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BTSC Trade Instructor

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Bihar Technical Service Commission

बिहार तकनीकी सेवा आयोग

Roll No	
Applicant Name	
Test Center Name	
Test Date	01/01/2024
Test Time	8:30 AM - 10:30 AM
Post Name	Trade Instructor (Group 1)

Section : Domain Knowledge

Q.1 Which component of a robotic system is primarily responsible for interpreting and executing commands to drive the robot's movements?

- Ans
- ☒

1. End effector
- ☐
2. Power supply

☐☒

Question Type : MCQ

Question ID : 630680528840

Chosen Option : 1

Q.2 In the context of production scheduling, what does the term "bottleneck" refer to?

- Ans
- ☒
1. A system constraint that limits production output

☐☐☐

Question Type : MCQ

Question ID : 630680528858

Chosen Option : 1

Q.3 Which of the following components in the fuel feed system is primarily responsible for maintaining a constant supply of fuel to the engine under varying operating conditions?

- Ans
- ☒
1. Fuel Pump

☐☐☐

Question Type : MCQ

Question ID : 630680528879

Chosen Option : 1

Q.4 Fourier's law for one-dimensional steady-state conduction can be represented by which of the following equations?

- Ans
1.

$-k \frac{d^2 T}{dx^2}$

2.

$k \frac{d^2 T}{dx^2}$

3.

$-k \frac{dT}{dx}$

4.

$k \frac{dT}{dx}$

Question Type : MCQ

Question ID : 630680528831

Chosen Option : 3

Q.5 Which of the following is NOT typically considered a primary piece of CAD hardware?

- Ans
1.

Sound card

2.

RAM

3.

Graphics workstation

4.

Digitizing tablet

Question Type : MCQ

Question ID : 630680528809

Chosen Option : 1

Q.6 In the context of refrigeration systems, which type of lubricant has good miscibility with hydrofluorocarbon (HFC) refrigerants?

- Ans
1.

Polyolester (POE) oils

2.

Alkylbenzene (AB) oils

3.

Silicone oils

4.

Mineral oils

Question Type : MCQ

Question ID : 630680528862

Chosen Option : 2

Q.7 Which of the following types of brake uses a fluid to transfer pressure from the control mechanism to the braking mechanism?

- Ans
1.

Block Brake

2.

Hydraulic Brake

3.

Disc Brake

4.

Drum Brake

Question Type : MCQ

Question ID : 630680528868

Chosen Option : 2

Q.8 Identify the correct statement for SI engines when compared with CI?

- Ans
- ☒ 1. Fuel supply by injection
 - ☒ 2. Air fuel ratio is 18:1 to 100:1
 - ☒ 3. Starting is easy
 - ☒ 4. Fuel used is diesel

Question Type : MCQ
Question ID : 630680528806
Chosen Option : 1

Q.9 कंडलाकार फिस (Annular fins) आमतौर पर निम्नलिखित में से किस अनुप्रयोग में उपयोग किए जाते हैं?

- Ans
- ☒ 1. विमान के पंख
 - ☒ 2. ट्यूबों में गर्मी हस्तांतरण को बढ़ाने में
 - ☒ 3. मछली प्रणोदन
 - ☒ 4. मोटरबाइक इंजनों को ठंडा करना

Question Type : MCQ
Question ID : 630680528834
Chosen Option : 4

Q.10 In the context of automated systems, what does PLC stand for?

- Ans
- ☒ 1. Personal Learning Computer
 - ☒ 2. Portable Logic Computer
 - ☒ 3. Program Logic Control
 - ☒ 4. Programmable Logic Controller

Question Type : MCQ
Question ID : 630680528839
Chosen Option : 4

Q.11 Which type of load acts perpendicular to the surface and is distributed over a small area?

- Ans
- ☒ 1. Distributed Load
 - ☒ 2. Uniformly Varying Load
 - ☒ 3. Point Load
 - ☒ 4. Uniformly Distributed Load

Question Type : MCQ
Question ID : 630680528866
Chosen Option : 4

Q.12 फ़ैक्टरी अधिनियम, 1948 की कौन सी धारा छोटे बच्चों के रोजगार पर रोक लगाने पर जोर देती है?

- Ans
- ☒

1. धारा 67
- ☐

2. धारा 73
- ☐

3. धारा 24
- ☐

4. धारा 85

Question Type : MCQ

Question ID : 630680528837

Chosen Option : 3

Q.13 One of the main challenges of gas turbines compared to other power generation methods is

- Ans
- ☐

1. quieter operation.
- ☒

2. lower efficiency at partial loads.
- ☐

3. lower capital cost.
- ☐

4. better part-load efficiency.

Question Type : MCQ

Question ID : 630680528873

Chosen Option : 2

Q.14 Which type of transducer converts mechanical strain into an electrical signal?

- Ans
- ☐

1. Manometer
- ☐

2. Thermocouple
- ☐

3. Photodiode
- ☒

4. Piezoelectric crystal

Question Type : MCQ

Question ID : 630680528853

Chosen Option : 4

Q.15 Which gear generation method involves the use of a disc-type cutter to produce tooth spaces?

- Ans
- ☐

1. Gear Shaping
- ☐

2. Gear Hobbing
- ☐

3. Gear Grinding
- ☒

4. Gear Milling

Question Type : MCQ

Question ID : 630680528845

Chosen Option : 2

Q.16 In which of the following situations is a discontinuous chip formation most likely to occur?

- Ans
- ☐ 1. When cutting at high speeds
 - ☐ 2. When using a large rake angle
 - ☐ 3. When using a high feed rate with a sharp tool
 - ☒ 4. When cutting brittle materials

Question Type : MCQ
Question ID : 630680528877
Chosen Option : 4

Q.17 For a shaft subjected to fluctuating torsional loads, which factor becomes critical in the design of keys?

- Ans
- ☐ 1. Crushing strength
 - ☐ 2. Torsional strength
 - ☐ 3. Bending strength
 - ☒ 4. Shear strength

Question Type : MCQ
Question ID : 630680528821
Chosen Option : 4

Q.18 Which of the following is NOT a primary goal of material management?

- Ans
- ☒ 1. Maximize sales revenue
 - ☐ 2. Maximize inventory turnover rate
 - ☐ 3. Minimize production costs
 - ☐ 4. Ensure material quality

Question Type : MCQ
Question ID : 630680528835
Chosen Option : 3

Q.19 Which type of robotic joint allows movement in a single plane around a single axis, similar to a door hinge?

- Ans
- ☐ 1. Helical joint
 - ☐ 2. Ball and socket joint
 - ☐ 3. Prismatic joint
 - ☒ 4. Revolute joint

Question Type : MCQ
Question ID : 630680528841
Chosen Option : 4

Q.20 Which of the following is a fundamental quantity in mechanics?

- Ans
- ☐ 1. Force
 - ☐ 2. Work
 - ☐ 3. Momentum
 - ☒ 4. Mass

Question Type : MCQ
Question ID : 630680528823
Chosen Option : 4

Q.21 Which is the characteristic of the LVDT displacement sensor?

- Ans
- ☐ 1. High power consumption
 - ☒ 2. Low hysteresis
 - ☐ 3. Poo durability
 - ☐ 4. Finite resolution

Question Type : MCQ
Question ID : 630680528851
Chosen Option : 4

Q.22 What is the primary function of a helical compression spring?

- Ans
- ☐ 1. To maintain contact between two surfaces
 - ☐ 2. To resist axial tensile loads
 - ☐ 3. To resist twisting or rotational loads
 - ☒ 4. To resist axial compressive loads

Question Type : MCQ
Question ID : 630680528822
Chosen Option : 3

Q.23 The elongation δ in a bar of length L , cross-sectional area A , subjected to load P , and having modulus of elasticity E is given by:

- Ans
- ☐ 1. $\delta = \frac{PEL}{A}$
 - ☐ 2. $\delta = \frac{PE}{LA}$
 - ☒ 3. $\delta = \frac{PL}{AE}$
 - ☐ 4. $\delta = \frac{PA}{LE}$

Question Type : MCQ
Question ID : 630680528864
Chosen Option : 3

Q.24 Which type of electrode is commonly used in Shielded Metal Arc Welding (SMAW)?

- Ans
1. Laser electrode

2. Tungsten electrode

3. Metal inert gas electrode

4. Consumable electrode

Question Type : MCQ

Question ID : 630680528844

Chosen Option : 4

Q.25 Which type of die is the most complicated and costly stamping die?

- Ans
1. Compound Die

2. Transfer Die

3. Combination Die

4. Progressive Die

Question Type : MCQ

Question ID : 630680528878

Chosen Option : 1

Q.26 Which die operation is primarily used to increase the length and reduce the cross-section of a metal piece?

- Ans
1. Blanking

2. Piercing

3. Extrusion

4. Embossing

Question Type : MCQ

Question ID : 630680528875

Chosen Option : 3

Q.27 Which of the following tools is commonly used in CAD to create smooth transitions between two or more curves or lines?

- Ans
1. Dimension Tool

2. Polygon Tool

3. Fillet Command

4. Hatch Pattern

Question Type : MCQ

Question ID : 630680528812

Chosen Option : 3

Q.28 Which among the following metal is the most ductile?

- Ans
- ☒ 1. Zinc
 - ☒ 2. Aluminium
 - ☒ 3. Copper
 - ☒ 4. Nickel

Question Type : MCQ
Question ID : 630680528805
Chosen Option : 3

Q.29 In which FMS computer control system, the part mix and rate at which the various parts are launched into the system must be managed?

- Ans
- ☒ 1. Work-piece control
 - ☒ 2. Shuttle control
 - ☒ 3. Production control
 - ☒ 4. Traffic control

Question Type : MCQ
Question ID : 630680528808
Chosen Option : 3

Q.30 निम्नलिखित में से कौन सा उत्पादन पूर्वानुमान के लिए आमतौर पर इस्तेमाल की जाने वाली विधि नहीं है?

- Ans
- ☒ 1. मोटे कार्लो सिमुलेशन
 - ☒ 2. गुणात्मक तरीके
 - ☒ 3. समय श्रृंखला विश्लेषण
 - ☒ 4. रैंडम वॉक थ्योरी

Question Type : MCQ
Question ID : 630680528857
Chosen Option : 4

Q.31 सस्पेंशन सिस्टम में कौन सा घटक कॉर्नरिंग के दौरान बॉडी रोल को कम करने में मदद करता है?

- Ans
- ☒ 1. स्वे बार
 - ☒ 2. लीफ स्प्रिंग
 - ☒ 3. बॉल जॉइन्ट
 - ☒ 4. स्ट्रट

Question Type : MCQ
Question ID : 630680528882
Chosen Option : 1

Q.32 Which of the following properties is NOT plotted on a psychrometric chart?

- Ans ☒ 1. Ambient noise level
- ☐ 2. Wet bulb temperature
- ☐ 3. Relative humidity
- ☐ 4. Dry bulb temperature

Question Type : MCQ

Question ID : 630680528861

Chosen Option : 1

Q.33 Thin cylindrical pressure vessels are primarily designed to with stand:

- Ans ☐ 1. bending moments.
- ☒ 2. hoop stresses.
- ☐ 3. shear stresses.
- ☐ 4. axial loads.

Question Type : MCQ

Question ID : 630680528863

Chosen Option : 2

Q.34 Which of the following curves is essential in CAD-CAM for representing freeform surfaces in both 2D and 3D modeling?

- Ans ☐ 1. Parabola
- ☒ 2. Bézier curve
- ☐ 3. Exponential curve
- ☐ 4. Hyperbola

Question Type : MCQ

Question ID : 630680528810

Chosen Option : 2

Q.35 Which steering system component converts the rotary motion of the steering wheel into linear motion to turn the wheels?

- Ans ☐ 1. Tie Rod
- ☐ 2. Steering Column
- ☐ 3. Power Steering Pump
- ☒ 4. Rack and Pinion

Question Type : MCQ

Question ID : 630680528881

Chosen Option : 4

Q.36 Which economic factor is a primary driver for industries to adopt CIM?

- Ans
- ☐ 1. Increase in export duties.
 - ☐ 2. Increase in raw material costs.
 - ☐ 3. Decrease in software development costs.
 - ☒ 4. Demand for personalized products.

Question Type : MCQ
Question ID : 630680528817
Chosen Option : 2

Q.37 The efficiency of a centrifugal pump is highest when

- Ans
- ☐ 1. the pump impeller is damaged.
 - ☒ 2. the pump is running at its best efficiency point.
 - ☐ 3. the flow is too low.
 - ☐ 4. the flow is too high.

Question Type : MCQ
Question ID : 630680528827
Chosen Option : 2

Q.38 In the context of process engineering, what is the purpose of a 'P&ID' diagram?

- Ans
- ☐ 1. To display the product and its ingredients.
 - ☐ 2. To plot pressure and internal diameter of a vessel.
 - ☐ 3. To present the procedural and ideation phase of a project.
 - ☒ 4. To provide a detailed schematic of process flow with valves, and instrumentation.

Question Type : MCQ
Question ID : 630680528856
Chosen Option : 4

Q.39 Which type of coupling can accommodate both angular and parallel shaft misalignments?

- Ans
- ☒ 1. Flexible coupling
 - ☐ 2. Rigid coupling
 - ☐ 3. Flange coupling
 - ☐ 4. Gear coupling

Question Type : MCQ
Question ID : 630680528819
Chosen Option : 1

Q.40 In a single-stage reciprocating air compressor, the compression of air takes place:

- Ans
- ☐ 1. Both in the piston and cylinder simultaneously.
 - ☒ 2. Only once in a single cylinder.
 - ☐ 3. In multiple cylinders sequentially.
 - ☐ 4. First in the intercooler and then in the cylinder.

Question Type : MCQ
Question ID : 630680528872
Chosen Option : 4

Q.41 In a strain gauge configuration, the Wheatstone bridge is used to

- Ans
- ☒ 1. decrease the sensitivity of the strain gauge.
 - ☐ 2. convert mechanical strain into an electrical signal.
 - ☐ 3. convert strain to displacement.
 - ☐ 4. amplify the strain signal.

Question Type : MCQ
Question ID : 630680528852
Chosen Option : 4

Q.42 In CAD drawings for machine parts, what type of curve is defined by its start point, end point, and a specified radius?

- Ans
- ☐ 1. Ellipse
 - ☒ 2. Arc
 - ☐ 3. Parabola
 - ☐ 4. Helix

Question Type : MCQ
Question ID : 630680528813
Chosen Option : 2

Q.43 For bodies of irregular shapes, the center of gravity

- Ans
- ☐ 1. is always located at the geometric center of the shape.
 - ☒ 2. is the point where the total gravitational torque on the body is zero.
 - ☐ 3. is unaffected by the distribution of mass in the body.
 - ☐ 4. always coincides with the centroid.

Question Type : MCQ
Question ID : 630680528825
Chosen Option : 2

Q.44 Rectangular layout is an alternative form of _____ of flexible manufacturing system.

- Ans
- ☒ 1. Loop layout
 - ☐ 2. Open-field layout
 - ☐ 3. Inline layout
 - ☐ 4. Ladder layout

Question Type : MCQ
Question ID : 630680528807
Chosen Option : 1

Q.45 Which of the following is the primary method of heat transfer in fluids (liquids and gases)?

- Ans ☒ 1. Convection
- ☐ 2. Conduction
- ☐ 3. Reflection
- ☐ 4. Radiation

Question Type : MCQ

Question ID : 630680528832

Chosen Option : 1

Q.46 Which of the following statements is true regarding the stresses in a thin spherical pressure vessel?

- Ans ☐ 1. Hoop stress is half the radial stress.
- ☒ 2. Radial and hoop stresses are equal.
- ☐ 3. Radial stress is zero.
- ☐ 4. Hoop stress is full the radial stress.

Question Type : MCQ

Question ID : 630680528865

Chosen Option : 2

Q.47 Which of the following Nondestructive Testing (NDT) methods utilizes high-frequency sound waves to detect defects or measure material thickness?

- Ans ☐ 1. Radiographic Testing (RT)
- ☐ 2. Magnetic Particle Testing (MPT)
- ☐ 3. Dye Penetrant Inspection (DPI)
- ☒ 4. Ultrasonic Testing (UT)

Question Type : MCQ

Question ID : 630680528850

Chosen Option : 1

Q.48 Common Rail Direct Injection (CRDI) is a technology primarily associated with:

- Ans ☐ 1. Quadruple engines
- ☐ 2. Rotary engines
- ☒ 3. Diesel engines
- ☐ 4. Petrol engines

Question Type : MCQ

Question ID : 630680528874

Chosen Option : 3

Q.49 Which of the following is a primary purpose of using CAD software?

- Ans
- ☐ 1. Web browsing and internet research.
 - ☐ 2. Data analysis and statistics.
 - ☒ 3. 3D modeling and design drafting.
 - ☐ 4. Text processing and document creation.

Question Type : MCQ
Question ID : 630680528814
Chosen Option : 3

Q.50 The weighted average cost of capital (WACC) is

- Ans
- ☐ 1. the total capital divided by the number of shares outstanding.
 - ☐ 2. the average rate of return shareholders expect for providing capital to the firm.
 - ☐ 3. the cost associated with the next best alternative investment.
 - ☒ 4. the average interest rate a company must pay to finance its assets.

Question Type : MCQ
Question ID : 630680528836
Chosen Option : 3

Q.51 In CAD software, which command is typically used to create a continuous series of straight lines or arcs?

- Ans
- ☒ 1. Polyline
 - ☐ 2. Spline
 - ☐ 3. Line
 - ☐ 4. Circle

Question Type : MCQ
Question ID : 630680528811
Chosen Option : 2

Q.52 Which of the following refrigerants is considered to be a CFC (chlorofluorocarbon) and is known for its ozone-depleting properties?

- Ans
- ☐ 1. R-134a
 - ☐ 2. R-600a
 - ☒ 3. R-12
 - ☐ 4. R-32

Question Type : MCQ
Question ID : 630680528860
Chosen Option : 3

Q.53 धातु की सतह पर उभरी हुई या धँसी हुई डिज़ाइन बनाने के लिए किस डाई ऑपरेशन का उपयोग किया जाता है?

- Ans
- ☒ 1. लैसिंग
 - ☐ 2. एम्बॉसिंग
 - ☒ 3. चित्रकला
 - ☒ 4. कॉइनिंग

Question Type : MCQ
Question ID : 630680528876
Chosen Option : 4

Q.54 Identify an example of a steam boiler in which the flames and hot gases produced by combustion fuel pass through the tubes?

- Ans
- ☒ 1. Stirling boiler
 - ☒ 2. Yarrow boiler
 - ☐ 3. Scotch marine boiler
 - ☒ 4. Loeffler boiler

Question Type : MCQ
Question ID : 630680528803
Chosen Option : 1

Q.55 Which type of lubrication system delivers oil directly to the bearings and other critical engine parts under pressure?

- Ans
- ☐ 1. Pressure Feed System
 - ☒ 2. Gravity Feed System
 - ☒ 3. Splash pressure System
 - ☒ 4. Siphon pressure System

Question Type : MCQ
Question ID : 630680528880
Chosen Option : 3

Q.56 Why are fins used in heat exchangers?

- Ans
- ☒ 1. To decrease the rate of heat transfer
 - ☒ 2. To increase the aesthetic appeal
 - ☒ 3. To insulate and prevent any heat transfer
 - ☐ 4. To increase the surface area for heat transfer

Question Type : MCQ
Question ID : 630680528833
Chosen Option : 4

Q.57 Which of the following tools is commonly used in Time Study for recording the time of different tasks?

- Ans ☒ 1. Stopwatch
- ☐ 2. Pareto chart
- ☐ 3. Gantt chart
- ☐ 4. Flowchart

Question Type : MCQ
Question ID : 630680528838
Chosen Option : 1

Q.58 In which type of beam is one end fixed while the other end is free?

- Ans ☐ 1. Double overhanging beam
- ☒ 2. Cantilever beam
- ☐ 3. Single overhanging beam
- ☐ 4. Fixed beam

Question Type : MCQ
Question ID : 630680528826
Chosen Option : 2

Q.59 जब किसी दिए गए बिंदु पर द्रव के गुण समय बीतने के साथ नहीं बदलते हैं, तो प्रवाह को कैसा प्रवाह माना जाता है?

- Ans ☐ 1. एकसमान प्रवाह
- ☐ 2. अस्थिर प्रवाह
- ☒ 3. निरंतर प्रवाह
- ☐ 4. गैर-समान प्रवाह

Question Type : MCQ
Question ID : 630680528828
Chosen Option : 3

Q.60 What potential hazard is associated with the application of cutting fluids in machining processes?

- Ans ☐ 1. Enhancement of surface finish
- ☐ 2. Reduced tool life
- ☒ 3. Generation of hazardous smoke or mist
- ☐ 4. Increase in machining speed

Question Type : MCQ
Question ID : 630680528843
Chosen Option : 3

Q.61 Which of the following engineering material is classified as ferrous metals?

- Ans
- ☒ 1. Copper
 - ☒ 2. Aluminium
 - ☒ 3. Cast iron
 - ☒ 4. Zinc

Question Type : MCQ
Question ID : 630680528804
Chosen Option : 3

Q.62 Which type of governor relies on centrifugal force to regulate engine speed?

- Ans
- ☒ 1. Throttle governor
 - ☒ 2. Pendulum governor
 - ☒ 3. Compression governor
 - ☒ 4. Gravity governor

Question Type : MCQ
Question ID : 630680528870
Chosen Option : 2

Q.63 Which type of turbines are best suited for high head, low flow applications?

- Ans
- ☒ 1. Kaplan Turbine
 - ☒ 2. Francis Turbine
 - ☒ 3. Gas Turbine
 - ☒ 4. Pelton Wheel

Question Type : MCQ
Question ID : 630680528830
Chosen Option : 4

Q.64 Which of the following properties of a material is crucial when designing a machine element that has to resist sudden and impact loads?

- Ans
- ☒ 1. Ductility
 - ☒ 2. Plasticity
 - ☒ 3. Elasticity
 - ☒ 4. Toughness

Question Type : MCQ
Question ID : 630680528820
Chosen Option : 4

Q.65 Which of the following is a scalar quantity?

- Ans
- ☒ 1. Force
 - ☒ 2. Displacement
 - ☒ 3. Velocity
 - ☒ 4. Area

Question Type : MCQ
Question ID : 630680528824
Chosen Option : 4

Q.66 Which model provide a natural separation between design and manufacturing domains, for computer-aided designs?

- Ans
- ☒ 1. Product models
 - ☒ 2. Generic product knowledge
 - ☒ 3. Factory models
 - ☒ 4. Generic process models

Question Type : MCQ
Question ID : 630680528815
Chosen Option : 4

Q.67 कौन सा कथन NC मशीन एकीकरण में कंप्यूटर-सहायता प्राप्त पूर्वानुमान की भूमिका का सबसे अच्छा वर्णन करता है?

- Ans
- ☒ 1. यह मशीन ऑपरेटरों के लिए ऑनलाइन गेमिंग प्लेटफॉर्म प्रदान करता है।
 - ☒ 2. यह सुनिश्चित करता है कि सभी मशीनें एक ही ब्रांड की हों।
 - ☒ 3. यह मशीन के बाहरी हिस्सों के लिए सजावटी डिज़ाइन प्रदान करता है।
 - ☒ 4. यह मशीन के उपयोग को बढ़ाने के लिए पूर्वानुमानित विश्लेषण का उपयोग करता है।

Question Type : MCQ
Question ID : 630680528818
Chosen Option : 4

Q.68 रोबोट प्रोग्रामिंग में, ज्ञात प्रारंभिक बिंदु, आंतरिक सेंसर और उसके द्वारा तय की गई दूरी के आधार पर रोबोट की स्थिति की गणना का वर्णन करने के लिए किस शब्द का उपयोग किया जाता है?

- Ans
- ☒ 1. डेड रेकोनिंग
 - ☒ 2. किनमैटिक्स
 - ☒ 3. इनवर्स किनमैटिक्स
 - ☒ 4. पाथ प्लानिंग

Question Type : MCQ
Question ID : 630680528842
Chosen Option : 1

Q.69 In a multi-plate clutch, if the number of friction surfaces increases, then:

- Ans
- ☒ 1. The size of the clutch decreases.
 - ☒ 2. The clutch becomes inoperable.
 - ☒ 3. The torque transmitting capacity decreases.
 - ☒ 4. The torque transmitting capacity increases.

Question Type : MCQ
Question ID : 630680528869
Chosen Option : 4

Q.70 Which of the following instruments is commonly used for measuring the tooth thickness of gears?

- Ans ☒ 1. Gear tooth vernier
- ☒ 2. Vernier Scale
- ☒ 3. Vernier caliper
- ☒ 4. Pitch circle diameter gauge

Question Type : MCQ
Question ID : 630680528854
Chosen Option : 1

Q.71 Which of the following factors does NOT influence the rate of corrosion?

- Ans ☒ 1. Time of day
- ☒ 2. Presence of impurities in the metal
- ☒ 3. pH of the environment
- ☒ 4. Type of metal

Question Type : MCQ
Question ID : 630680528848
Chosen Option : 1

Q.72 A jet of fluid impinges on a curved vane moving in the direction of the jet with a velocity equal to the jet velocity. What is the force exerted by the jet on the vane?

- Ans ☒ 1. 0
- ☒ 2. $F=pV^2A$
- ☒ 3. -1
- ☒ 4. $F=2pQV$

Question Type : MCQ
Question ID : 630680528829
Chosen Option : 4

Q.73 What is the primary function of a broaching machine?

- Ans ☒ 1. Finishing surfaces through abrasion
- ☒ 2. Removing material with a linearly reciprocating tool
- ☒ 3. Welding metals together
- ☒ 4. Removing material using a rotating tool

Question Type : MCQ
Question ID : 630680528846
Chosen Option : 1

Q.74 Which of the following formulas correctly represents the break-even point in units?

- Ans
- ☒

1. Break-even point (units) = Variable Costs / (Selling Price - Fixed Costs)
- ☒

2. Break-even point (units) = (Fixed Costs + Variable Costs) / Selling Price
- ☒

3. Break-even point (units) = Fixed Costs / (Selling Price - Variable Cost per unit)
- ☒

4. Break-even point (units) = Fixed Costs / Selling Price

Question Type : MCQ

Question ID : 630680528855

Chosen Option : 3

Q.75 An air conditioning system that can simultaneously provide both heating and cooling in different areas is known as:

- Ans
- ☒

1. Window AC
- ☒

2. Variable Refrigerant Flow
- ☒

3. Packaged AC
- ☒

4. Split AC

Question Type : MCQ

Question ID : 630680528859

Chosen Option : 4

Q.76 In a diesel engine, the component responsible for injecting the fuel directly into the combustion chamber at the end of the compression stroke is:

- Ans
- ☒

1. Carburetor
- ☒

2. Fuel Injector
- ☒

3. Spark Plug
- ☒

4. Fuel Pump

Question Type : MCQ

Question ID : 630680528871

Chosen Option : 2

Q.77 Which of the following is a fundamental component of Computer-Integrated Manufacturing (CIM)?

- Ans
- ☒

1. Traditional inventory record books
- ☒

2. Manual machine tool controls
- ☒

3. Computer-aided process planning
- ☒

4. Hand-written production schedules

Question Type : MCQ

Question ID : 630680528816

Chosen Option : 3

Q.78 When a rotating mass is said to be in static balance, it means:

- Ans
- ☒ 1. The mass will not cause any vibration when rotated.
 - ☒ 2. The mass will only cause a rotational vibration but not translational.
 - ☒ 3. The center of gravity of the system lies on the axis of rotation
 - ☒ 4. he system will have equal rotational energy in all directions.

Question Type : MCQ
Question ID : 630680528867
Chosen Option : 2

Q.79 Which crystal structure is associated with a coordination number of 6?

- Ans
- ☒ 1. Body-centered cubic
 - ☒ 2. Hexagonal close-packed
 - ☒ 3. Simple cubic
 - ☒ 4. Face-centered cubic

Question Type : MCQ
Question ID : 630680528849
Chosen Option : 3

Q.80 जंग से सुरक्षा प्रदान करने के लिए स्टील के लिए निम्नलिखित में से कौन सी आमतौर पर इस्तेमाल की जाने वाली रूपांतरण(conversion) कोटिंग है?

- Ans
- ☒ 1. एनोडाइजिंग
 - ☒ 2. ब्लैक ऑक्साइड
 - ☒ 3. क्रोमेट रूपांतरण(conversion)
 - ☒ 4. विद्युत लेपन

Question Type : MCQ
Question ID : 630680528847
Chosen Option : 4

Section : General Awareness

Q.1 In which of the following states, seed farm is declared as first carbon neutral farm?

- Ans
- ☒ 1. Kerala
 - ☒ 2. Sikkim
 - ☒ 3. Tamil Nadu
 - ☒ 4. Maharashtra

Question Type : MCQ
Question ID : 630680528887
Chosen Option : 1

Q.2 Which of the following organization with Indian Navy conducted successful trial of interceptor missile ?

- Ans
- ☒ 1. BEML
 - ☐ 2. DRDO
 - ☒ 3. HAL
 - ☒ 4. ISRO

Question Type : MCQ
Question ID : 630680528885
Chosen Option : 2

Q.3 The rivers in their lower course split into numerous channels due to the deposition of silt. What are these channels known as?

- Ans
- ☒ 1. Tributaries
 - ☒ 2. Bhabar
 - ☒ 3. Doab
 - ☐ 4. Distributaries

Question Type : MCQ
Question ID : 630680528893
Chosen Option : 1

Q.4 What will be the level of population density in the area having sufficient resources?

- Ans
- ☒ 1. Low density of population
 - ☐ 2. High density of population
 - ☒ 3. Uneven distribution of population
 - ☒ 4. Very low density of population

Question Type : MCQ
Question ID : 630680528896
Chosen Option : 1

Q.5 Who elect the President of India?

- Ans
- ☒ 1. Member of Legislative Assemblies (MLAs)
 - ☒ 2. Member of Parliament (MPs)
 - ☐ 3. Elected members of both the Houses of Parliament and the elected members of the Legislative Assemblies of States and the Union Territories of Delhi and Puducherry.
 - ☒ 4. MPs, MLAs and Prime Minister of India

Question Type : MCQ
Question ID : 630680528899
Chosen Option : 3

Q.6 Which of the following animal has been accepted as a food animal by the Food Safety and Standards Authority of India (FSSAI) in November 2022?

- Ans
- ☒ 1. Himalayan goat
 - ☒ 2. Himalayan Monal
 - ☒ 3. Himalayan Yak
 - ☒ 4. Himalayan Tahr

Question Type : MCQ
Question ID : 630680528886
Chosen Option : 1

Q.7 Which among the following social reformer helped in abolition of Sati?

- Ans
- ☒ 1. Mahatma Gandhi
 - ☒ 2. Rammohan Roy
 - ☒ 3. Debendranath Tagore
 - ☒ 4. Swami Vivekananda

Question Type : MCQ
Question ID : 630680528890
Chosen Option : 2

Q.8 Which organization started the "Space Science and Technology Awareness Training Program" (START) for Indian students?

- Ans
- ☒ 1. ISRO
 - ☒ 2. BHEL
 - ☒ 3. NASA
 - ☒ 4. GAIL

Question Type : MCQ
Question ID : 630680528884
Chosen Option : 1

Q.9 भारत में निम्नलिखित में से किस राज्य/केन्द्र शासित प्रदेश का जनसंख्या घनत्व सर्वाधिक है?

- Ans
- ☒ 1. बिहार
 - ☒ 2. दिल्ली
 - ☒ 3. महाराष्ट्र
 - ☒ 4. पश्चिम बंगाल

Question Type : MCQ
Question ID : 630680528895
Chosen Option : 4

Q.10 निम्नलिखित में से कौन जिम्नोस्पर्म पौधे का उदाहरण है?

- Ans
- ☐ 1. मटर
 - ☐ 2. टमाटर
 - ☐ 3. आलू
 - ☒ 4. सागोपाम

Question Type : MCQ
Question ID : 630680528902
Chosen Option : 1

Q.11 Who was the 10th guru of Sikh religion?

- Ans
- ☐ 1. Guru Nanak
 - ☐ 2. Guru Angad
 - ☐ 3. Guru Hargobind
 - ☒ 4. Guru Govind Singh

Question Type : MCQ
Question ID : 630680528892
Chosen Option : 4

Q.12 Which of the following are the first group of plants to grow on various habitats like rock, lava, sand, water?

- Ans
- ☒ 1. Bryophyta
 - ☐ 2. Gymnosperms
 - ☐ 3. Pteridophyta
 - ☐ 4. Angiosperms

Question Type : MCQ
Question ID : 630680528901
Chosen Option : 4

Q.13 Who has been appointed as the brand ambassador of the ICC World Cup 2023?

- Ans
- ☐ 1. Amitabh Bachchan
 - ☐ 2. Akshay Kumar
 - ☒ 3. Shahrukh Khan
 - ☐ 4. Ajay Devgan

Question Type : MCQ
Question ID : 630680528883
Chosen Option : 3

Q.14 निम्नलिखित में से कौन सा अप्रत्यक्ष कर का उदाहरण है?

- Ans
- ☒

 1. सेवा कर
- ☐

 2. धन कर
- ☐

 3. आयकर
- ☐

 4. उपहार कर

Question Type : MCQ

Question ID : 630680528888

Chosen Option : 4

Q.15 "थू द ब्रोकेन ग्लास: एन ऑटोबायोग्राफी" निम्नलिखित में से किस व्यक्ति से संबंधित है?

- Ans
- ☐

 1. अटल बिहारी बाजपेयी
- ☒

 2. टी.एन. शेषन
- ☐

 3. मनमोहन सिंह
- ☐

 4. जे एम लिंगदोह

Question Type : MCQ

Question ID : 630680528891

Chosen Option : 2

Q.16 Which of the following group of plants are ‘naked seeded plants’?

- Ans
- ☐

 1. Pteridophyta
- ☐

 2. Angiospermae
- ☐

 3. Bryophyta
- ☒

 4. Gymnospermae

Question Type : MCQ

Question ID : 630680528900

Chosen Option : 2

Q.17 The Constitution of India vests the executive power of the Union formally in which among the following ?

- Ans
- ☐

 1. Council of minsters
- ☒

 2. President
- ☐

 3. Chief Justice of India
- ☐

 4. Prime Minister

Question Type : MCQ

Question ID : 630680528898

Chosen Option : 2

Q.18 पहाड़ों से उतरने के बाद नदियाँ शिवालिक की ढलानों के समानांतर लगभग 8 से 16 किमी चौड़ी एक संकीर्ण बेल्ट में कंकड़ जमा करती हैं। इस संकीर्ण बेल्ट को क्या कहा जाता है?

- Ans
- ☒ 1. भांगर
 - ☒ 2. भाबर
 - ☒ 3. दोआब
 - ☒ 4. खादर

Question Type : MCQ
Question ID : 630680528894
Chosen Option : 3

Q.19 सैय्यद अहमद खान ने किस वर्ष मोहम्मडन एंग्लो ओरिएंटल एजुकेशनल कॉन्फ्रेंस की स्थापना की?

- Ans
- ☒ 1. 1886
 - ☒ 2. 1891
 - ☒ 3. 1889
 - ☒ 4. 1888

Question Type : MCQ
Question ID : 630680528889
Chosen Option : 3

Q.20 Which of the following word was not present in the preamble of Indian Constitution in its original form?

- Ans
- ☒ 1. Social Justice
 - ☒ 2. We the people of India
 - ☒ 3. Secular
 - ☒ 4. Liberty

Question Type : MCQ
Question ID : 630680528897
Chosen Option : 3