP_

Ans ✅ A. NOLPNNMO

❌ B. NMOOLPNN

❌ C. NOOLPNMN

❌ D. NOOLPNNM

Question ID : **1034358421**

Status : **Answered**

Q.14 Identify the term that does NOT belong to the following series.

SOLD, RRGK, QUBQ, PXWY, OARF, NDMM

Ans ❌ A. OARF

✅ B. QUBQ

❌ C. PXWY

❌ D. NDMM

Question ID : **1034358419**

Status : **Not Answered**

Chosen Option : **--**

Q.15 Which two signs should be interchanged in the following equation to make it correct?

79−294 ÷14+25 ×4 =0

Ans ✅ A. + and −

❌ B. + and ÷

❌ C. × and −

❌ D. × and ÷

Question ID : **1034358437**

Status : **Not Answered**

Chosen Option : **--**

Q.16 Select the letter-cluster from among the given options that can replace the question mark (?) in the following series.
QCOZ, TZRW, WWUT, ZTXQ, ?
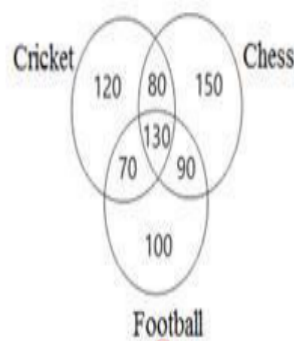
Ans   ✗ A. WWUT

      ✗ B. CWAT

      ✗ C. WQUN

      ✔ D. CQAN

Question ID : **1034358418**

Status : **Answered**

Q.17 The diagram shows the survey on a sample of 500 students with reference to their choice of interest in sports. 90 represents the group of which of the following students?

Ans   ✔ A. Chess and Football

      ✗ B. Neither Chess nor Football

      ✗ C. Chess and Cricket

      ✗ D. Chess, Football and Cricket

Question ID : **1034358440**

Status : **Answered**

Q.18 Dipak started from his home and walked 100 m towards the north to reach cafe. He then turned to the left and walked for about 50 m to reach ATM, turned left again and walked 105 m. Finally, he turned to the right at an angle of 45° to reach the ground. In which direction was he moving finally?

Ans ✗ A. North-west

✗ B. South-east

✗ C. North-east

✔ D. South-west

Question ID : **1034358442**

Status : **Answered**

Q.19 Select the figure from among the given options that can replace the question mark (?) in the following series.

Ans

✗ A.

✔ B.

✗ C.

✗ D.

Question ID : **1034358445**

Status : **Answered**

Q.20 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:
Some fishes are nets.
Some nets are boats.
All boats are fishes.
Conclusions:
(I) All boats are nets.
(II) All nets are fishes.

Ans ✗ A. Only Conclusion (I) definitely follows.

✗ B. Only Conclusion (II) definitely follows.

✗ C. Both Conclusions (I) and (II) definitely follow.

✔ D. Both Conclusions (I) and (II) definitely donot follow.

Question ID : **1034358433**
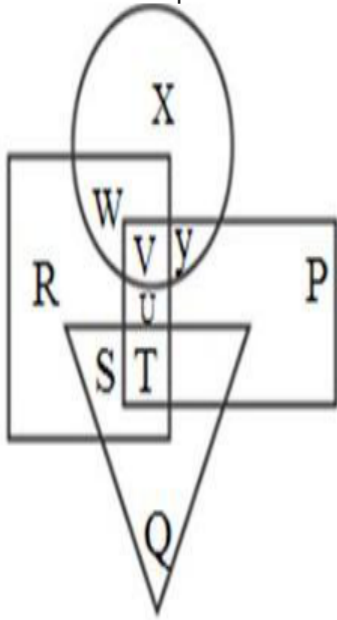
Status : **Not Answered**

Chosen Option : **--**

Q.21 उस विकल्प का चयन करें जो तीसरे शब्द से ठीक उसी तरह संबंधित है जिस प्रकार दूसरा शब्द पहले शब्द से संबंधित है।
टोली: बंदर :: झुंड : ?

Ans ✗ A. हाथी

✗ B. मछली

✗ C. भालू

✔ D. मधुमक्खियाँ

Question ID : **1034358426**

Status : **Answered**

Q.22 In the following figure, square represents Pharmacists, triangle represents Cardiologists, circle represents Extroverts and rectangle represents Researchers. Which set of letters represents Pharmacists who are also Extroverts?

Ans ✗ A. R, S

✓ B. W, V

✗ C. X, Y

✗ D. S, T

Question ID : 1034358439

Status : **Answered**

Q.23 Four words have been given, out of which three are alike in some manner and one is different. Select the word that is different.

Ans ✗ A. See

✓ B. Walk

✗ C. Touch

✗ D. Listen

Question ID : 1034358423

Status : **Answered**

Q.24 In a certain code language, FOX is coded as 539, DETOX is coded as 42139 and VIXEN is coded as 70926. How will TOXIN be coded in that language?

Ans ✗ A. 91306

✗ B. 13096

✔ C. 13906

✗ D. 31960

Question ID : 1034358427

Status : **Answered**

Q.25 Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.
Statements:
All gardens are diamonds.
Some gardens are five.
All five are parks.
Conclusions:
(I) All gardens are parks.
(II) Some diamonds are parks.

Ans ✗ A. Both Conclusions (I) and (II) definitely follow.

✗ B. Only Conclusion (I) definitely follows.

✗ C. Both Conclusions (I) and (II) definitely donot follow.

✔ D. Only Conclusion (II) definitely follows.

Question ID : 1034358434

Status : **Not Answered**

Chosen Option : **--**

Q.26 The first two words of the following question bears a relationship between them, choose the alternative which has the similar relationship with the third word.
Thermometer : Temperature : : ?

Ans ✔ A. Hygrometer : Humidity

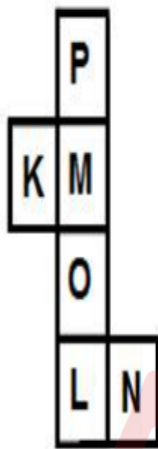✗ B. Sphygmomanometer : Wind Speed

✗ C. Ammeter : Potential Difference

✗ D. Voltmeter : Current

Question ID : **1034358424**

Status : **Answered**

Q.27 A cube is made by folding the given sheet. In the cube so formed, what would be the letter on the opposite side of **K**.

Ans ✔ A. N

✗ B. L

✗ C. P

✗ D. M

Question ID : **1034358447**

Status : **Not Answered**

Chosen Option : **--**

Q.28 Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.

Statements:

All trees are rocks.

All rocks are sand.

Some sand are water.

Conclusions:

(I) All trees are sand.

(II) Some rocks are water.

Ans ✔ A. Only Conclusion (I) definitely follows.

✗ B. Only Conclusion (II) definitely follows.

✗ C. Both Conclusions (I) and (II) definitely follow.

✗ D. Both Conclusions (I) and (II) definitely donot follow.

Question ID : **1034358432**

Status : **Not Answered**

Chosen Option : **--**

Q.29 Select the correct combination of mathematical signs that can sequentially replace the * signs and balance the given equation.

16 * 10 * 5 * 8 * 10 * 30

Ans ✗ A. ×, ÷, −, +, =

✗ B. ×, ÷, =, +, −

✔ C. ×, ÷, +, −, =

✗ D. ×, ÷, +, =, −

Question ID : **1034358436**

Status : **Not Answered**

Chosen Option : **--**

Q.30 'P + M' means 'P is the daughter of M',
'P × M' means 'P is the son of M', and
'P − M' means 'P is the wife of M'.
If 'R × N − T', then which of the following statements is true?

Ans ✗ A. R is the daughter of N.

✗ B. T is the wife of N.

✓ C. T is the father of R.

✗ D. N is the father of R.

Question ID : 1034358430
Status : **Answered**

Section : **General Engineering**

Q.1 V=20sin(ωt+20)
I=10sin(ωt+50)
Calculate the phase difference between V and I.

Ans ✗ A. 50°

✗ B. 70°

✗ C. 0°

✓ D. 30°

Question ID : 1034358461
Status : **Not Answered**
Chosen Option : --

Q.2 Refrigerants such as Freon are classified as _____.

Ans ✗ A. activated hydrocarbons

✔ B. halogenated hydrocarbons

✗ C. cross linked hydrocarbons

✗ D. mutual linked hydrocarbons

Question ID : **1034358473**

Status : **Answered**

Q.3 Calculate the MMF generated in a coil if the coil carries 10 mA current. Given no of turns = 500, length of the wire = 30 mm and thickness of wire = 60 mm.

Ans ✗ A. 25 AT

✔ B. 05 AT

✗ C. 10 AT

✗ D. 20 AT

Question ID : **1034358460**

Status : **Not Answered**

Chosen Option : **--**

Q.4 HSLA steel stands for _____.

Ans ✔ A. High-Strength Low-Alloy steel

✗ B. High-Stiffness Low-Activation steel

✗ C. High-Suplex Low-Articulate steel

✗ D. High-Soundness Low-Action steel

Question ID : **1034358477**

Status : **Answered**

Q.5 According IS 800-2000 in design steel structures, what is the maximum slenderness ratio for a tension member in which a reversal of direct stress due to loads other than wind or seismic forces occur?

Ans ✗ A. 500

✗ B. 350

✗ C. 400

✓ D. 180

Question ID : **1034358456**

Status : **Answered**

Q.6 Mohs scale is used to measure which property of a stone?

Ans ✗ A. Structure

✗ B. Strength

✓ C. Hardness

✗ D. Toughness

Question ID : **1034358448**

Status : **Answered**

Q.7 Two resistances, each of 100 Ω are connected in parallel across a 100V DC source, then the current flowing through the circuit is _____.

Ans ✓ A. 2 A

✗ B. 0.2 A

✗ C. 0.5 A

✗ D. 20 A

Question ID : **1034358459**

Status : **Not Answered**

Chosen Option : **--**

Q.8 What is the difference between the market value and book value?

Ans ✅ A. Book value is the value fixed by the rate of depreciation, whereas market value is fixed by the purchaser at the time of sale.

❌ B. Book value is the value fixed by the rate of purchaser, whereas market value is fixed by depreciation.

❌ C. Book value is the value fixed by the buyer, whereas market value is fixed by the seller.

❌ D. Book value is the value fixed by the rate of appreciation, whereas market value is fixed by depreciation.

Question ID : **1034358449**

Status : **Answered**

Q.9 The Indian Road Congress (IRC) recommends what value of camber for gravel or water bound macadam road surface subject to heavy rains?

Ans ❌ A. 1%

✅ B. 3%

❌ C. 4%

❌ D. 2%

Question ID : **1034358454**

Status : **Answered**

Q.10 Calculate the overall efficiency of a hydraulic power plant if hydraulic efficiency and electrical efficiency is 0.8 and 0.7, respectively.

Ans ✅ A. 0.56

❌ B. 0.8

❌ C. 0.875

❌ D. 0.7

Question ID : **1034358465**

Status : **Not Answered**

Chosen Option : **--**

Q.11 To start delivery of the fluid, the casing and impeller should be filled with the fluid without any air pockets. This process is called _____.

Ans ✗ A. casing

✗ B. decoding

✗ C. debugging

✓ D. priming

Question ID : **1034358476**

Status : **Answered**

Q.12 Which of the following is NOT an advantage of the sprinkler irrigation method?

Ans ✗ A. Fertilisers can be uniformly applied, because they are mixed with irrigation water itself.

✓ B. It requires larger electrical power.

✗ C. This method leaches down salts and prevents water-logging or salinity.

✗ D. It is less labour oriented, and hence useful where labour is costly and scarce.

Question ID : **1034358453**

Status : **Answered**

Q.13 Find out the rotor current frequency of induction motor if supply frequency is 60Hz and slip 0.02.

Ans ✗ A. 0.9 Hz

✗ B. 1.8 Hz

✓ C. 1.2 Hz

✗ D. 60 Hz

Question ID : **1034358464**

Status : **Not Answered**

Chosen Option : **--**

Q.14 According to IS 10500-2012, the maximum permissible limit of Total Dissolved Solids (TDS) in the absence of an alternate source of drinking water is:

Ans ✗ A. 500 mg/l

✓ B. 2000 mg/l

✗ C. 1500 mg/l

✗ D. 1000 mg/l

Question ID : **1034358455**

Status : **Not Answered**

Chosen Option : **--**

Q.15 Find out the decimal equivalent of $(1011100)_2$.

Ans ✓ A. $(92)_{10}$

✗ B. $(87)_{10}$

✗ C. $(78)_{10}$

✗ D. $(83)_{10}$

Question ID : **1034358467**

Status : **Not Answered**

Chosen Option : **--**

Q.16 Soils are classified into 15 groups in which soil classification system?

Ans ✓ A. Unified Soil Classification System

✗ B. Massachusetts Institute of Technology Soil Classification System

✗ C. Indian Standard Soil Classification System

✗ D. AASHTO Soil Classification System

Question ID : **1034358451**

Status : **Answered**

Q.17 Which of the following holds true for steam in impulse turbines?

Ans ✗ A. It is expanded in fixed blades.

✗ B. It remains constant.

✓ C. It is expanded in nozzles only.

✗ D. It is expanded in moving blades.

Question ID : 1034358474

Status : **Answered**

Q.18 Overdamping will make instruments:

Ans ✗ A. robust

✗ B. accurate

✗ C. fast

✓ D. slow

Question ID : 1034358463

Status : **Answered**

Q.19 _____ is defined as the ratio of change in length to original length.

Ans ✓ A. Tensile strain

✗ B. Volumetric stress

✗ C. Compressive stress

✗ D. Tensile stress

Question ID : 1034358468

Status : **Answered**

Q.20 Which of the following is NOT a condition to be satisfied by survey lines or survey stations?

Ans ✔ A. Survey stations must be mutually invisible.

✘ B. As far as possible, the main survey lines should not pass through obstacles.

✘ C. The main lines should form well-conditioned triangles.

✘ D. The lines must run through level ground as possible.

Question ID : 1034358450

Status : **Answered**

Q.21 The efficiency of all reversible heat engines operating between the same temperature levels is _____.

Ans ✘ A. maximum

✔ B. the same

✘ C. minimum

✘ D. zero

Question ID : 1034358471

Status : **Answered**

Q.22 The first law of thermodynamics mentions the _____.

Ans ✘ A. liability of energy

✘ B. loss of energy

✘ C. generation of energy

✔ D. conservation of energy

Question ID : 1034358470

Status : **Answered**

Q.23 Which of the following is NOT a pure substance?

Ans ✗ A. Water

✗ B. Carbon dioxide

✗ C. Ammonia

✓ D. Air

Question ID : **1034358469**

Status : **Answered**

Q.24 Three capacitors each of 10 µF are connected in parallel, the total equivalent capacitance is:

Ans ✗ A. 3.33 µF

✗ B. 33.3 µF

✗ C. 10 µF

✓ D. 30 µF

Question ID : **1034358458**

Status : **Not Answered**

Chosen Option : **--**

Q.25 The value of K_a (Crest Factor) for sinusoidal AC waveform is:

Ans ✗ A. 1.732

✓ B. 1.414

✗ C. 0.707

✗ D. 1.459

Question ID : **1034358462**

Status : **Not Answered**

Chosen Option : **--**

Q.26 Ammonia has a boiling point of _____.

Ans ✗ A. −22°C

✗ B. −11°C

✗ C. −66.66°C

✓ D. −33.3°C

Question ID : 1034358475

Status : **Answered**

Q.27 A manufacturing process has a large amount of waste heat available at 200°C in a location where the local environmental temperature is 20°C. Determine the COP of a Carnot refrigerator operating between these temperatures.

Ans ✗ A. 9.54

✗ B. 3.56

✗ C. 6.54

✓ D. 1.63

Question ID : **1034358472**

Status : **Not Answered**

Chosen Option : **--**

Q.28 What is the specific gravity of one litre of liquid that weighs 7 N? Take acceleration due to gravity = 10 m/s^2 and density of water = 1000 kg/m^3.

Ans ✗ A. 0.5

✓ B. 0.7

✗ C. 0.8

✗ D. 0.6

Question ID : **1034358452**

Status : **Not Answered**

Chosen Option : **--**

Q.29 The slump test is used to measure which property of concrete?

Ans ✗ A. Strength

✗ B. Permeability

✓ C. Workability

✗ D. Durability

Question ID : 1034358457

Status : **Answered**

Q.30 The maximum working temperature of Nickel chromium is about:

Ans ✓ A. 1150°C

✗ B. 1500°C

✗ C. 1000°C

✗ D. 1400°C

Question ID : 1034358466

Status : **Answered**

Section : **Domain Knowledge**

Q.1 Calculate the COP of a refrigerator, if work input is 40 kJ/kg and output is 80 kJ/kg, producing a refrigerating effect of 120 kJ/kg .

Ans ✗ A. −1/3

✗ B. −3

✓ C. 3

✗ D. 1/3

Question ID : 1034358513

Status : **Not Answered**

Chosen Option : **--**

Q.2 Which of the following statements is/are true with respect to the force of friction between two bodies in contact?
I. It depends on area of their contact
II. It depends on relative velocity between them
III. Is always normal to surface of their contact

Ans ✔️ A. Only III is true

❌ B. Both I and III are true

❌ C. Only II is true

❌ D. Both I and II are true

Question ID : **1034358500**

Status : **Answered**

Q.3 As per the _____, if a body in equilibrium is acted upon by four forces, then the resultant of any two forces must be equal, opposite, and collinear with the resultant of the other two forces.

Ans ✔️ A. Four Force Principle

❌ B. Three Force Principle

❌ C. Two Force Principle

❌ D. Five Force Principle

Question ID : **1034358494**

Status : **Answered**

Q.4 Which of following holds true for an otto cycle?

Ans ❌ A. Otto cycle is a partly constant volume and pressure combustion cycle

❌ B. Otto cycle is a constant pressure combustion cycle

✔️ C. Otto cycle is a constant volume combustion cycle

❌ D. Otto cycle is a constant velocity combustion cycle

Question ID : **1034358517**

Status : **Answered**

Q.5 Caulking is a process used to make joints _____.

Ans ✗ A. indent proof

✗ B. colour proof

✓ C. leak proof

✗ D. corrosion proof

Question ID : 1034358488

Status : **Answered**

Q.6 Cope and drag in a moulding process are contained in a box, also known as _____.

Ans ✗ A. core

✗ B. sand dune

✗ C. pattern

✓ D. Flask

Question ID : 1034358578

Status : **Answered**

Q.7 Which of the following holds true for a parson reaction turbine?

Ans ✗ A. It is composed of only fixed nozzles.

✗ B. It is composed only of moving blades.

✗ C. It does not have any nozzles.

✓ D. It is composed of moving blades (nozzles) alternating with fixed nozzles.

Question ID : 1034358534

Status : **Answered**

Q.8 Relate the welding processes in increasing order of their power density.

Ans ❌ A. Oxyfuel welding < Electrode beam welding < Resistance welding

❌ B. Resistance welding < Electrode beam welding < Oxyfuel welding

✅ C. Oxyfuel welding < Resistance welding < Electrode beam welding

❌ D. Resistance welding < Oxyfuel welding < Electrode beam welding

Question ID : **1034358562**

Status : **Answered**

Q.9 For rough pipes having turbulent flow, friction factor is a function of the _____.

Ans ✅ A. relative surface roughness of pipe

❌ B. density of fluid

❌ C. volume of fluid

❌ D. weight of the pipe

Question ID : **1034358544**

Status : **Answered**

Q.10 A Carnot heat pump is working between 32°C and 337°C. Calculate the COP of the same.

Ans ✅ A. 2

❌ B. 2.5

❌ C. 1.5

❌ D. 3

Question ID : **1034358533**

Status : **Not Answered**

Chosen Option : **--**

Q.11 A Loeffler boiler is:

Ans ✗ A. a type of fire-tube boiler

✗ B. a type of mixed fired boiler

✔ C. a type of water-tube boiler

✗ D. not a boiler

Question ID : 1034358523

Status : **Answered**

Q.12 _____ bearing is also known as Foot step bearing

Ans ✗ A. Speed

✔ B. Flat pivot

✗ C. Power

✗ D. Peddle

Question ID : 1034358492

Status : **Answered**

Q.13 A simple conical governor is also called_____ governor.

Ans ✗ A. Inertia

✗ B. centrifugal

✔ C. watt

✗ D. centripetal

Question ID : 1034358484

Status : **Answered**

Q.14 The maximum bending moment for a beam fixed at one end and free at the other end, wherein load acts at centre will occur at _____.

Ans ✗ A. Free end

✓ B. Fixed end

✗ C. Between centre and fixed end

✗ D. Under the load

Question ID : 1034358508

Status : **Answered**

Q.15 Identify the odd one out of the following.

Ans ✓ A. Babcock and Wilcox boiler

✗ B. Locomotive boiler

✗ C. Cochran boiler

✗ D. Lancashire boiler

Question ID : 1034358529

Status : **Not Answered**

Chosen Option : **--**

Q.16 Poise is a unit of _____.

Ans ✓ A. viscosity

✗ B. surface tension

✗ C. velocity

✗ D. weight

Question ID : 1034358535

Status : **Answered**

Q.17 _____ is NOT a component of extrusion process.

Ans ✗ A. Die

✗ B. Hopper

✗ C. Ram

✓ D. Flux coated electrode

Question ID : **1034358584**

Status : **Answered**

Q.18 If the sleeve of a watt governor is loaded with heavy mass, it becomes a _____ governor.

Ans ✗ A. Dortsmouth

✓ B. Porter

✗ C. Proteas

✗ D. Hartnell

Question ID : **1034358485**

Status : **Answered**

Q.19 Identify the incorrect statement related to tungsten inert gas welding process out of the given options.

Ans ✓ A. Flux is used in this process

✗ B. Argon gas is used in the process

✗ C. Arc is comparatively silent and has less spatter.

✗ D. It employs a non-consumable electrode

Question ID : **1034358567**

Status : **Answered**

Q.20 In a centrifugal pump, the doughnut-shaped diffuser section called _____ of the casing decelerates the flow and further increases the pressure.
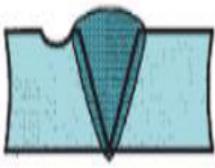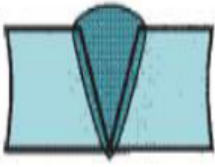
Ans ✗ A. casing

✗ B. eye

✔ C. scroll

✗ D. impeller

Question ID : **1034358554**

Status : **Answered**

Q.21 Which of the following figures shows an underfill welding defect?

Ans

✗ A.

✗ B.

✔ C.

✗ D.

Question ID : **1034358573**

Status : **Answered**

Q.22 Flywheels are termed as a _____ of energy.

Ans ✗ A. demolisher

✔ B. reservoir

✗ C. generator

✗ D. consumer

Question ID : **1034358479**

Status : **Answered**

Q.23 _____ is a unique phase of Iron-carbon system having harness generally induced by quenching.

Ans ✔ A. Martensite

✗ B. Ferrite

✗ C. Austenite

✗ D. Pearlite

Question ID : **1034358560**

Status : **Answered**

Q.24 _____ defect is caused due to casting getting solidified before the entire mould cavity is filled.

Ans ✗ A. Hot tears

✗ B. Cold shots

✔ C. Misruns

✗ D. Porosity

Question ID : **1034358579**

Status : **Answered**

Q.25 Identify the correct statement related to gas metal arc welding process.
i. Slag is formed in the process
ii. Consumable electrode is in form of wire
iii. Acetylene is used in the process for welding.

Ans ✗ A. Only i and iii is correct

✗ B. Only ii is correct

✗ C. Only i is correct

✔ D. Both i and ii are correct

Question ID : **1034358570**
Status : **Answered**

Q.26 The efficiency of an actual Brayton cycle is NOT improved by _____.

Ans ✗ A. providing reheating

✗ B. providing intercooling arrangement

✔ C. providing regeneration

✗ D. increasing pressure ratio.

Question ID : **1034358531**
Status : **Not Answered**
Chosen Option : **--**

Q.27 Identify the correct statement(s) pertaining to gas welding from among the given options.
I. Gas welding torch tip has separate holes for oxygen and acetylene
II. Gas welding employs nitrogen gas.
III. Gas welding is also known as oxy-acetylene welding process.

Ans ✔ A. Statement III is true

✗ B. Statements I and III are true

✗ C. Statement II is true

✗ D. Statement I is true

Question ID : **1034358564**
Status : **Answered**
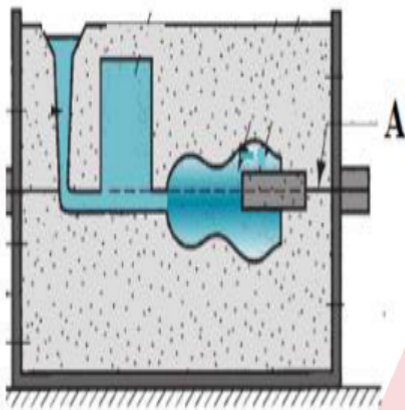
Q.28 Kinematic viscosity also known as stoke is equal to:

Ans   ✗ A. 10^{-2} m/s

     ✗ B. 10^{-3} m/s

     ✓ C. 10^{-4} m/s

     ✗ D. 10^{-1} m/s

Question ID : **1034358536**

Status : **Not Answered**

Chosen Option : **--**

Q.29 Identify the feature 'A' in the casting figure given.

Ans   ✗ A. Chaplet

     ✓ B. Parting line

     ✗ C. Cope

     ✗ D. Drag

Question ID : **1034358577**

Status : **Answered**

Q.30 Identify the correct option with respect to the second law of thermodynamics.
  I) It gives the concept of temperature
  II) It gives the concept of internal energy
  III) it gives the concept of entropy

Ans ✗ A. I and II are correct

  ✔ B. Only III is correct

  ✗ C. I and III are correct

  ✗ D. Only II is correct

Question ID : **1034358514**
Status : **Answered**

Q.31 Identify the odd option among the following with respect to the property they measure.

Ans ✗ A. Orifice meter

  ✗ B. Venturimeter

  ✗ C. Rotameter

  ✔ D. Pitot tube

Question ID : **1034358548**
Status : **Answered**

Q.32 The dimensionless parameter describing flow-induced boiling is known as _____.

Ans ✗ A. Curing number

  ✔ B. Cavitation number

  ✗ C. Reynolds number

  ✗ D. boiling number

Question ID : **1034358555**
Status : **Answered**

Q.33 For orifice meters with sharp edges, the coefficient of velocity is _____

Ans ✔ A. 0.98

✖ B. 0.1

✖ C. 0.4

✖ D. 1.9

Question ID : **1034358549**

Status : **Answered**

Q.34 The best example of a/an _____ is seen in the tailor's manual sewing machine.

Ans ✖ A. engine

✖ B. clutch

✖ C. piston

✔ D. flywheel

Question ID : **1034358480**

Status : **Answered**

Q.35 For an extrusion process, in _____ section, melt is homogenised, and sufficient pressure is developed to pump it through the die opening.

Ans ✖ A. compression

✔ B. metering

✖ C. expansion

✖ D. feed

Question ID : **1034358585**

Status : **Answered**

Q.36 Identify the odd process out of following.

Ans ✔ A. Tungsten inert gas welding

✘ B. Metal inert gas welding

✘ C. Metal active gas welding

✘ D. Gas metal arc welding

Question ID : 1034358569

Status : **Answered**

Q.37 Bending moment at the supports for a simply supported beam would be _____.

Ans ✘ A. >1

✘ B. −1

✘ C. 1

✔ D. 0

Question ID : 1034358506

Status : **Answered**

Q.38 For an anisotropic medium, number of elastic constant are _____.

Ans ✘ A. 31

✔ B. 21

✘ C. 11

✘ D. 41

Question ID : 1034358505

Status : **Not Answered**

Chosen Option : --

Q.39 In a manometer, the tube should contain a liquid whose specific gravity is _____ the specific gravity of the liquid whose pressure is to be measured.

Ans ✔ A. greater than

✗ B. half of

✗ C. similar to

✗ D. smaller than

Question ID : 1034358540

Status : **Answered**

Q.40 _____ material is widely used as an electrode material.

Ans ✗ A. Ceramic

✔ B. Copper

✗ C. Wood

✗ D. Stainless steel

Question ID : 1034358565

Status : **Answered**

Q.41 In a diamond riveted joint, the number of rivets:

Ans ✗ A. remains same from the innermost row to the outermost row

✗ B. in the innermost row to outermost row are not related

✔ C. decreases from the innermost row to the outermost row

✗ D. increases from the innermost row to the outermost row

Question ID : 1034358487

Status : **Answered**

Q.42 For venturimeters, the coefficient of discharge range is _____ .

Ans ✗ A. 0.93 - 0.94

✗ B. 0.90 - 0.93

✓ C. 0.95 - 0.98

✗ D. 0.85 - 090

Question ID : **1034358547**

Status : **Not Answered**

Chosen Option : **--**

Q.43 Collar bearings are also known as _____ bearings.

Ans ✗ A. thrive

✗ B. speed

✗ C. power

✓ D. thrust

Question ID : **1034358491**

Status : **Answered**

Q.44 Which of the following is/are correct with respect to entropy?
I) It is a measure of net work done by system
II) It is a measure of randomness in the system
III) It is a measure of heat transfer potential of the system .

Ans ✗ A. III is correct

✗ B. I is correct

✓ C. II is correct

✗ D. I and II are correct

Question ID : **1034358515**

Status : **Answered**

Q.45 _____ line on the Mollier chart represents _____ process.

Ans ✗ A. Vertical, Isenthalpic

✓ B. Vertical, isentropic

✗ C. horizontal, adiabatic

✗ D. Horizontal, Isentropic

Question ID : 1034358510

Status : **Answered**

Q.46 A smaller version of the Lancashire boiler is _____.

Ans ✗ A. Package boiler

✗ B. Stirling boiler

✗ C. Babcock and Wilcox boiler

✓ D. Cornish boiler

Question ID : 1034358528

Status : **Answered**

Q.47 _____ casting is a type of permanent casting process.

Ans ✓ A. Slush

✗ B. Investment

✗ C. Vacuum

✗ D. Shell

Question ID : 1034358581

Status : **Answered**

Q.48 In the case of tool wear, diffusion occurs at the _____ causing the tool surface to become depleted of the atoms responsible for its hardness.

Ans ✗ A. workpiece – chip boundary

✓ B. tool - chip boundary

✗ C. tool - workpiece boundary

✗ D. triple zone

Question ID : 1034358587

Status : **Not Answered**

Chosen Option : **--**

Q.49 The total of all sub-atomic as well as microscopic molecular energies is given by _____.

Ans ✓ A. internal energy

✗ B. enthalpy

✗ C. entropy

✗ D. exergy

Question ID : 1034358511

Status : **Answered**

Q.50 Which of following is true with respect to PMM2?

Ans ✓ A. It violates the Kelvin-Planck statement.

✗ B. It violates joules effect.

✗ C. It violates the concept of temperature.

✗ D. It violates the statement that the total energy of the universe is constant.

Question ID : 1034358516

Status : **Answered**

Q.51 Which of the following is NOT a type of flame in Gas welding?

Ans ✗ A. Oxidising

✓ B. Nitriding

✗ C. Neutral

✗ D. Carburising

Question ID : **1034358563**

Status : **Answered**

Q.52 Identify the correct statement(s) out of the given options with respect to inclined U-Tube manometer.
i. More accurate than U-tube manometer
ii. Measures volume directly
iii. Measures velocity also

Ans ✗ A. Only ii is correct

✓ B. Only i is correct

✗ C. Only iii is correct

✗ D. Both ii and iii are correct

Question ID : **1034358542**

Status : **Not Answered**

Chosen Option : --

Q.53 Which of the following is NOT a feature of weld bead deposited by arc welding?

Ans ✗ A. Fuzion zone

✓ B. Thermo-mechanically affected zone

✗ C. Partially melted zone

✗ D. Heat affected zone

Question ID : **1034358561**

Status : **Answered**

Q.54 The hemispherical configuration of the crown of a fire box _____.

Ans ✗ A. gives maximum strength

✔ B. prevents heat loss

✗ C. provides maximum space

✗ D. is easy to fabricate

Question ID : **1034358527**

Status : **Answered**

Q.55 According to Lami's theorem, if three coplanar forces are acting at a point b in equilibrium, then each force is proportional to the _____ of the angle between the other two.

Ans ✔ A. sine

✗ B. tangent

✗ C. sec

✗ D. cosine

Question ID : **1034358493**

Status : **Not Answered**

Chosen Option : **--**

Q.56 Steels having carbon level between 0.77 % to 2.1 % is called _____.

Ans ✗ A. hypo-eutectoid steel

✗ B. peritectoid steel

✗ C. cementoid steel

✔ D. hyper-eutectoid steel

Question ID : **1034358559**

Status : **Answered**

Q.57 Baffles in water tubes in a Babcock and Wilcox boiler is provided _____.

Ans ✗ A. for regulation of water flow

✗ B. for preventing cavitation

✗ C. for regulation of steam flow

✓ D. for providing better contact between flue gases and water tube

Question ID : **1034358526**

Status : **Not Answered**

Chosen Option : **--**

Q.58 Which of the following statements is/are true for rivets?
I. Rivets can be removed without breaking their heads.
II. Rivets are used for achieving mechanically fastened joints.
III. Rivets are primarily used for lap joints.

Ans ✗ A. I and II

✗ B. I and III

✓ C. II and III

✗ D. Only I

Question ID : **1034358486**

Status : **Answered**

Q.59 A closed system that obeys the first law equation dQ = du + pdV, where u = internal energy, Q = heat, p = pressure and V = volume is _____.

Ans ✗ A. undergoing an isentropic process

✗ B. undergoing an irreversible process

✗ C. undergoing an infinitesimal small change

✓ D. a simple compression system undergoing reversible process

Question ID : **1034358512**

Status : **Not Answered**

Chosen Option : **--**

Q.60 Which of the following hold(s) true with respect to the flow in volute casing outside the rotating impeller of a centrifugal pump?
i. Flow is Free vortex
ii. Flow is Forced vortex
iii. Flow is radial

Ans ✗ A. Both ii and iii

✗ B. Only ii

✗ C. Both i and ii

✓ D. Only i

Question ID : **1034358551**

Status : **Not Answered**

Chosen Option : **--**

Q.61 Identify the odd option from among the following.

Ans ✗ A. U-Tube manometer

✓ B. Zig-zag tube manometer

✗ C. Vertical single column manometer

✗ D. Inclined U-Tube manometer

Question ID : **1034358541**

Status : **Answered**

Q.62 Air vessel in a reciprocating pump is _____

Ans ✓ A. Fitted in delivery line

✗ B. Fitted before the pump

✗ C. Fitted outside the system

✗ D. Not fitted

Question ID : **1034358530**

Status : **Answered**

Q.63 NPSH for a centrifugal pump stands for _____.

Ans ✗ A. near positive section head

✗ B. net positive section head

✗ C. near positive suction head

✓ D. net positive suction head

Question ID : **1034358553**

Status : **Answered**

Q.64 For uniform flow around circular cylinders, the stagnation points are located at:

Ans ✓ A. 0° and 180°

✗ B. 90° and 270°

✗ C. 0° and 90°

✗ D. 90° and 180°

Question ID : **1034358552**

Status : **Not Answered**

Chosen Option : **--**

Q.65 Which of the following gases CANNOT be used as a shielding gas in tungsten inert gas welding process?

Ans ✗ A. Helium

✗ B. Nitrogen

✓ C. Oxygen

✗ D. Argon

Question ID : **1034358568**

Status : **Answered**

Q.66 Identify the odd option from among the following.

Ans ✗ A. Modulus of rigidity

✗ B. Bulk modulus

✗ C. Modulus of elasticity

✓ D. Modulus of viscosity

Question ID : **1034358503**

Status : **Answered**

Q.67 Low pressure casting is a type of _____.

Ans ✗ A. semi-permanent casting process

✗ B. temporarymould casting process

✗ C. expendable mould casting process

✓ D. permanent mould casting process

Question ID : **1034358582**

Status : **Answered**

Q.68 In a manometer, the two ends of a tube are connected to points where _____.

Ans ✓ A. pressure difference is to be measured

✗ B. velocity difference is to be measured

✗ C. density is to be measured

✗ D. power difference is to be measured
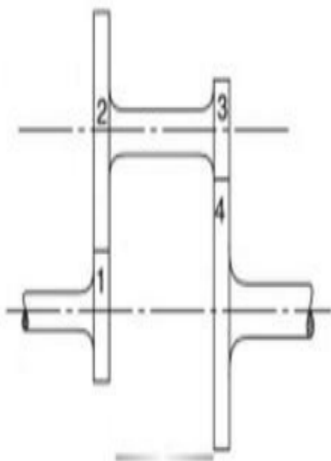
Question ID : **1034358539**

Status : **Answered**

Q.69 Which of the following is NOT a limitation of brazing?

Ans

✗ A. Joint strength is less than welded joint

✗ B. Colour of brazed joint may not match base metal colour

✗ C. High service temperatures may weaken brazed joint.

✔ D. Brazing cannot join thin walled parts

Question ID : **1034358572**

Status : **Answered**

Q.70 Identify the gear train shown in the given figure.

Ans

✗ A. Planetary gear

✗ B. Spur gear

✔ C. Reverted gear train

✗ D. Compound gear

Question ID : **1034358482**

Status : **Answered**

Q.71 Identify the correct statement pertaining to water tube boilers as compared to fire tube boilers.
i. They required more floor area for given output.
ii. They can operate safely at higher temperatures.
iii. Overall efficiency is less.

Ans ✗ A. Only iii is correct

✓ B. Only ii is correct

✗ C. Both i and ii are correct

✗ D. Both i and iii are correct

Question ID : **1034358522**
Status : **Not Answered**
Chosen Option : **--**

Q.72 Which of the following is NOT a basis for classification of cams?

Ans ✗ A. Manner constraint of the follower

✗ B. Follower movement in cam

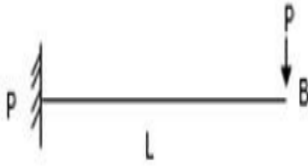✓ C. Weight of cam

✗ D. Shape of cam

Question ID : **1034358489**
Status : **Answered**

Q.73 Strain energy stored in cantilever beam loaded as shown will be _____.

Ans

✗ A. $\dfrac{P^2L^3}{3EI}$

✔ B. $\dfrac{P^2L^3}{6EI}$

✗ C. $\dfrac{P^2L^3}{2EI}$

✗ D. $\dfrac{P^2L^3}{4EI}$

Question ID : **1034358507**

Status : **Not Answered**

Chosen Option : **--**

Q.74 For a Non - Newtonian fluid, apparent viscosity depends on _____.

Ans ✗ A. stress intensity

✗ B. proof stress

✗ C. velocity

✔ D. shear rate

Question ID : **1034358538**

Status : **Not Answered**

Chosen Option : **--**

Q.75 A pitot static tube is used to measure the velocity of air flowing through a duct. The manometer shows a difference in head of 5 cm of water. If the density of air and water are 1.13 kg/m^3 and 1000 kg/m^3, respectively, determine the velocity of air. Assume the coefficient of the pitot tube as 0.98.

Ans   ✘ A. 0.2886 m/s

   ✘ B. 2.886 m/s

   ✔ C. 28.86 m/s

   ✘ D. 288.6 m/s

Question ID : **1034358586**

Status : **Not Answered**

Chosen Option : **--**

Q.76 Identify the odd option among the following.

Ans   ✔ A. Spiral cams

   ✘ B. Cylindrical cams

   ✘ C. Barrel cams

   ✘ D. Drum cams

Question ID : **1034358490**

Status : **Answered**

Q.77 Viscosity of a lubrication oil for an IC engine is measured by _____.

Ans   ✘ A. thermometer

   ✘ B. manometer

   ✔ C. viscometer

   ✘ D. barometer

Question ID : **1034358521**

Status : **Answered**

Q.78 Which law enables us to measure a force, and establishes the fundamental equation of dynamics?

Ans ✗ A. Newton's first law of motion

✓ B. Newton's second law of motion

✗ C. Newton's fourth law of motion

✗ D. Newton's third law of motion

Question ID : **1034358497**

Status : **Answered**

Q.79 During combustion in CI Engines the period of uncontrolled combustion has _____.

Ans ✓ A. rapid pressure rise

✗ B. rapid weight rise

✗ C. rapid weight reduction

✗ D. rapid pressure reduction

Question ID : **1034358520**

Status : **Answered**

Q.80 Which of the following is NOT a basis of classification of boilers?

Ans ✗ A. Construction of boilers

✗ B. Position of furnace

✓ C. Weight of boilers

✗ D. Position of water

Question ID : **1034358525**

Status : **Answered**

Q.81 Loss in pump head mismatch between the blade angles and the inlet flow direction, especially significant at high flow rates is known as _____.

Ans ✔️ A. shock loss

❌ B. friction loss

❌ C. impeller recirculation

❌ D. heat loss

Question ID : 1034358557

Status : **Answered**

Q.82 For a streamline flow of an ideal liquid in varying cross section tube, total energy per unit volume _____ throughout the fluid.
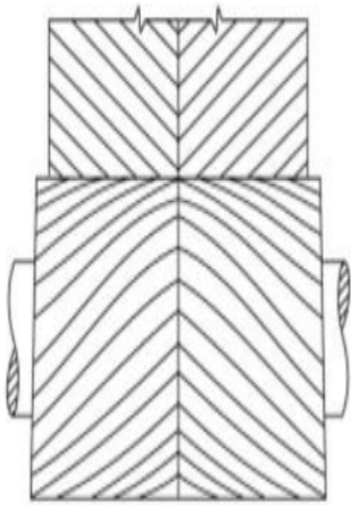
Ans ❌ A. decreases

❌ B. becomes zero

✔️ C. remains constant

❌ D. increases

Question ID : 1034358545

Status : **Answered**

Q.83 Identify the gear in the given figure.

Ans ✗ A. Spiral gear

✔ B. Herringbone gear

✗ C. Bevel gear

✗ D. Zero bevel gear

Question ID : **1034358483**

Status : **Answered**

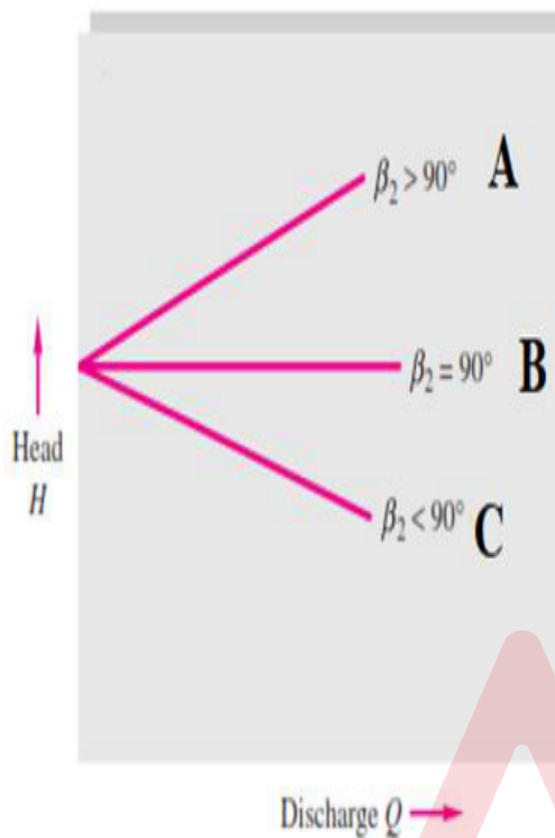**Q.84** Which of the following statements is/are true with respect to friction?
I. Application of grease reduces friction
II. Rolling friction produces least friction
III. Static friction is less than rolling friction

Ans ✗ A. Only I is true

✔ B. Both I and II are true

✗ C. Both II and III are true

✗ D. Both I and III are true

Question ID : **1034358501**

Status : **Answered**

Q.85 Given the theoretical effect of the blade exit angle (β) on the pump head versus discharge, identify the correct option.

Ans ✔ A. A – Forward curved blades, B- Radial blades and C – Backward curved blades

✗ B. A – Forward curved blades, B- Backward curved blades and C – Radial blades

✗ C. A – Backward curved blades, B- Radial blades and C – Forward curved blades

✗ D. A – Radial blades, B- Forward curved blades and C – Backward curved blades

Question ID : **1034358556**

Status : **Not Answered**

Chosen Option : **--**

Q.86 A resistance spot-welding operation is performed on two pieces of 1.5-mm-thick sheet steel using 12,000 A for a 0.20 s duration.
The electrodes are 6 mm in diameter at the contacting surfaces. Resistance is assumed to be 0.0001 ohm. Calculate the heat generated in the process.

Ans ✗ A. 28 Joules

✔ B. 2880 Joules

✗ C. 28800 Joules

✗ D. 288 Joules

Question ID : **1034358566**

Status : **Not Answered**

Chosen Option : **--**

Q.87 Detonation in IC Engines _____.

Ans ✔ A. occurs near beginning of combustion

✗ B. do not occur

✗ C. occurs near end of combustion

✗ D. occurs at mid of combustion

Question ID : **1034358519**

Status : **Not Answered**

Chosen Option : **--**

Q.88 There is no geometrical distinction between streamline, pathline and streakline in case of:

Ans ✔ A. Steady flow

✗ B. Laminar flow

✗ C. Uniform flow

✗ D. Irrotational flow

Question ID : **1034358543**

Status : **Answered**

Q.89 For a reversible isothermal process undergone by ideal gas heat transfer _____ work transfer.

Ans   A. cannot be related to ✗

       B. is equal to ✓

       C. is more than ✗

       D. is less than ✗

Question ID : **1034358532**

Status : **Answered**

Q.90 The reciprocal of coefficient of fluctuation of speed is known as _____

Ans   A. coefficient of vibration ✗

       B. coefficient of readiness ✗

       C. coefficient of steadiness ✓

       D. coefficient of energy ✗

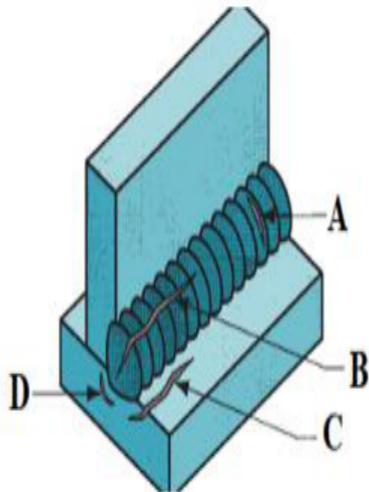Question ID : **1034358481**

Status : **Answered**

Q.91 _____ in stainless steel imparts corrosion resistance.

Ans   A. Cobalt ✗

       B. Iron ✗

       C. Chromium ✓

       D. Tantalum ✗

Question ID : **1034358558**

Status : **Answered**

Q.92 Which of the following is an underbead cracking in the welded joint shown in the given figure?

Ans ✗ A. B

✔ B. D

✗ C. A

✗ D. C

Question ID : **1034358574**

Status : **Answered**

Q.93 _____ is NOT a non-destructive testing method.

Ans ✗ A. Liquid penetrant testing
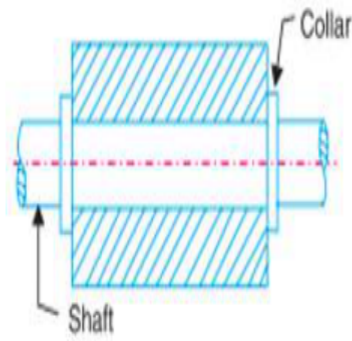
✔ B. Hardness testing

✗ C. Leak testing

✗ D. Visual testing

Question ID : **1034358575**

Status : **Not Answered**

Chosen Option : **--**

Q.94 Identify the type of motion in the given figure.

Ans ✗ A. Incompletely constrained motion

✗ B. Successfully constrained motion

✗ C. Proportionate constrained motion

✓ D. Completely constrained motion

Question ID : **1034358478**

Status : **Answered**

Q.95 Identify the odd option from among the following with respect to firing (internal/external).

Ans ✓ A. Stirling boiler

✗ B. Lancashire

✗ C. Locomotive boiler

✗ D. Cochran

Question ID : **1034358524**

Status : **Answered**

Q.96 Which of the following is not a type of cylinder arrangement in IC Engines.

Ans ✗ A. X-engines

✗ B. V - engines

✗ C. Radial engines

✓ D. Zig zag engines

Question ID : 1034358518

Status : **Answered**

Q.97 A Newtonian fluid is filled in the clearance between a shaft and a concentric sleeve. The sleeve attains a speed of 80 cm/s, when a force of 40 N is applied to the sleeve parallel to the shaft. Determine the speed if a force of 300N is applied.

Ans ✓ A. 600 cm/s

✗ B. 200 cm/s

✗ C. 250 cm/s

✗ D. 300 cm/s

Question ID : 1034358537

Status : **Not Answered**

Chosen Option : --

Q.98 The process in which the part is created through solidification of the metal is called _____.

Ans ✗ A. bolting

✗ B. machining

✓ C. casting

✗ D. riveting

Question ID : 1034358576

Status : **Answered**

Q.99 Which of the following is NOT usually used as a flux for soldering?

Ans   ✗ A. Zinc chloride

     ✓ B. Lead

     ✗ C. Ammonium chloride

     ✗ D. Borax

Question ID : **1034358571**

Status : **Answered**

Q.100 Which of the following statements is/are true regarding the law of static friction?
     I) The force of friction is dependent on the area of contact between the two surfaces.
     II) The force of friction depends on the roughness of the surfaces.
     III) The ratio of limiting friction to normal reaction is constant.

Ans   ✗ A. I and II

     ✗ B. I and III

     ✗ C. Only I

     ✓ D. II and III

Question ID : **1034358504**

Status : **Answered**

Q.101 Orifice meters have _____ head loss as compared to venturimeters.

Ans   ✓ A. higher

     ✗ B. lesser

     ✗ C. half

     ✗ D. similar

Question ID : **1034358550**

Status : **Answered**

Q.102 Maximum pressure recovery is offered by _____ amongst below constant area variable head flow meters.

Ans ✗ A. orifice plate

✗ B. pitot tube

✔ C. venturimeter

✗ D. flow nozzle
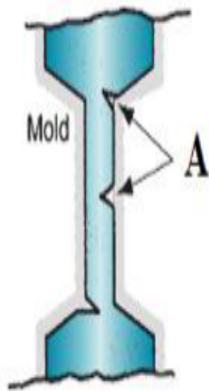
Question ID : 1034358546

Status : **Answered**

Q.103 If a column is fixed at one end and free at the other end, the effective length is _____ the original length.

Ans ✗ A. thrice

✗ B. four times

✗ C. half

✔ D. twice

Question ID : 1034358509

Status : **Answered**

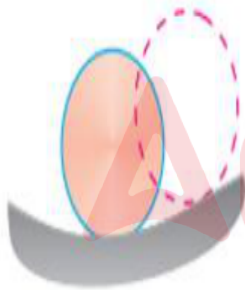**Q.104 Identify the defect 'A' from the casting product shown in given figure.**

Mold

A

Ans

✗ A. Misrun

✗ B. Cold shut

✔ C. Hot tears

✗ D. Shrinkage cavity

Question ID : **1034358580**

Status : **Answered**

Q.105 Which equilibrium is indicated by the given figure?

Ans

✗ A. Wavy equilibrium

✗ B. Neutral equilibrium

✗ C. Unstable equilibrium

✔ D. Stable equilibrium

Question ID : **1034358495**

Status : **Answered**

Q.106 Which of the following is NOT a law of static friction?

Ans ✅ A. Limiting friction × Normal reaction = Constant

❌ B. The force of friction is independent of the area of contact between the two surfaces.

❌ C. The magnitude of force of friction is exactly equal to the force, which tends to move the body.

❌ D. The force of friction depends upon the roughness of the surfaces.

Question ID : **1034358499**

Status : **Answered**

Q.107 Lateral strain/longitudinal strain is equal to _____.

Ans ✅ A. Poisson's ratio

❌ B. Hooke's law

❌ C. Jump's law

❌ D. Newton's law

Question ID : **1034358502**

Status : **Answered**

Q.108 A body at rest remains at rest till we apply external force to move it. This property is called _____.

Ans ❌ A. friction of rest

❌ B. flowability at rest

✅ C. inertia of rest

❌ D. viscosity at rest

Question ID : **1034358496**

Status : **Not Answered**

Chosen Option : **--**

Q.109 _____ is defined as the force, that while acting upon a mass of 1 kg, produces an acceleration of $1m/s^2$ in the direction in which it acts.

Ans ✗ A. Density

✗ B. Poise

✗ C. Ohm

✔ D. Newton

Question ID : **1034358498**

Status : **Answered**

Q.110 The L/D ratio for the barrel of an extrusion machine ranges from:

Ans ✔ A. 10 – 30

✗ B. 70 – 90

✗ C. 1 – 9

✗ D. 40 – 60

Question ID : **1034358583**

Status : **Not Answered**

Chosen Option : **--**