रेलवे भर्ती बोर्ड / RAILWAY RECRUITMENT BOARD

सी ई एन नं. - 03/2024 / CEN No. - 03/2024

Test Date	04/06/2025
Test Time	9:00 AM - 11:00 AM
Subject	RRB JE Stage 2 Civil and Allied Engineering

*** Note**
Correct Answer will carry 1 mark per Question.
Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.
2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : **General Abilities**

Q.1 **Which of the following is NOT a file management task?**

Ans
- ✔ 1. Browsing the internet
- ✘ 2. Deleting files
- ✘ 3. Creating files
- ✘ 4. Renaming files

Q.2 **Which of the following is a zero waste procedure?**

Ans
- ✘ 1. Pest management
- ✔ 2. Integrated organic farming
- ✘ 3. Organic farming
- ✘ 4. Inorganic farming

Q.3 **The greenhouse gas that is known to contribute the least amount to global warming is _____.**

Ans
- ✘ 1. methane
- ✘ 2. carbon dioxide
- ✘ 3. CFCs
- ✔ 4. nitrous oxide

Q.4 **What is the purpose of the 'BCC' field in an email?**

Ans
- ✘ 1. It marks an email as urgent.
- ✘ 2. It allows recipients to see each others' addresses.
- ✘ 3. It deletes an email after it is read.
- ✔ 4. It hides recipients from each other.

Q.5 **Which dynasty was overthrown by Chandragupta Maurya to establish the Mauryan Empire?**

Ans
- ✔ 1. Nanda Dynasty
- ✘ 2. Shunga Dynasty
- ✘ 3. Gupta Dynasty
- ✘ 4. Kushan Dynasty

Q.6 If the area of contact increases while keeping the thrust constant, the pressure will _____.

Ans
✗ 1. first increase, then decrease
✓ 2. decrease
✗ 3. increase
✗ 4. remain the same

Q.7 Under the Delhi Sultanate what was the name of the state laws that grew under the monarchy, even if they violated the Shari'at?

Ans
✗ 1. Farman
✗ 2. Iqta
✓ 3. Zawabit
✗ 4. Fatwas

Q.8 _____ is the most efficient method used for the disposal of hospital-generated waste.

Ans
✓ 1. Sanitary landfills
✗ 2. Open dumps
✗ 3. Incinerator
✗ 4. Furnace

Q.9 If the mass of an object is 74.5 kg, what is its approximate weight on Earth? (Take g = 9.8 m/s²)

Ans
✗ 1. 74.5 N
✗ 2. 447 N
✗ 3. 7.6 N
✓ 4. 730 N

Q.10 In September 2024, which of the following Indian institutions was designated as the Thematic Hub for Quantum Computing under the National Quantum Mission?

Ans
✗ 1. Indian Institute of Technology Gandhinagar
✗ 2. Indian Institute of Technology Madras
✓ 3. Indian Institute of Science Bengaluru
✗ 4. Indian Institute of Technology Kanpur

Q.11 Which mouse pointer appears when adjusting column width / cell width in a table?

Ans
✗ 1. I-beam (Text cursor)
✗ 2. ↕ (Vertical double-headed arrow)
✗ 3. Hand cursor
✓ 4. ↔ (Horizontal double-headed arrow)

Q.12 If three resistors of 15 Ω, 35 Ω and 50 Ω are connected in series to a 25-V battery, what is the current flowing in the circuit?

Ans
✗ 1. 1.5 A
✓ 2. 0.25 A
✗ 3. 4 A
✗ 4. 2.88 A

Q.13 What is the typical range of a Local Area Network (LAN)?

Ans
✗ 1. More than 50 km
✓ 2. Up to 1 km
✗ 3. Up to 5 km
✗ 4. Up to 10 km

Q.14 What is the function of the Linux Shell?

Ans
✗ 1. To create and delete partitions
✗ 2. To directly manage hardware resources
✓ 3. To execute user commands and act as an interface between the user and the kernel
✗ 4. To store user data

Q.15 Who among the following won the gold medal in the women's high jump event at the National Games in February 2025?

Ans
✓ 1. Pooja Singh
✗ 2. Vithya Ramraj
✗ 3. Swapna Barman
✗ 4. Abhinaya Shetty

Q.16 When were the 38th National Games held in Uttarakhand?

Ans
✗ 1. January 15 - 30, 2025
✗ 2. February 1 - 20, 2025
✗ 3. February 10 - 25, 2025
✓ 4. January 28 - February 14, 2025

Q.17 An object is placed 25 cm in front of a convex lens with a focal length of 15 cm. What is the magnification produced by the lens?

Ans
✗ 1. M = 2.5
✗ 2. M = −2.5
✗ 3. M = 1.5
✓ 4. M = −1.5

Q.18 The effect of particulate matter which is a common air pollutant is maximally seen on the _____.

Ans
✗ 1. intestines
✓ 2. lungs
✗ 3. kidneys
✗ 4. liver

Q.19 The loss of forests, which is remarkably seen in the tropical areas of India, is around _____.

Ans
✗ 1. 20%
✗ 2. 10%
✓ 3. 40%
✗ 4. 30%

Q.20 Which of the following best describes a heterogeneous mixture?

Ans
✗ 1. It has a uniform composition.
✓ 2. The composition varies throughout the mixture.
✗ 3. It contains only one phase.
✗ 4. The components cannot be separated.

Q.21 The Indian Desert lies towards the western margins of which mountain range?

Ans
✓ 1. Aravali Hills
✗ 2. Western Ghats
✗ 3. Vindhya Hills
✗ 4. Satpura Hills

Q.22 As per Article 78, it is the duty of the Prime Minister to communicate all decisions of the Council of Ministers to whom?

Ans
- ✔ 1. President
- ✘ 2. Speaker of Lok Sabha
- ✘ 3. Chief Justice of India
- ✘ 4. Vice President

Q.23 Which of the following is an effective way to prevent rancidity in packaged food?

Ans
- ✔ 1. Adding antioxidants
- ✘ 2. Storing in a warm place
- ✘ 3. Keeping it in direct sunlight
- ✘ 4. Increasing moisture content

Q.24 The Railways Employment of Members of the Armed Forces Act was passed in which of the following years?

Ans
- ✔ 1. 1965
- ✘ 2. 1957
- ✘ 3. 1951
- ✘ 4. 1962

Q.25 Two objects of masses 80 kg and 250 kg are placed 200 m apart. What is the gravitational force between them? ($G = 6.7 \times 10^{-11}$ N·m²/kg²)

Ans
- ✔ 1. 3.35×10^{-11} N
- ✘ 2. 6.35×10^{-11} N
- ✘ 3. 4.50×10^{-11} N
- ✘ 4. 5.75×10^{-11} N

Q.26 Who among the following is NOT appointed by the President of India?

Ans
- ✘ 1. Governors of States
- ✘ 2. Chief Election Commissioner
- ✔ 3. Vice President
- ✘ 4. Comptroller and Auditor General

Q.27 Which of the following is an example of a WAN?

Ans
- ✘ 1. A Bluetooth connection between a phone and a laptop
- ✘ 2. A home Wi-Fi network
- ✘ 3. A university campus network
- ✔ 4. The internet

Q.28 What are the sand dunes commonly found in the Indian Desert called?

Ans
- ✘ 1. Cirques
- ✘ 2. Loess
- ✘ 3. Moraines
- ✔ 4. Barchans

Q.29 Where is the magnetic field strength maximum around a magnet?

Ans
- ✘ 1. Equidistant from the poles
- ✔ 2. At the poles of the magnet
- ✘ 3. At infinity
- ✘ 4. At the centre of the magnet

Q.30 What is the primary goal of application security?

Ans

✗ 1. To reduce the size of application files

✗ 2. To enhance the graphical user interface of applications

✗ 3. To increase the execution speed of applications

✓ 4. To protect applications from security threats by identifying and fixing vulnerabilities

Q.31 Which of the following is an example of a chemical change?

Ans

✗ 1. Tearing of paper

✗ 2. Freezing of water

✓ 3. Curdling of milk

✗ 4. Dissolution of sugar in water

Q.32 According to the Tendulkar methodology, what was the estimated national poverty line for rural areas in 2011-12?

Ans

✗ 1. ₹512 per month

✗ 2. ₹1,000 per month

✗ 3. ₹1,200 per month

✓ 4. ₹816 per month

Q.33 In an experiment, 25 g of reactant A reacts with 35 g of reactant B to form 50 g of product C and some amount of product D. What is the mass of product D?

Ans

✗ 1. 60 g

✗ 2. 35 g

✗ 3. 25 g

✓ 4. 10 g

Q.34 Which of the following is NOT an example of system software?

Ans

✗ 1. Windows 10

✗ 2. Linux

✗ 3. macOS

✓ 4. Microsoft Word

Q.35 Which of the following economic estimators provided estimates of India's national and per capita income during the colonial period?

Ans

✓ 1. VKRV Rao

✗ 2. John Maynard Keynes

✗ 3. Karl Marx

✗ 4. Adam Smith

Q.36 A student calculates the formula unit mass of calcium fluoride (CaF_2). If the atomic masses of Ca and F are 40 u and 19 u, respectively, what is the correct formula unit mass?

Ans

✓ 1. 78 u

✗ 2. 100 u

✗ 3. 59 u

✗ 4. 97 u

Q.37 Which statement correctly explains why liquids can flow?

Ans

✓ 1. Liquids have loosely packed molecules that slide past each other.

✗ 2. Liquids do not have kinetic energy.

✗ 3. Liquid molecules move randomly without any restriction.

✗ 4. Liquids have no intermolecular forces.

Q.38 **In December 2024, Jasprit Bumrah became the fastest Indian bowler to reach 200 Test wickets during which of the following series/tournament?**

Ans
- ✔ 1. Border-Gavaskar Trophy
- ✘ 2. India vs New Zealand Test Series
- ✘ 3. Asia Cup
- ✘ 4. India vs England Test Series

Q.39 **The area termed as the ozone hole is known to mainly develop over _____.**

Ans
- ✔ 1. Antartica
- ✘ 2. America
- ✘ 3. Africa
- ✘ 4. India

Q.40 **The Montreal Protocol came into force in the year _____.**

Ans
- ✘ 1. 1986
- ✘ 2. 1990
- ✔ 3. 1989
- ✘ 4. 1992

Q.41 **What happens when you use the 'Sort A to Z' option on a column containing text?**

Ans
- ✔ 1. The text is sorted alphabetically from A to Z.
- ✘ 2. The text remains unchanged.
- ✘ 3. The text is sorted from Z to A.
- ✘ 4. The text is converted into numbers.

Q.42 **Which of the following is a string instrument?**

Ans
- ✘ 1. Shehnai
- ✘ 2. Flute
- ✘ 3. Tabla
- ✔ 4. Sitar

Q.43 **The speed of a wave is given by which of the following formulas?**

Ans
- ✘ 1. Speed = Amplitude × Wavelength
- ✘ 2. Speed = Frequency × Amplitude
- ✔ 3. Speed = Frequency × Wavelength
- ✘ 4. Speed = Time × Frequency

Q.44 **The melting of snow and ice caps from the polar regions is responsible for _____.**

Ans
- ✘ 1. the decline in sea levels
- ✘ 2. condensation
- ✘ 3. rainfall
- ✔ 4. the rise in sea levels

Q.45 **The Punjab Plain is formed by which river system?**

Ans
- ✘ 1. Brahmaputra and its tributaries
- ✘ 2. Ganga and its tributaries
- ✔ 3. Indus and its tributaries
- ✘ 4. Narmada and its tributaries

Q.46 **Which of the following metals is placed between aluminium and zinc in the reactivity series?**

Ans
- ✗ 1. Copper
- ✓ 2. Magnesium
- ✗ 3. Carbon
- ✗ 4. Iron

Q.47 **Which of the following is NOT an example of an agrochemical?**

Ans
- ✗ 1. Herbicides
- ✗ 2. Fungicides
- ✓ 3. Biogas
- ✗ 4. Pesticides

Q.48 **Which property of solids allows them to be compressed the least compared to liquids and gases?**

Ans
- ✗ 1. The ability to diffuse into other solids
- ✗ 2. High kinetic energy of particles
- ✓ 3. Strong intermolecular forces and close packing of particles
- ✗ 4. High intermolecular spaces

Q.49 **The method of storage of nuclear wastes is to be done in _____.**

Ans
- ✗ 1. open containers
- ✗ 2. bottles
- ✓ 3. shielded containers
- ✗ 4. dustbins

Q.50 **Which of the following is an example of database management software?**

Ans
- ✗ 1. MS Paint
- ✓ 2. Microsoft Access
- ✗ 3. PowerPoint
- ✗ 4. Notepad

Section : **Technical Abilities**

Q.1 **According to IS 456:2000, for a column effectively held in position at one end but not restrained against rotation, and at the other end restrained against rotation but not held in position, the theoretical value of effective length is:**

Ans
- ✗ 1. 0.5 times the unsupported length
- ✗ 2. 1.5 times the unsupported length
- ✗ 3. equal to the unsupported length
- ✓ 4. 2.0 times the unsupported length

Q.2 **In public buildings such as hospitals, the administrative department should be located:**

Ans
- ✓ 1. centrally for convenience
- ✗ 2. in the farthest corner for privacy
- ✗ 3. at the back of the building for security
- ✗ 4. in an area with the best outside view

Q.3 **Which type of equipment is best suited for laying asphalt in road construction?**

Ans
✗ 1. Motor grader
✗ 2. Road roller
✗ 3. Scraper
✓ 4. Asphalt paver

Q.4 **Which of the following statements is INCORRECT about the contour interval of a contour map?**

Ans
✓ 1. Large contour interval is used where the time available for the survey is less.
✗ 2. The contour interval should be directly proportional to the scale of the map.
✗ 3. Small contour interval is selected for surveying on flat ground.
✗ 4. Large contour interval is used where the extent of survey is large.

Q.5 **Consider a beam of length 'AB' with 'C' as the midpoint. What is the magnitude of the shear force (sign convenction to be neglected) in the span 'AC' of this simply supported beam with a central point load 'P' kN?**

Ans
✗ 1. $\frac{P}{4}$
✓ 2. $\frac{P}{2}$
✗ 3. P
✗ 4. Zero

Q.6 **According to BIS (IS: 808–1989), which of the following is classified as a rolled steel column section?**

Ans
✗ 1. ISJB (Indian Standard Junior Beams)
✓ 2. ISHB (Indian Standard Heavy Weight Beams)
✗ 3. ISLB (Indian Standard Light Beams)
✗ 4. ISMB (Indian Standard Medium Weight Beams)

Q.7 **What is the main purpose of constructing Thiessen polygons?**

Ans
✓ 1. To determine the distribution of rainfall based on nearby stations
✗ 2. To identify flood-prone areas in a watershed
✗ 3. To predict future rainfall patterns
✗ 4. To measure the infiltration capacity of soil

Q.8 **A fixed beam of length 'L' is subjected to two concentrated loads: 'W' at $\frac{L}{4}$ from the left support (A) and '2W' at $\frac{3L}{4}$ from the left support (A). The beam is fixed at both ends (A and B). Which of the following statements is correct regarding the reactions at the supports?**

Ans
✗ 1. The reactions at both A and B are independent of the applied loads.
✗ 2. The reactions at A and B are equal and opposite.
✓ 3. The reaction at B is greater than the reaction at A.
✗ 4. The reaction at A is greater than the reaction at B.

Q.9 **Plinth protection along external walls is essential to prevent which of the following?**

Ans
✗ 1. Lateral pressure on walls and floors
✓ 2. Atmospheric action on foundation
✗ 3. Weathering of subsoil due to vegetation
✗ 4. Thrust of superstructure loads

Q.10 **Which of the following is NOT a type of dump truck?**

Ans
- ✗ 1. Bottom dump truck
- ✗ 2. Side or rear dump truck
- ✓ 3. Tower crane truck
- ✗ 4. Articulated dump truck

Q.11 **For the same soil, in case of IS heavy compaction test, as compared to IS light compaction test, the optimum moisture content value will be:**

Ans
- ✗ 1. more for IS heavy compaction test as compared to IS light compaction test
- ✗ 2. same for IS heavy compaction test and IS light compaction test
- ✓ 3. less for IS heavy compaction test as compared to IS light compaction test
- ✗ 4. Insufficient data in question

Q.12 **Which of the following is NOT a type of canal fall?**

Ans
- ✗ 1. Vertical drop fall
- ✗ 2. Montagu type fall
- ✗ 3. Notch fall
- ✓ 4. Weir fall

Q.13 **Under which of the following conditions should you prefer a caisson foundation?**

Ans
- ✗ 1. Multi-storey car parks
- ✗ 2. High-rise building in dry soil
- ✓ 3. Bridge piers in water
- ✗ 4. Residential buildings in clay soil

Q.14 **How is the centroid of a composite shape determined?**

Ans
- ✗ 1. By taking the sum of individual areas
- ✗ 2. By finding the intersection of the diagonals
- ✓ 3. By taking the weighted average of the centroids of individual areas
- ✗ 4. By considering only the shape with the largest area

Q.15 **During plastering a new surface, it should be washed with water and kept damp to obtain which of the following?**

Ans
- ✓ 1. Optimum suction
- ✗ 2. Base for keying
- ✗ 3. Proper curing
- ✗ 4. Base for hacking

Q.16 **What is the role of bituminous binder in pavement construction?**

Ans
- ✗ 1. It acts as a filler material.
- ✗ 2. It increases the water absorption capacity.
- ✗ 3. It reduces the pavement strength.
- ✓ 4. It binds the aggregates together.

Q.17 **To modify an existing surface in Autodesk Civil 3D 2024, which command is used to add or remove surface data?**

Ans
- ✗ 1. Add Surface Data
- ✗ 2. Surface Edit
- ✓ 3. Surface Modify
- ✗ 4. Surface Changing

Q.18 Which of the following has the lowest removal efficiency for particulate matter?

Ans

✗ 1. Centrifugal collectors

✗ 2. Bag filters

✗ 3. Electrostatic precipitators

✓ 4. Gravitational settling chambers

Q.19 Which of the following is NOT a proper access and egress method for a trench deeper than 4 feet?

Ans

✗ 1. Ramps

✗ 2. Ladders

✓ 3. Scaffolding

✗ 4. Steps

Q.20 Aerated concrete is manufactured by expanding the binding material mix by:

Ans

✓ 1. gas forming substances

✗ 2. reduction of coarse aggregates

✗ 3. vibrating the mix thoroughly

✗ 4. foam forming agents

Q.21 Which of the following methods is most commonly used for underwater concreting?

Ans

✗ 1. Shotcrete method

✗ 2. Roller compacted concrete

✓ 3. Tremie method

✗ 4. Hand mixing

Q.22 In which type of construction is a high plinth level recommended?

Ans

✗ 1. Desert regions

✓ 2. Flood-prone areas

✗ 3. Seismic zones

✗ 4. Industrial buildings

Q.23 Which of the following is a key difference between short columns and long columns?

Ans

✗ 1. Short columns are only used in steel structures, while long columns are used in concrete structures.

✓ 2. Long columns have a higher slenderness ratio compared to short columns.

✗ 3. Long columns experience pure axial compression, while short columns experience lateral deflection.

✗ 4. Short columns fail due to buckling, while long columns fail due to crushing.

Q.24 Which stair type is most suitable for limited space?

Ans

✓ 1. Spiral staircase

✗ 2. Quarter-turn staircase

✗ 3. Straight flight

✗ 4. Dog-legged staircase

Q.25 Which component of a staircase supports the treads and risers?

Ans

✗ 1. Baluster

✗ 2. Handrail

✓ 3. Stringer

✗ 4. Newel post

Q.26 **Which of the following commands/settings facilitates the cursor movement to select midpoint, endpoint etc. of objects while drawing in AutoCAD?**

Ans

✗ 1. Ortho

✓ 2. Object Snap

✗ 3. Polar Tracking

✗ 4. Snap

Q.27 **A field test for brick where in the brick is immersed in water for a certain amount of time is known as _____.**

Ans

✗ 1. hardness test

✓ 2. absorption test

✗ 3. structure test

✗ 4. shrinkage test

Q.28 **Which of the following statements is INCORRECT about a total station?**

Ans

✗ 1. Circle graduation error can be eliminated by photo-etching the graduations onto a glass circle.

✓ 2. Horizontal collimation error is eliminated after checking the height of standards.

✗ 3. Horizontal collimation error and height of standards error can magnify each other.

✗ 4. Height of collimation error exists when the optical axis of the theodolite is not exactly perpendicular to the telescope axis.

Q.29 **A sample of coarse aggregate weighing 5 kg is fully immersed in water for 24 hours. After surface-drying, its weight is found to be 5.08 kg. If the oven-dried weight of the sample is 5 kg, what is the water absorption percentage of the aggregate?**

Ans

✗ 1. 4%

✗ 2. 2.5%

✓ 3. 1.6%

✗ 4. 3%

Q.30 **When an elastic body is subjected to an axial tensile force, it undergoes:**

Ans

✗ 1. decrease in length and decrease in cross-sectional area

✓ 2. increase in length and decrease in cross-sectional area

✗ 3. increase in length and increase in cross-sectional area

✗ 4. decrease in length and increase in cross-sectional area

Q.31 **The materials of a grout should not _____, but should _____ to fill gaps.**

Ans

✗ 1. expand; shrink

✗ 2. harden; crumble

✓ 3. shrink; expand

✗ 4. condense; evaporate

Q.32 **Introducing slip joints between external wall and roof slab will reduce cracking due to:**

Ans

✓ 1. temperature variation

✗ 2. external chemical reaction

✗ 3. moisture changes

✗ 4. the movement of ground

Q.33 **In concrete, the addition of water-reducing admixtures helps in:**

Ans

✗ 1. decreasing the compressive strength of the concrete

✗ 2. reducing the durability of the concrete

✓ 3. improving the workability of the concrete without increasing the water content

✗ 4. increasing the permeability of the concrete

Q.34 In which situation is a doubly reinforced beam preferred over a singly reinforced beam?

Ans
- ✔ 1. When moments are expected to reverse, such as in multi-storeyed frames under lateral loads
- ✘ 2. When minimum reinforcement is required
- ✘ 3. When the beam is short and deep
- ✘ 4. When the beam is subjected only to compressive forces

Q.35 If a building settles by 100 mm in a 5-year-period after construction, the type of soil below the foundation is _____ and the reason of settlement is _____.

Ans
- ✘ 1. clayey; compaction
- ✘ 2. sandy; consolidation
- ✘ 3. sandy; compaction
- ✔ 4. clayey; consolidation

Q.36 An agreement enforceable by law is called a/an _____.

Ans
- ✘ 1. tender
- ✔ 2. contract
- ✘ 3. estimate
- ✘ 4. muster roll

Q.37 In the construction of mud floors, what material used in the mix, prevents the cracks from forming?

Ans
- ✘ 1. Sand
- ✘ 2. Fine muram
- ✘ 3. Natural resin
- ✔ 4. Chopped straw

Q.38 When considering the economics of a road alignment, what costs are taken into account?

Ans
- ✘ 1. Only the initial construction cost
- ✘ 2. Only the maintenance cost
- ✔ 3. The total cost, including initial construction, maintenance, and vehicle operation costs
- ✘ 4. Only the vehicle operation cost

Q.39 Which of the following is the most accurate method of estimation?

Ans
- ✔ 1. Total quantity method
- ✘ 2. Unit quantity method
- ✘ 3. Thorough estimate
- ✘ 4. Cube rate estimate

Q.40 Epoxy adhesives are classified under _____ adhesives.

Ans
- ✔ 1. polymeric
- ✘ 2. latex
- ✘ 3. water borne
- ✘ 4. polyester

Q.41 Site plan is also known as:

Ans
- ✔ 1. Plot plan
- ✘ 2. Landscape plan
- ✘ 3. Sanction plan
- ✘ 4. Ground floor plan

Q.42 **Which of the following is NOT an assumption of pure bending theory?**

Ans

✗ 1. The beam follows Hooke's Law within the elastic limit.

✗ 2. The material is homogeneous and isotropic.

✗ 3. The cross-section of the beam remains plane before and after bending.

✓ 4. The beam is subjected to both bending moments and shear forces.

Q.43 **In a beam under bending (for sagging bending), where is the maximum compressive strain observed?**

Ans

✗ 1. At the bottom fibre

✗ 2. Uniformly across the section

✓ 3. At the top fibre

✗ 4. At the neutral axis

Q.44 **For dewatering in cohesive soils, which technique is typically ineffective?**

Ans

✗ 1. Well-point system

✗ 2. Electro-osmosis

✓ 3. Sump pumping

✗ 4. Deep wells

Q.45 **Which of the following types of station yards is primarily used for loading and unloading cargo?**

Ans

✗ 1. Locomotive yard

✓ 2. Goods yard

✗ 3. Passenger yard

✗ 4. Marshalling yard

Q.46 **An isolated tapered footing is to be built at a depth of 0.8 m and base area 4 m^2. The quantity of earthwork required for this foundation will be:**

Ans

✗ 1. more than 4 m^2

✓ 2. 3.2 m^3

✗ 3. 4 m^2

✗ 4. less than 3.2 m^3

Q.47 **In case of Bridge Engineering, which type of maintenance is performed to prevent potential failures before they occur?**

Ans

✓ 1. Preventive maintenance

✗ 2. Corrective maintenance

✗ 3. Deferred maintenance

✗ 4. Emergency maintenance

Q.48 **Which of the following bonds is used when constructing curved brick walls?**

Ans

✗ 1. Stretcher bond

✗ 2. Dutch bond

✗ 3. English bond

✓ 4. Header bond

Q.49 According to IS 456:2000, how is the nominal shear stress (τ_v) in a beam calculated?

Where,
V_u = Factored shear force
b = Breadth of beam
d = Effective depth of the beam section
D = Overall depth of section

Ans
✓ 1. $\tau_v = \frac{Vu}{b \times d}$
✗ 2. $\tau_v = \frac{Vu}{d}$
✗ 3. $\tau_v = \frac{Vu}{b}$
✗ 4. $\tau_v = \frac{Vu}{b + D}$

Q.50 The rules and regulations framed by a municipal corporation to control development under its jurisdiction are called _____.

Ans
✓ 1. Building Bye Laws
✗ 2. Gazetted Rules
✗ 3. Construction Ordinances
✗ 4. Codes of Practice

Q.51 Which of the following defects is due to poor bonding between coats of plaster?

Ans
✗ 1. Blistering
✓ 2. Flaking
✗ 3. Staining
✗ 4. Popping

Q.52 A window that projects outward from the wall surface to form a small alcove is called:

Ans
✗ 1. casement window
✗ 2. sliding window
✓ 3. bay window
✗ 4. fixed window

Q.53 Under which of the following circumstances is the revised estimate prepared?

Ans
✗ 1. When the expenditure on a work exceeds the amount of administrative sanction by more than 5%
✗ 2. When another copy of estimate is requested by authorities
✓ 3. When there are material deviation from the original proposal
✗ 4. When the original sanctioned estimate is exceeded by more than 2%

Q.54 The Modulus of Elasticity (E) provides a relationship between:

Ans
✓ 1. normal stress and normal strain
✗ 2. normal strain and shear strain
✗ 3. shear stress and shear strain
✗ 4. shear stress and normal stress

Q.55 The pressure head in a fluid is expressed in terms of:

Ans
✓ 1. length
✗ 2. velocity
✗ 3. force
✗ 4. time

Q.56 For slender cylinders, as the height to lateral dimension ratio of the concrete specimen increases, the compressive strength:

Ans

✗ 1. first increases, then decreases

✓ 2. decreases

✗ 3. increases

✗ 4. remains constant

Q.57 The 'Multiplying constant' used in the distance equation of stadia tacheometry is also known as _____.

Ans

✗ 1. stadia interval factor

✓ 2. stadia hair constant

✗ 3. stadia correction constant

✗ 4. stadia correction factor

Q.58 In a solid ground floor construction, the lowest layer is _____.

Ans

✗ 1. damp proof course

✗ 2. cement concrete slab

✓ 3. compacted earth fill

✗ 4. flooring

Q.59 Which of the following door types provides the best combination of ventilation and privacy?

Ans

✗ 1. Paneled door

✓ 2. Louvered door

✗ 3. Flush door

✗ 4. Sliding door

Q.60 As per IS 456:2000, what is the maximum water-cement ratio for M30 concrete with severe exposure conditions?

Ans

✗ 1. 0.40

✓ 2. 0.45

✗ 3. 0.55

✗ 4. 0.50

Q.61 A hinge support in a beam can resist:

Ans

✗ 1. only horizontal force

✗ 2. bending moment only

✗ 3. only vertical force

✓ 4. both horizontal and vertical forces

Q.62 According to the Principle of Superposition, the total deformation of a body subjected to multiple direct forces is:

Ans

✗ 1. the sum of maximum and minimum deformations

✗ 2. independent of the individual deformations

✗ 3. the product of deformations of individual sections

✓ 4. the algebraic sum of deformations of considered individual sections

Q.63 Which of the following is the default rendering engine in Autodesk's latest 3ds Max version?

Ans

✗ 1. Scanline Renderer

✗ 2. Mental Ray

✓ 3. Arnold

✗ 4. V-Ray

Q.64 **Structures such as famous monuments and geographical features (hills and lakes) within a larger neighbourhood area, in which the site is located, is shown on which plan?**

Ans

✗ 1. Plot Plan

✗ 2. Floor Plan

✗ 3. Site Plan

✓ 4. Location Plan

Q.65 **Which type of elevator is best suited for high-rise buildings?**

Ans

✓ 1. Traction elevator

✗ 2. Belt elevator

✗ 3. Pneumatic elevator

✗ 4. Hydraulic elevator

Q.66 **What is the primary purpose of the re-barring technique in building maintenance?**

Ans

✗ 1. To improve the thermal resistance of the building

✗ 2. To provide surface finishing to exposed concrete

✓ 3. To increase the load-bearing capacity of an existing structure

✗ 4. To replace damaged reinforcement bars in old buildings

Q.67 **With reference to treatment of waste water, the skimming tanks are used for:**

Ans

✗ 1. mixing of coagulants

✗ 2. removal of inorganic grit

✓ 3. removal of oil and grease

✗ 4. removal of gases like methane

Q.68 **With reference to disposal of solid wastes, pulverisation refers to:**

Ans

✓ 1. crushing and grinding

✗ 2. cutting and tearing

✗ 3. cutting only

✗ 4. heating at 1,100°C

Q.69 **In which of the following types of pointing does the profile have a flat surface and aligns with the face of the wall?**

Ans

✓ 1. Flush pointing

✗ 2. Recessed pointing

✗ 3. Beaded pointing

✗ 4. V pointing

Q.70 **Which method of plane tabling is used when the distance between the point and the instrument station is too large?**

Ans

✓ 1. Intersection

✗ 2. Traversing

✗ 3. Radiation

✗ 4. Resection

Q.71 **Which of the following commands in Autodesk Civil 3D 2024 is used to generate a profile from an alignment?**

Ans

✓ 1. Create Profile

✗ 2. Profile from Alignment

✗ 3. Draw Profile

✗ 4. Generate Profile

Q.72 **Which of the following is NOT a property of carbon fibre?**

Ans
- ✔ 1. High ductility
- ✘ 2. Low thermal conductivity
- ✘ 3. High stiffness
- ✘ 4. High corrosion resistance

Q.73 **According to IS 456:2000, a column is classified as a short column if the slenderness factor about both the major and minor principal axes is less than:**

Ans
- ✘ 1. 34
- ✔ 2. 12
- ✘ 3. 22
- ✘ 4. 40

Q.74 **Which of the following can be classified as light weight roofing?**

Ans
- ✘ 1. Madras terrace roofing
- ✘ 2. Slate tile roofing
- ✔ 3. Aluminium sheet roofing
- ✘ 4. Flat clay tile roofing

Q.75 **In India, which of the following timber is most commonly used for scaffolding?**

Ans
- ✘ 1. Bijasal
- ✘ 2. Banyan
- ✔ 3. Bamboo
- ✘ 4. Bakul

Q.76 **Which of the following is the primary cause of water hammer?**

Ans
- ✘ 1. Increase in pipe diameter
- ✘ 2. High fluid viscosity
- ✔ 3. Sudden changes in flow velocity
- ✘ 4. Low water temperature

Q.77 **Which of the following best describes a collision diagram in traffic engineering?**

Ans
- ✘ 1. A chart showing vehicle speeds on a highway
- ✔ 2. A graphical representation of accident patterns at a location
- ✘ 3. A statistical report on traffic volume at a location
- ✘ 4. A blueprint for road intersection design at a location

Q.78 **Identify the correct statements from the following.**

A: Densification of soil is a type of mechanical stabilisation.
B: Addition of calcium chloride can facilitate soil compaction.
C: Heating of soil is not a method of soil stabilisation.

Ans
- ✘ 1. A only
- ✔ 2. A and B only
- ✘ 3. C only
- ✘ 4. B and C only

Q.79 **Which of the following is NOT a type of flow line?**

Ans
- ✘ 1. Streakline
- ✘ 2. Pathline
- ✔ 3. Energy line
- ✘ 4. Vortex line

Q.80 What instrument is primarily used for setting out a right-angle layout on site?

Ans
- ✓ 1. Cross staff
- ✗ 2. Dumpy level
- ✗ 3. Theodolite
- ✗ 4. Total station

Q.81 What is the primary purpose of a Tunnel Boring Machine (TBM)?

Ans
- ✗ 1. To drill for oil and gas
- ✗ 2. To transport materials underground
- ✗ 3. To construct bridges
- ✓ 4. To excavate tunnels in a controlled manner

Q.82 Which of the following is NOT a primary function of the plinth?

Ans
- ✗ 1. Preventing insects from entering the building
- ✗ 2. Distributing load to the foundation
- ✓ 3. Providing support to upper floors
- ✗ 4. Raising the floor level to prevent water ingress

Q.83 In stone quarrying, tamping is the process of:

Ans
- ✗ 1. dampening the rock layers with water before digging with tools
- ✗ 2. ramming the wood wedges into holes drilled into the rock
- ✗ 3. separating rock layers by applying electricity
- ✓ 4. filling the hole containing the explosive charge with damp clay

Q.84 The most simple epoxy injection method is _____ injection.

Ans
- ✗ 1. low pressure
- ✓ 2. brush
- ✗ 3. high pressure
- ✗ 4. hand gun

Q.85 All received tenders can be rejected by the department if:

Ans
- ✗ 1. there is a change of government
- ✗ 2. more than 50 tenders are received for one invitation
- ✓ 3. figure quoted by the lowest bidder is higher than available funds
- ✗ 4. the department wishes for a re-advertisement, without any cause

Q.86 In railway track construction, which method is most commonly used for laying new tracks?

Ans
- ✗ 1. Cut-and-Cover Method
- ✗ 2. Incremental Launching
- ✗ 3. Trenchless Method
- ✓ 4. Telescopic Method

Q.87 Which of the following options authorises the engineering department to take up the work under consideration and start preparing preliminary designs?

Ans
- ✗ 1. Environmental sanction
- ✓ 2. Administrative sanction
- ✗ 3. Expenditure sanction
- ✗ 4. Technical sanction

Q.88 Epoxy injection method is used to effectively repair which of the following types of cracks?

Ans
- ✔ 1. Dormant cracks
- ✘ 2. Expanding cracks
- ✘ 3. Moving cracks
- ✘ 4. Active cracks

Q.89 What type of pump is commonly used for conveying Ready Mix Concrete (RMC)?

Ans
- ✘ 1. Submersible pump
- ✔ 2. Piston pump
- ✘ 3. Centrifugal pump
- ✘ 4. Gear pump

Q.90 What is the recommended slump range for beams and slabs requiring medium workability?

Ans
- ✘ 1. 25 to 50 mm
- ✔ 2. 50 to 100 mm
- ✘ 3. 30 to 45 mm
- ✘ 4. 25 to 75 mm

Q.91 If consistency index of a soil is more than 1, the consistency stage of soil is:

Ans
- ✘ 1. either semi-solid or plastic
- ✔ 2. either semi-solid or solid
- ✘ 3. solid only
- ✘ 4. plastic only

Q.92 Two forces act in the same plane. Force 1 is 40 kN towards the right, and Force 2 is 30 kN downward. The angle between the two forces is 90°. What is the magnitude of the resultant force?

Ans
- ✔ 1. 50 kN
- ✘ 2. 70 kN
- ✘ 3. 5 kN
- ✘ 4. 60 kN

Q.93 A flooring made of small pieces of broken tiles or marble, arranged in desired patterns on a cementing layer is called _____ flooring.

Ans
- ✘ 1. terrazzo
- ✘ 2. inlay
- ✘ 3. patterned oxide
- ✔ 4. mosaic

Q.94 Which component of an elevator system is responsible for regulating its speed and ensuring smooth stopping during normal operations?

Ans
- ✘ 1. Guide rails
- ✘ 2. Counterweight
- ✔ 3. Traction motor
- ✘ 4. Governor

Q.95 Which of the following is NOT commonly used in pre-fabricated construction?

Ans
- ✘ 1. Concrete Pump
- ✘ 2. Tower Crane
- ✔ 3. Tunneling Machine
- ✘ 4. Forklift

Q.96 **Which type of window is hinged at the top and opens outward?**

Ans

✔ 1. Awning window

✘ 2. Pivot window

✘ 3. Casement window

✘ 4. Sliding window

Q.97 **What is the vertical joint on the face of the wall that lies directly above the vertical joints in alternate courses in stone masonry called?**

Ans

✘ 1. Bed joint

✔ 2. Perpend

✘ 3. Quoin joint

✘ 4. Riser

Q.98 **A block of weight 50 N is resting on a horizontal surface. The coefficient of friction between the block and the surface is 0.4. What is the maximum frictional force before the block starts moving?**

Ans

✘ 1. 25 N

✔ 2. 20 N

✘ 3. 10 N

✘ 4. 5 N

Q.99 **According to IS 456:2000, under what conditions can the shear strength of an RC section near the supports or concentrated load be enhanced?**

Ans

✘ 1. When the considered beam section is farther from the face of a support or concentrated load than twice the effective depth (2d)

✘ 2. Enhancement is not permitted near the supports

✘ 3. When the considered beam section is exactly at a distance equal to the effective depth (d) from the support

✔ 4. When the considered beam section is closer to the face of a support or concentrated load than twice the effective depth (2d) of the beam

Q.100 **What type of machine is used for grading and leveling large areas?**

Ans

✘ 1. Scraper

✘ 2. Bulldozer

✔ 3. Grader

✘ 4. Excavator