RRB JE 2024 CBT-2 Civil

Junior Engineer · Civil Engineering · CEN 03/2024 · CBT-2 · Question Paper

English

All 3 Shifts (Sets) · Official Answer Key

About this Compilation

This booklet contains all **3 shift papers** of the **RRB JE 2024 CBT-2 (Civil Engineering)** examination in **English**, with the correct option marked as per the official answer key.

✓ Correct option (highlighted green)

1 of these 450 questions are shown in English. RRB did not release them in English to any candidate whose response sheet we could reach, so the official English version is printed instead and marked with an ENGLISH chip. Nothing here is machine translated.

How to use

- Use the **Index** page to jump directly to any set (clickable).
- Questions appear section by section in the order of the paper, numbered 1 onward.
- Diagram and wide-table questions appear at full width at the end of their section.
- The correct answer is highlighted in green with a tick.

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Index — All Sets (click to open)

Set 1 — 22 Apr 2025, 9:00 AM - 11:00 AM

Set 2 — 22 Apr 2025, 2:30 PM - 4:30 PM

Set 3 — 04 Jun 2025, 9:00 AM - 11:00 AM

RRB JE 2024 CBT-2 Civil Set 1 · 22 Apr 2025 · 9:00 AM - 11:00 AM · English

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General Abilities

50 Questions • Answer Key

Q1 General Abilities

What is the primary function of a computer firewall?

- A. To speed up internet connectivity
- B. To detect and remove computer viruses
- C. To store user passwords securely
- D. To prevent unauthorised access to a private network ✓

Q2 General Abilities

A concave lens has a focal length of −2 cm. What is its power?

- A. 0.5 D
- B. −0.5 D
- C. 25 D
- D. −50 D ✓

Q3 General Abilities

Which of the following elements has an atomic number of 8?

- A. Carbon
- B. Hydrogen
- C. Nitrogen
- D. Oxygen ✓

Q4 General Abilities

Which formula should be entered in cell C2 to multiply the values of cells A2 and B2 in Excel?

- A. =A2+B2
- B. =A2-B2
- C. =MULTIPLY(A2,B2)
- D. =A2*B2 ✓

Q5 General Abilities

Why do covalent compounds generally have low melting and boiling points?

- A. They have strong electrostatic forces.
- B. They contain metallic bonds.
- C. They have a rigid lattice structure.
- D. They have weak intermolecular forces. ✓

Q6 General Abilities

Who among the following Indian female cricketers won the Best International Cricketer Award (Women) at the BCCI Naman Awards 2025?

- A. Jhulan Goswami
- B. Mithali Raj
- C. Smriti Mandhana ✓
- D. Harmanpreet Kaur

Q7 General Abilities

What does LAN stand for?

- A. Limited Access Node
- B. Linked Access Network
- C. Local Area Network ✓
- D. Large Area Network

Q8 General Abilities

A metal wire is stretched, but it does not break easily. This property is known as:

- A. hardness
- B. malleability
- C. brittleness
- D. ductility ✓

Q9 General Abilities

A car moving at a constant speed of 123 km/hr along a straight road is an example of _____.

- A. random motion
- B. rotational motion
- C. uniform motion ✓
- D. non-uniform motion

Q10 General Abilities

Which of the following options is NOT a greenhouse gas?

- A. Methane
- B. Carbon dioxide
- C. Carbon tetrachloride ✓
- D. Nitrous oxide

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Q11 General Abilities

Which of the following will increase the heat produced by a heating element?

A. Decreasing the applied voltage

B. Using a wire of lower resistance

C. Using a material with high conductivity

D. Increasing the current flowing through the wire ✓

Q12 General Abilities

The President has the power to dissolve which house of Parliament?

A. Legislative Assembly

B. Rajya Sabha only

C. Both Rajya Sabha and Lok Sabha

D. Lok Sabha only ✓

Q13 General Abilities

What happens to the pH of pure water when a few drops of lemon juice are added?

A. The pH decreases ✓

B. The pH becomes neutral

C. The pH remains the same

D. The pH increases

Q14 General Abilities

A solution is prepared by dissolving 40 g of NaCl in 200 g of water. What is the mass per cent of NaCl in the solution?

A. 25%

B. 16.67% ✓

C. 20%

D. 45%

Q15 General Abilities

In an aquatic ecosystem, the phenomenon of biomagnification can best be studied in the case of _____.

A. chlorine

B. DDT ✓

C. organochlorine

D. phosphates

Q16 General Abilities

Who among the following established the Bengal Chemical Swadeshi Stores?

A. Surendranath Banerjee

B. Acharya PC Ray ✓

C. BG Tilak

D. Dadabhai Naoroji

Q17 General Abilities

Who among the following referred to the Directive Principles as the 'life-giving provisions' of the Constitution of India?

A. HM Seervai

B. LM Singhvi ✓

C. Ivor Jennings

D. BR Ambedkar

Q18 General Abilities

Which German optical technology firm inaugurated its first Global Capability Centre in Bengaluru in November 2024, with plans to double its workforce within three years?

A. Leica

B. Carl Zeiss AG ✓

C. Jenoptik

D. Schneider Kreuznach

Q19 General Abilities

The wavelength of ultraviolet radiations which is most powerful and causes damage to the DNA is ____.

A. UV-D

B. UV-C

C. UV-A

D. UV-B ✓

Q20 General Abilities

Which country proposed the idea of holding a United Nations conference on human interactions with the environment in 1968?

A. Sweden ✓

B. United States

C. France

D. Canada

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Q21 General Abilities

For the protection and improvement of the environmental quality, the Environment Protection Act came into force in the year _____.

A. 1992
B. 1972
C. 1984
D. 1986 ✓

Q22 General Abilities

What is the general orientation of the Himalayan ranges in the northwestern part of India?

A. Northwest to Southeast ✓
B. Northeast to Southwest
C. East-South
D. South-North

Q23 General Abilities

Which of the following correctly differentiates mixtures and compounds?

Feature

A. Option D (Formation) is correct
B. Option C (Properties) is correct
C. Option A (Separation) is correct ✓
D. Option B (Composition) is correct

Q24 General Abilities

The kinetic energy of an object is derived using which of the following equations of motion?

A. $v^2 - u^2 = 2as$ ✓
B. $v = u + at$
C. $s = ut + ½ at^2$
D. $a = (v - u) / t$

Q25 General Abilities

Due to global warming, the temperature of the earth has increased by _____

A. 0.8°C
B. 0.5°C
C. 0.7°C
D. 0.6°C ✓

Q26 General Abilities

Which of the following MS Excel functions is used to convert a numeric value into a text with a specific format?

A. FORMAT()
B. VALUE()
C. TEXT() ✓
D. NUMBERTOTEXT()

Q27 General Abilities

Which type of RAM is faster and DOES NOT require refreshing?

A. Flash Memory
B. ROM
C. DRAM
D. SRAM ✓

Q28 General Abilities

Who is known as the leader of the Green Revolution in India?

A. Dr. Rajendra Prasad
B. C Subramaniam
C. Tribhuvandas Kishibhai Patel
D. Prof. MS Swaminathan ✓

Q29 General Abilities

Which of the following was NOT an artisan guild during the Mauryan period?

A. Astrologers ✓
B. Bankers and Merchants
C. Carpenters
D. Potters

Q30 General Abilities

What is the primary function of a firewall tool in a computer network?

A. To speed up internet connections
B. To store data securely
C. To monitor and control incoming and outgoing network traffic ✓
D. To detect and remove viruses

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Q31 General Abilities

Where can one find the option to change a PowerPoint template?

A. Insert → Themes

B. View → Slide Master

C. Home → Layout

D. Design → Themes ✓

Q32 General Abilities

A ball of mass 50 grams is moving with a velocity of 15 m/s. What is its kinetic energy?

A. 1.875 J

B. 7.500 J

C. 5.625 J ✓

D. 3.750 J

Q33 General Abilities

In which of the following events did Deepthi Jeevanji set a world record at the 2024 World Para Athletics Championships?

A. 100 metres T20

B. 400 metres T20 ✓

C. 200 metres T20

D. 600 metres T20

Q34 General Abilities

What happens when you click on the 'Forward' button in an email?

A. A blank email opens.

B. The email is permanently deleted.

C. The email is automatically sent to all contacts.

D. The original message is copied into a new email draft. ✓

Q35 General Abilities

Which operating system is known for its open-source nature and community-driven development for desktops and laptops?

A. iOS

B. macOS

C. Linux ✓

D. Windows

Q36 General Abilities

Which of the following is NOT toxic to non-target organisms in the soil?

A. Herbicides

B. Organic fertilisers ✓

C. Pesticides

D. Fungicides

Q37 General Abilities

Radiations that are emitted from nuclear wastes are known to cause _____ at a high rate.

A. diseases

B. mutations ✓

C. syndromes

D. emotional defects

Q38 General Abilities

Which of the following is NOT a source of collection of municipal solid waste?

A. Radioactive waste ✓

B. Waste from hospitals

C. Waste from schools

D. Waste from homes

Q39 General Abilities

An object is placed 15 cm in front of a convex lens of focal length 25 cm. The image distance will be _____.

A. 17.5 cm

B. −10.0 cm

C. −37.5 cm ✓

D. −9.37 cm

Q40 General Abilities

In January 2025, India launched the NVS-02 satellite to strengthen which of the following navigation systems?

A. Galileo

B. Global Navigation Satellite System (GLONASS)

C. Global Positioning System (GPS)

D. Navigation with Indian Constellation (NavIC) ✓

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Q41 General Abilities

Which of the following bridges is constructed over the Brahmaputra River in India?

A. Mahatma Gandhi Setu

B. Dhola-Sadiya Bridge ✓

C. Pamban Bridge

D. Howrah Bridge

Q42 General Abilities

Who among the following developed the notation system for Hindustani classical music?

A. Pandit Ravi Shankar

B. Ustad Amjad Ali Khan

C. Pandit Vishnu Narayan Bhatkhande ✓

D. Ustad Bismillah Khan

Q43 General Abilities

Electricity production is categorised under which of the following economic sectors?

A. Quaternary sector

B. Secondary sector ✓

C. Primary sector

D. Tertiary sector

Q44 General Abilities

The main reason for which we are dependent on air is our _____.

A. digestion

B. osmoregulation

C. respiration ✓

D. excretion

Q45 General Abilities

Which function key is used to move text or graphics in a document?

A. F12

B. F1

C. F2 ✓

D. F5

Q46 General Abilities

An alloy is considered a homogeneous mixture because:

A. its components can be separated by filtration

B. its components are chemically combined in fixed proportions

C. it exhibits uniform composition throughout ✓

D. it contains two or more phases

Q47 General Abilities

The atomic mass of sulphur is 32 u, and sulphur exists as S_8 molecules. What is the molecular mass of sulphur?

A. 256 u ✓

B. 64 u

C. 128 u

D. 32 u

Q48 General Abilities

A sound wave with a low frequency will have _____.

A. a high pitch

B. a low amplitude

C. a low pitch ✓

D. a short wavelength

Q49 General Abilities

The power to issue an ordinance when Parliament is NOT in session is given to the President under which Article?

A. Article 72

B. Article 110

C. Article 356

D. Article 123 ✓

Q50 General Abilities

The people of _____ were famously involved in execution of the Chipko movement.

A. Assam

B. Gujarat

C. Delhi

D. Garhwal Himalayas ✓

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Q51 Technical Abilities

Cracks in buildings due to atmospheric drying of moisture in building materials cause:

A. structural cracks
B. thermal cracks
C. shrinkage cracks ✓
D. settlement cracks

Q52 Technical Abilities

The contractors profit added in analysis of rates is:

A. 20% of the total material and labour cost
B. 20% of the total material cost
C. 10% of total material and labour cost ✓
D. 10% of total material cost

Q53 Technical Abilities

A simply supported beam of 10 m carries a uniformly distributed load (UDL) of 5 kN/m over its entire span. What is the reaction force at each support?

A. 30 kN
B. 50 kN
C. 20 kN
D. 25 kN ✓

Q54 Technical Abilities

While painting new wood work, the process of filling up of nail holes, dents, and cracks with putty is known as _____.

A. caulking
B. knotting
C. stopping ✓
D. blocking

Q55 Technical Abilities

Which prefabricated element is structurally designed to resist lateral loads in high-rise buildings?

A. Precast column
B. Shear wall panel ✓
C. Lintel beam
D. Hollow core slab

Q56 Technical Abilities

What is the plaster finish, in which ornamental patterns or textured surfaces are made on the final coat of plaster using suitable tools, called?

A. Textured finish ✓
B. Spatter dash finish
C. Rough cast finish
D. Smooth cast finish

Q57 Technical Abilities

The first paint coat on a new surface that fills the pores and facilitates adhesion of subsequent paint-coats to a surface is called _____.

A. under coat
B. finishing coat
C. priming coat ✓
D. putty coat

Q58 Technical Abilities

Which of the following waterproofing methods is often used for external surfaces of concrete structures?

A. Root barriers
B. Cavity wall construction
C. Integral waterproofing
D. Membrane waterproofing ✓

Q59 Technical Abilities

Which of the following documents will include name of authorities inviting tender, name of work and its location, time of completion, date, time and place of tender?

A. Tender opening form
B. Tender notice ✓
C. Muster roll
D. Contract document

Q60 Technical Abilities

Which type of wall is primarily used for partitioning internal spaces?

A. Load-bearing wall
B. Partition wall ✓
C. Cavity wall
D. Shear wall

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Q61 Technical Abilities

The collar beam in a collar beam roof performs which of the following functions?

A. It forms an extension to the eaves.

B. It prevents rafters from bending. ✓

C. It ties the wall plates together.

D. It supports the ridge beam.

Q62 Technical Abilities

What is the primary difference between a lift and an elevator in building terminology?

A. Lifts are manual; elevators are automatic.

B. Lifts are vertical; elevators are inclined.

C. Lifts are for goods; elevators are for passengers.

D. There is no functional difference. ✓

Q63 Technical Abilities

What is the optimum moisture content (OMC) range for compacting cohesive soils, as per IS 2720 (Part 8) - 1983?

A. 12–16% ✓

B. 8–12%

C. 15–20%

D. 10–14%

Q64 Technical Abilities

Match the following railway zones with their headquarters.

Railway Zones Headquarters

A. Northern Railway 1. Kolkata
B. Western Railway 2. Mumbai
C. Eastern Railway 3. New Delhi
D. Southern Railway 4. Chennai

A. A-3, B-2, C-1, D-4 ✓

B. A-1, B-3, C-2, D-4

C. A-4, B-1, C-3, D-2

D. A-3, B-1, C-2, D-4

Q65 Technical Abilities

Bitumen is used in the all of the following, EXCEPT:

A. roofing

B. waterproofing

C. turfing ✓

D. damp proofing

Q66 Technical Abilities

Which type of support allows only rotational movement but resists both horizontal and vertical forces?

A. Roller support

B. Fixed support

C. Pinned support ✓

D. Free support

Q67 Technical Abilities

The egg-shaped sewer is placed, such that:

A. the smaller base has to support the weight of the upper broader section ✓

B. the velocity of flow is always lesser than the velocity of flow in hydraulically equivalent circular sewer

C. the base and upper section has the same area and the middle section has large area

D. the larger base has to support the weight of the upper smaller section

Q68 Technical Abilities

What is the initial setting time of Portland-Pozzolana Cement when tested by the Vicat apparatus method as described in IS 4031 (Part 5):1988?

A. 10 minutes

B. 40 minutes

C. 30 minutes ✓

D. 60 minutes

Q69 Technical Abilities

In RCC beams, which type of reinforcement is provided to resist shear?

A. Longitudinal bars

B. Lateral ties

C. Compression bars

D. Stirrups ✓

Q70 Technical Abilities

A good average value of the crushing strength of aggregates, suitable for concrete, is _____.

A. 40-60 MPa

B. 100-300 MPa ✓

C. 80-100 MPa

D. 60-80 MPa

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Q71 Technical Abilities

Which of the following correctly represents the ultimate tensile force (T_u) in the tensile reinforcement (A_s) of a singly reinforced beam at the ultimate limit state of flexure, considering the characteristic yield strength of steel (f_y)?

A. $T_u = 0.67\ f_y\ A_s$

B. $T_u = f_y\ A_s$

C. $T_u = 0.5\ f_y\ A_s$

D. $T_u = 0.87\ f_y\ A_s$ ✓

Q72 Technical Abilities

The plinth area of a building is measured at which level?

A. Top of the damp-proof course

B. Top of the plinth

C. Mid-level of the foundation

D. Ground floor level ✓

Q73 Technical Abilities

Which of the following types of glass fibre is most commonly used for reinforcement in construction?

A. S - glass

B. C - glass

C. E - glass ✓

D. A - glass

Q74 Technical Abilities

Units of measurement for a drawing in AutoCAD can be set up using the command:

A. Scale

B. Grid

C. Units ✓

D. Limits

Q75 Technical Abilities

Which of the following commands is used to create a surface in Autodesk Civil 3D?

A. Define Surface

B. Surface from Objects

C. Create Surface ✓

D. Surface Create

Q76 Technical Abilities

Which of the following statements is NOT true with respect to chemical grouting?

A. Can be employed to treat very fine fractures in moist environments.

B. Does not require a high level of skill for application ✓

C. The chemicals react with water to form gel/solid precipitate.

D. Can be used to treat narrow concrete cracks.

Q77 Technical Abilities

Which of the following plastics is used in fiber-reinforced composites for bridges and structural applications?

A. Epoxy resin ✓

B. Acrylonitrile Butadiene Styrene

C. Nylon

D. Acrylic

Q78 Technical Abilities

The drawing that gives information about the placement of rooms in a building along with their length and width measurements is known as _____.

A. building elevation

B. aerial view

C. building section

D. building plan ✓

Q79 Technical Abilities

Which type of window consists of two sashes sliding vertically?

A. Fixed window

B. Casement window

C. Double-hung window ✓

D. Sliding window

Q80 Technical Abilities

A drawing that shows the frontal and side appearance of a building is known as _____.

A. building elevation ✓

B. aerial view

C. building section

D. building plan

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Q81 Technical Abilities

For an unsymmetrical angle section, the principal axes of inertia pass through which point?

- A. The centroid of the section ✓
- B. The midpoint of the longer leg
- C. The midpoint of the shorter leg
- D. The intersection of the legs

Q82 Technical Abilities

Clay possesses the highest strength in which of the following conditions?

- A. When with kaolinite at room temperatures
- B. When at liquid limit
- C. When at shrinkage limit
- D. When heated to very high temperatures, up to redness ✓

Q83 Technical Abilities

Which of the following equipment is essential for the well-point system?

- A. Reciprocating pump
- B. Centrifugal pump ✓
- C. Sump pump
- D. Jet pump

Q84 Technical Abilities

_____ is used for filling in cracks, gaps, cavities, etc. for the purpose of repairing and waterproofing.

- A. Ramming
- B. Curing
- C. Grouting ✓
- D. Tamping

Q85 Technical Abilities

Drawing files generated in the AutoCAD software have which of the following file extensions?

- A. .XML
- B. .DOC
- C. .PSD
- D. .DWG ✓

Q86 Technical Abilities

Which of the following best explains why rail transport is preferred over road transport for bulk goods movement?

- A. Rail transport is always faster than road transport for all types of goods.
- B. Rail transport requires more energy due to heavier infrastructure.
- C. Rail transport require less energy to haul a unit load over a unit distance. ✓
- D. Rail transport is only suitable for short-distance bulk movement.

Q87 Technical Abilities

Which of the following factors determines the frequency of a concrete vibrator?

- A. The size of the aggregate in the mix
- B. The ambient temperature
- C. The type of cement used
- D. The water-cement ratio ✓

Q88 Technical Abilities

Efflorescence on plastered surface causes which of the following effects to appear?

- A. Oozing out of a viscous liquid
- B. Rust stains or patches
- C. Whitish crystalline substance ✓
- D. Growth patches of organic matter

Q89 Technical Abilities

Which of the following phenomena occurs due to shear strains modifying bending stresses in the flange and causes the sections to warp?

- A. Web crippling
- B. Torsional instability
- C. Shear lag ✓
- D. Local buckling

Q90 Technical Abilities

In the plastering of surfaces with three coats, the second coat of plaster applied is also known as _____.

- A. rendering coat
- B. setting coat
- C. under coat
- D. floating coat ✓

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Q91 Technical Abilities

The per cubic metre rates are ₹3,000 per cum for stone ballast, ₹2,000 per cum for coarse sand and ₹10,000 per cum for cement. For production of 10 m^3 of 1 : 3 : 6 cement concrete, the cost will be (to nearest thousand):

A. ₹26,000

B. ₹84,000

C. ₹66,000

D. ₹51,000 ✓

Q92 Technical Abilities

Why must compression reinforcement in a doubly reinforced beam be enclosed by stirrups?

A. To reduce the amount of steel required in compression

B. To increase the slenderness ratio of the beam

C. To prevent buckling and improve ductility by confining the concrete ✓

D. To provide additional strength to the tension reinforcement

Q93 Technical Abilities

In a traverse survey, if the direction of the progress of the survey is _____, then the angles measured in the clockwise direction are directly the _____ angles.

A. clockwise; included

B. counterclockwise; included ✓

C. counterclockwise; excluded

D. clockwise; excluded

Q94 Technical Abilities

Which of the following statements is/are correct about the variation of magnetic declination?

Statement I: Magnetic declination is more at magnetic poles and less at equator.
Statement II: Magnetic declination is more in the summer than in the winter.
Statement III: Magnetic declination is more at night and less in the day.

A. Statement I only ✓

B. Statement II only

C. Statements II and III only

D. Statements I and II only

Q95 Technical Abilities

Slate and laterite are examples of _____.

A. siliceous rock

B. argillaceous and calcareous rocks, respectively ✓

C. calcareous rock

D. argillaceous rock

Q96 Technical Abilities

Even when the normal forces are reduced to zero, some part of shear strength is still left on the soil. This strength is due to:

A. true cohesion ✓

B. interlocking friction

C. sliding friction

D. apparent cohesion

Q97 Technical Abilities

The contract in which the contractor needs to complete the work within a fixed sum and fixed time, irrespective of the qualities of different items, is:

A. Schedule contract

B. Lump sum contract ✓

C. Fixed contract

D. Item rate contract

Q98 Technical Abilities

Which type of wall is designed to resist lateral forces, like wind or earthquakes?

A. Partition wall

B. Cavity wall

C. Load-bearing wall

D. Shear wall ✓

Q99 Technical Abilities

Which of the following is one of the standard gauges used in Indian Railways for Broad Gauge (BG) tracks?

A. 1676 mm ✓

B. 1000 mm

C. 1220 mm

D. 1435 mm

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Q100 Technical Abilities

For a built-up column with lacing, what percentage of the axial load is considered as the transverse shear force (V_t) that the lacing system must resist?

A. 3.0%

B. 1.5%

C. 2.0%

D. 2.5% ✓

Q101 Technical Abilities

In which of the following types of estimates for buildings will the running meter cost of walls be required?

A. Linear method

B. Approximate quantity method ✓

C. Plinth Area method

D. Cubical method

Q102 Technical Abilities

In structural analysis, Clapeyron's Theorem of Three Moments is primarily used to:

A. analyse the shear forces in a cantilever beam

B. calculate the bending moments at the supports of a continuous beam ✓

C. evaluate the torsional stresses in circular shaft

D. determine the deflection at the midpoint of a simply supported beam

Q103 Technical Abilities

A plan that has detailed drawings of building foundation is known as _____.

A. survey plan

B. basement plan

C. ground level plan

D. foundation plan ✓

Q104 Technical Abilities

In a Symons rain gauge, the collected rainfall is measured using:

A. a graduated scale ✓

B. a rotating drum

C. a pressure sensor

D. a digital display

Q105 Technical Abilities

Which of the following prefabrication techniques is used in bridge construction?

A. Modular Construction

B. Panelised Construction

C. Formwork-Free Construction

D. Precast Segmental Construction ✓

Q106 Technical Abilities

What is the primary function of a fish plate in rail joints?

A. To join two rails together ✓

B. To hold the sleepers together

C. To provide better track drainage

D. To reduce track curvature

Q107 Technical Abilities

Which of the following is the primary reason for adopting deep foundations over shallow foundations?

A. Faster construction speed

B. Low construction cost

C. Poor soil bearing capacity at shallow depths ✓

D. High water table

Q108 Technical Abilities

What is air seasoning for timber also called?

A. Artificial seasoning

B. Kiln seasoning

C. Controlled seasoning

D. Natural seasoning ✓

Q109 Technical Abilities

In structural applications, what is a potential drawback of using High Performance Concrete?

A. Increased susceptibility to chemical reactions in marine environments

B. Difficulty in achieving proper compaction due to high stiffness ✓

C. Lower bond strength with reinforcement

D. Lower strength compared to conventional concrete

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Q110 Technical Abilities

The plastic limit of a soil is 20% and its liquid limit is 50%. If its flow index is 30%, find the value of the toughness index of the soil.

A. 0.5

B. 3

C. 1 ✓

D. 1.5

Q111 Technical Abilities

For a column subjected to bending and compression, the maximum slenderness ratio as per IS 800:2007 is:

A. 250

B. 300

C. 200

D. 180 ✓

Q112 Technical Abilities

Which type of excavation is used for laying large pipelines?

A. Open excavation

B. Rock excavation

C. Muck excavation

D. Trench excavation ✓

Q113 Technical Abilities

Which of the following statements about friction is correct?

A. Kinetic friction is greater than static friction.

B. Friction does not depend on the normal reaction.

C. Friction is independent of the surface area in contact. ✓

D. Friction force does not depend on the nature of surfaces.

Q114 Technical Abilities

What is the correct method to determine the moment of inertia of a symmetrical T-section about its centroidal axis?

A. Use the parallel axis theorem to sum the moments of inertia of the flange and web ✓

B. Assume it behaves as a solid rectangular section of the same overall dimensions

C. Consider only the moment of inertia of the flange, as it dominates the shape

D. Use the perpendicular axis theorem directly

Q115 Technical Abilities

The combined effects of the earth's curvature and refraction is eliminated in _____.

A. longitudinal sectioning

B. cross sectioning

C. reciprocal levelling ✓

D. profile levelling

Q116 Technical Abilities

When rainfall intensity is greater than infiltration capacity indicated by the infiltration capacity curve, the excess water contributes to:

A. evapotranspiration

B. groundwater recharge

C. surface runoff ✓

D. evaporation

Q117 Technical Abilities

Why is the Slope-Deflection Method considered more efficient than the Force Method for analysing indeterminate structures?

A. It is limited to structures with low degrees of indeterminacy

B. It involves fewer equations and unknowns, making it easier to solve ✓

C. It cannot be used for beams and frames

D. It requires writing compatibility equations for unknown forces

Q118 Technical Abilities

If A_v is the area of voids in cross-section and A is the total area of cross-section, the relation between seepage velocity (v_s) and superficial velocity (v) is correctly represented as:

A. $v_s = AvA_v$

B. $v = A_v v_s/A$ ✓

C. $v_s = A_v v/A$

D. $v = Av_sA_v$

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Q119 Technical Abilities

The ratio of total covered area of all floors to the area of the plot on which the building is to be built is known as:

A. carpet area %

B. ground coverage

C. built up area %

D. floor area ratio ✓

Q120 Technical Abilities

Which of the following factors does NOT affect the moment of inertia of a plane lamina?

A. The axis about which it is rotating

B. The mass of the body

C. The angular velocity of rotation ✓

D. The shape and size of the body

Q121 Technical Abilities

What is the fire point test conducted on Bitumen also known as?

A. Softening point test

B. Flash point test

C. Penetration test

D. Pensky Marten test ✓

Q122 Technical Abilities

As per IS 800: 2007, which type of beam does NOT need a lateral torsional buckling check?

A. Plate girders

B. Beams bending about their major axis with λ_{LT} more than 0.4

C. I-section beams with a long span

D. Hollow rectangular or tubular sections ✓

Q123 Technical Abilities

Which of the following is the SI unit of specific volume?

A. kg/m^3

B. N/m^2

C. m^3/kg ✓

D. m^2/N

Q124 Technical Abilities

What is a good practice to follow when mixing concrete in hot weather?

A. Use warm water for mixing.

B. Add large amount of fine aggregate to the mix.

C. Use cold water to reduce the temperature of the mix. ✓

D. Add large amount of cement to the mix.

Q125 Technical Abilities

As per IS 2296-1982, water is classified into five categories. Which of the following does Category E represent?

A. Surface water for drinking

B. Surface water for irrigation ✓

C. Surface water for aquaculture

D. Surface water for outdoor bathing

Q126 Technical Abilities

Raft foundations are recommended when:

A. the building is constructed on a rocky surface

B. load is uniformly distributed

C. soil has a high bearing capacity

D. differential settlement is to be minimised ✓

Q127 Technical Abilities

Which type of shoring is used to support unsafe walls of a building during its repair?

A. Flying shoring

B. Dead shoring

C. Raking shoring ✓

D. Cantilever shoring

Q128 Technical Abilities

When two walls meet at right angles, which of the following bonds is generally used to maintain structural strength?

A. English bond ✓

B. Header bond

C. Stretcher bond

D. Flemish bond

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Q129 Technical Abilities

Which type of chemical is typically used in chemical rebar anchoring?

- A. Cement slurry
- B. Lime mortar
- C. Acrylic paint
- D. Epoxy resin ✓

Q130 Technical Abilities

As per IS 1200 Part I, the measurement of:

- A. length shall be done to nearest 1 m, areas to nearest 1 m^2 and volume to nearest 1 m^3
- B. length shall be done to nearest 0.01 m, areas to nearest 0.01 m^2 and volume to nearest 0.001 m^3
- C. length shall be done to nearest 0.1 cm, areas to nearest 0.1 cm^2 and volume to nearest 0.1 cm^3
- D. length shall be done to nearest 0.01 m, areas to nearest 0.01 m^2 and volume to nearest 0.01 m^3 ✓

Q131 Technical Abilities

In prefabricated buildings, which joint type is best for absorbing movement due to thermal expansion?

- A. Expansion joint ✓
- B. Riveted joint
- C. Threaded joint
- D. Welded joint

Q132 Technical Abilities

According to the Indian Road Congress(IRC73-1980), in the calculation of Overtaking Sight Distance (OSD), the reaction time 't' of the driver is assumed to be:

- A. 1 second
- B. 3 seconds
- C. 2 seconds ✓
- D. 5 seconds

Q133 Technical Abilities

Which of the following statements is correct with respect to the difference between hydrostatics and hydrodynamics?

- A. Hydrostatics focuses on turbulent flow, while hydrodynamics focuses on laminar flow.
- B. Hydrostatics deals with only compressible fluids, while hydrodynamics deals with only incompressible fluids.
- C. Hydrostatics ignores pressure effects, while hydrodynamics considers them.
- D. Hydrostatics studies fluid at rest, while hydrodynamics studies fluid in motion. ✓

Q134 Technical Abilities

The working or drawing area in the AutoCAD software is termed as _____.

- A. Layout Space
- B. Paper Space
- C. Screen Space
- D. Model Space ✓

Q135 Technical Abilities

Which type of soil is commonly used for the core of an embankment to minimise seepage?

- A. Sand
- B. Clay ✓
- C. Silty sand
- D. Gravel

Q136 Technical Abilities

The Moment of Resistance (M_R) in a beam is defined as:

- A. the product of shear force and bending moment
- B. the internal moment developed due to bending stresses ✓
- C. the sum of shear forces in the beam
- D. the external moment applied to the beam

Q137 Technical Abilities

Which structural element is placed directly above a window to bear the load of the wall above?

- A. Chejja
- B. Lintel ✓
- C. Sill
- D. Cornice

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Q138 Technical Abilities

According to IS 456:2000, the maximum compressive strain in concrete under axial loading at the limit state of collapse is specified as _____.

- A. 0.002 ✓
- B. 0.003
- C. 0.0015
- D. 0.0025

Q139 Technical Abilities

Which of the following is true with respect to non-structural cracks?

- A. Result in extensive cracking of foundations, slabs, etc.
- B. They are caused by atmospheric variations on building materials. ✓
- C. They are a threat to the structural stability of a building.
- D. They are usually very difficult to repair and rectify.

Q140 Technical Abilities

The formation of hairline cracks on a plastered surface is called _____.

- A. splitting
- B. crazing ✓
- C. blistering
- D. cracking

Q141 Technical Abilities

The sewerage system in which the society's waste is carried in buckets or carts is called:

- A. conservancy system ✓
- B. bucket system
- C. water carriage system
- D. hygienic system

Q142 Technical Abilities

Wool, jute, asbestos are classified as _____.

- A. animal fibres
- B. mineral fibres
- C. man-made fibres
- D. natural fibres ✓

Q143 Technical Abilities

What is the primary mechanism by which a hydraulic pump moves fluid?

- A. By using gravity to push the fluid through the system
- B. By creating a vacuum to draw fluid in and then pressurising it ✓
- C. By generating an electric charge to attract the fluid
- D. By using thermal expansion of the fluid

Q144 Technical Abilities

Which of the following types of junction is formed when two walls intersect at an acute angle?

- A. Skew junction
- B. Lap junction
- C. Mitred junction ✓
- D. Butt junction

Q145 Technical Abilities

Which of the following options is used to enhance the alignment and strength of adjoining stones in stone masonry?

- A. Key joint
- B. Recessed joint
- C. Dowel joint ✓
- D. Flush joint

Q146 Technical Abilities

According to the Parallelogram Law of Forces, the resultant of two forces acting at an angle to each other is represented by:

- A. the perpendicular bisector of the two forces
- B. the sum of their magnitudes
- C. the difference of their magnitudes
- D. the diagonal of the parallelogram formed by the two forces ✓

Q147 Technical Abilities

Restricting the height of masonry constructed per day is a remedial measure to prevent:

- A. lateral pressure on the walls
- B. lateral movement of subsoil
- C. unequal settlement of subsoil
- D. unequal settlement of masonry ✓

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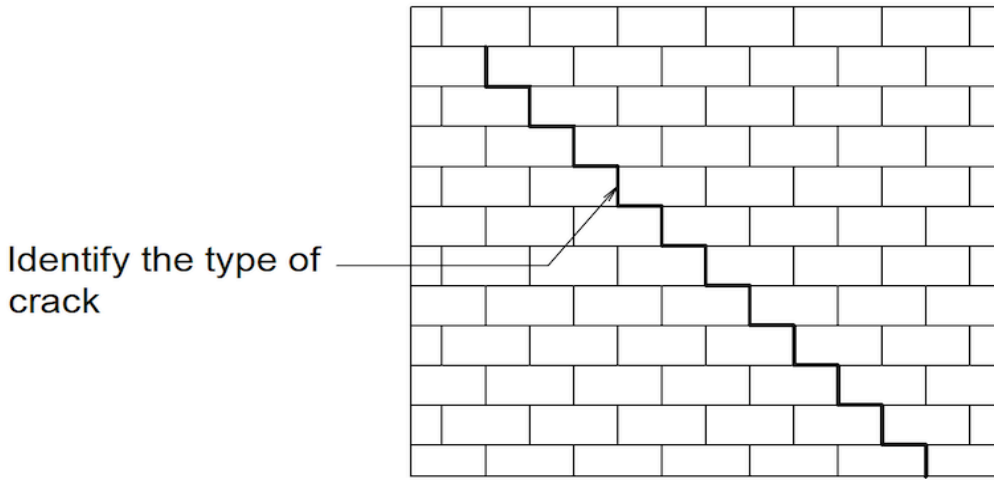
Q148 Technical Abilities

The building crack shown in the figure is a _____ crack.



A. horizontal

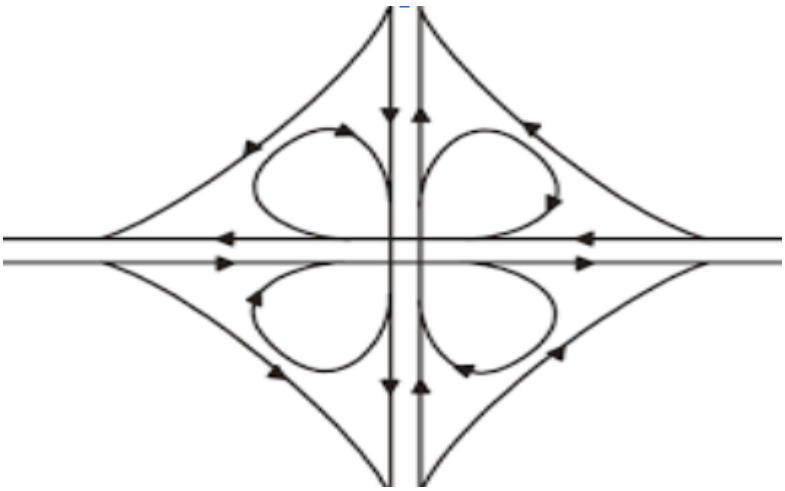
B. diagonal ✓

C. vertical

D. toothed

Q149 Technical Abilities

The given figure shows which type of interchanges under grade separated intersection?



A. Full coverage leaf ✓

B. Partial coverage leaf

C. Rotary

D. Diamond

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Q150 Technical Abilities

A simply supported beam of 8 m has two vertical point loads: 10 kN at 2 m from the left support, 10 kN at 6 m from the left support. Using the graphical method, what is the approximate reaction at the left support (R_A)?

- **A.** 10 kN ✓
- **B.** 12 kN
- **C.** 8 kN
- **D.** 15 kN

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General Abilities

50 Questions • Answer Key

Q1 General Abilities

Which of the following states is NOT covered under the Atal Bhujal Yojana?

A. Rajasthan
B. Maharashtra
C. Uttar Pradesh
D. Jharkhand ✓

Q2 General Abilities

The Millennium Development Goals (MDGs) aimed to reduce extreme poverty by which year?

A. 2005
B. 2014
C. 2015 ✓
D. 2008

Q3 General Abilities

What does PCB stand for?

A. Printed Circuit Board ✓
B. Peripheral Connection Bus
C. Primary Control Board
D. Processing Circuit Board

Q4 General Abilities

The maximum sound is generated _____.

A. from house chimneys
B. from industrial smoke
C. from vehicular emissions
D. by the take off of a jet plane ✓

Q5 General Abilities

Identify the correct formula for the compound formed between Mg^{2+} and PO_4^{3-} ions.

A. $Mg_3(PO_4)_2$ ✓
B. $MgPO_4$
C. $Mg_2(PO_4)_3$
D. $Mg(PO_4)_3$

Q6 General Abilities

Which of the following correctly explains why clothes dry faster on a windy day?

A. Wind decreases the temperature of the water molecules.
B. Wind removes the water vapour from the clothes' surroundings. ✓
C. Wind reduces the surface area of the clothes.
D. Wind increases the humidity around the clothes.

Q7 General Abilities

The energy that is derived from the use of radioactive isotopes is termed as _____.

A. geothermal energy
B. nuclear energy ✓
C. thermal energy
D. solar energy

Q8 General Abilities

According to the Tendulkar methodology, what was the estimated percentage of people below the poverty line in rural areas in 2011-12?

A. 15.5%
B. 25.7% ✓
C. 20%
D. 27.5%

Q9 General Abilities

The primary agent that helps in the decomposition of biodegradable matter in domestic sewage is _____.

A. bacterium ✓
B. chloride
C. nitrate
D. phosphate

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Q10 General Abilities

The glass panel used in greenhouses is known to retain _____.

A. pH
B. humidity
C. heat ✓
D. rainfall

Q11 General Abilities

The main use of chlorofluorocarbons is in _____.

A. vehicles
B. refrigerants ✓
C. smog
D. chimneys

Q12 General Abilities

The phenomenon of multiple echoes due to repeated reflections is called _____.

A. diffraction
B. reverberation ✓
C. resonance
D. refraction

Q13 General Abilities

The fine powder that is obtained from the modified and recycled form of plastic is called _____.

A. polyblend ✓
B. polyethylene
C. polystyrene
D. polythene

Q14 General Abilities

The Industrial Policy Resolution of 1956 categorised industries into how many groups?

A. Three ✓
B. Seven
C. Five
D. Nine

Q15 General Abilities

The Rudra Veena is predominantly associated with which genre of Hindustani music?

A. Khayal
B. Dhrupad ✓
C. Ghazal
D. Thumri

Q16 General Abilities

Which official in the Gupta administration was responsible for peace and war matters?

A. Sandhi-Vigrahika ✓
B. Mahadandanayaka
C. Vishayapati
D. Mahapratihara

Q17 General Abilities

Which of the following companies announced plans in February 2025 to construct the world's longest undersea cable, aiming to enhance internet connectivity across five continents, with landing points in India?

A. Amazon
B. Meta ✓
C. Microsoft
D. Google

Q18 General Abilities

What is the maximum number of Ministers allowed in the Council of Ministers, including the Prime Minister, as per the 91st Amendment Act?

A. 12% of Lok Sabha strength
B. 15% of Lok Sabha strength ✓
C. 20% of Lok Sabha strength
D. 10% of Lok Sabha strength

Q19 General Abilities

If an object is dropped from rest, what will be its velocity after 15 seconds? ($g = 9.8\ m/s^2$)

A. 145 m/s
B. 143 m/s
C. 149 m/s
D. 147 m/s ✓

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Q20 General Abilities

Inertia depends on which property of an object?

- A. Mass ✓
- B. Acceleration
- C. Shape
- D. Velocity

Q21 General Abilities

Which of the following is a characteristic difference between colloids and true solutions?

- A. True solutions exhibit Brownian motion, but colloids do not.
- B. True solutions have visible solute particles, whereas colloids have invisible dispersed particles.
- C. True solutions have a single-phase system, whereas colloids have a two-phase system. ✓
- D. True solutions show the Tyndall effect, but colloids do not.

Q22 General Abilities

In which of the following regions the Himalayas has the greatest width?

- A. Kashmir ✓
- B. Arunachal Pradesh
- C. Himachal Pradesh
- D. Sikkim

Q23 General Abilities

What is the primary function of the F4 key in MS Excel when editing a cell reference in a formula?

- A. Opens the Find and Replace dialog
- B. Toggles between absolute and relative references ✓
- C. Refreshes the worksheet
- D. Repeats the last action

Q24 General Abilities

What is the first step to securing ones smartphone or tablet?

- A. Turning off mobile data
- B. Installing more apps
- C. Setting a password/PIN-protected lock screen ✓
- D. Using only free Wi-Fi networks

Q25 General Abilities

The practice of Jhum cultivation is prevalent in the _____.

- A. South east
- B. South west
- C. North west
- D. North east ✓

Q26 General Abilities

Which of the following correctly represents the chemical formula of a compound formed by aluminium and sulphate ions?

- A. $Al(SO_4)_3$
- B. $Al_3(SO_4)_2$
- C. $Al_2(SO_4)_3$ ✓
- D. Al_2SO_4

Q27 General Abilities

Which of the following cities hosted the inaugural Kho Kho World Cup in January 2025?

- A. Kolkata
- B. Mumbai
- C. New Delhi ✓
- D. Chennai

Q28 General Abilities

What is the purpose of the Collation option in the Print settings?

- A. To select a custom print range
- B. To print all the pages of a document as a set ✓
- C. To change the printer selection
- D. To adjust the page orientation

Q29 General Abilities

If the absolute refractive index of a medium is less than 1, it means _____.

- A. light travels faster in that medium than in vacuum ✓
- B. the medium absorbs all light
- C. light travels slower in that medium than in vacuum
- D. the medium is a perfect reflector

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Q30 General Abilities

What happens when an acid reacts with a metal oxide?

A. Only water is formed.

B. A salt and water are formed. ✓

C. A salt and hydrogen gas are formed.

D. Only salt is formed.

Q31 General Abilities

What was the main objective of the Extremists during the Indian National Movement?

A. To attain complete independence (Swaraj) ✓

B. To expand the legislative councils

C. To promote British goods in India

D. To bring social reforms

Q32 General Abilities

Which Article provides Ministers the right to participate in parliamentary proceedings but without voting rights?

A. Article 78

B. Article 77

C. Article 53

D. Article 88 ✓

Q33 General Abilities

Dr. BR Ambedkar described which part of the Indian Constitution as its 'novel features', while Granville Austin referred to it as the 'Conscience of the Constitution'?

A. Fundamental Rights

B. Preamble

C. Directive Principles of State Policy ✓

D. Fundamental Duties

Q34 General Abilities

What is India's global military ranking in the 2025 Global Firepower (GFP) index?

A. 4th ✓

B. 3rd

C. 5th

D. 2nd

Q35 General Abilities

What is the shortcut key to start a slideshow from the beginning?

A. Alt + Tab

B. Ctrl + P

C. Shift + F5

D. F5 ✓

Q36 General Abilities

Why does a bee sting cause pain and irritation?

A. The sting injects methanoic acid. ✓

B. The sting contains a strong base.

C. The sting injects a mild sugar solution.

D. The sting releases carbon dioxide gas.

Q37 General Abilities

Which of the following is the correct way to insert a new column in a spreadsheet?

A. Use Ctrl + Z to insert a column.

B. Press Ctrl + X and then Insert.

C. Go to Home > Insert > Insert Sheet Columns. ✓

D. Go to File > New > Column.

Q38 General Abilities

Which of the following is NOT a component of a CPU?

A. Cache Memory

B. Arithmetic Logic Unit (ALU)

C. Control Unit (CU)

D. Hard Disk ✓

Q39 General Abilities

In an electric circuit, what is the correct way to connect an ammeter?

A. In series with the component ✓

B. In parallel with the component

C. In parallel with the source

D. In either series or parallel

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Q40 General Abilities

What is the approximate pH of a neutral salt solution?

- A. Equal to 7 ✓
- B. More than 7
- C. Depends on the temperature
- D. Less than 7

Q41 General Abilities

Which of the following is NOT toxic to non-target organisms in the soil?

- A. Herbicides
- B. Pesticides
- C. Fungicides
- D. Organic fertilisers ✓

Q42 General Abilities

What happens when a computer is put into Sleep mode?

- A. It stores data on the hard drive and powers off.
- B. It keeps the session active in RAM while using minimal power. ✓
- C. It restarts automatically after a few minutes.
- D. It shuts down completely.

Q43 General Abilities

Which of the following CANNOT be considered as a measure to control global warming?

- A. Cutting down use of fossil fuel
- B. Reduction in emission of greenhouse gases
- C. Causing deforestation ✓
- D. Efficiently using energy

Q44 General Abilities

Which state of matter shows the highest expansion when temperature is increased?

- A. Plasma
- B. Solids
- C. Gases ✓
- D. Liquids

Q45 General Abilities

Which defect of vision occurs due to the weakening of ciliary muscles with age?

- A. Astigmatism
- B. Myopia
- C. Hypermetropia
- D. Presbyopia ✓

Q46 General Abilities

What is the net force acting on an object if balanced forces are applied?

- A. Equal to acceleration
- B. Equal to the mass of the object
- C. Infinite
- D. Zero ✓

Q47 General Abilities

What is the primary purpose of using a firewall on a Personal Computer?

- A. To block unauthorised access and protect the computer ✓
- B. To increase storage space
- C. To clean up temporary files
- D. To speed up internet connectivity

Q48 General Abilities

Who among the following inaugurated the 38th National Games held in Dehradun in January 2025?

- A. Pushkar Singh Dhami
- B. Narendra Modi ✓
- C. Anurag Thakur
- D. Droupadi Murmu

Q49 General Abilities

Which of the following is NOT a source of release of smokestacks?

- A. Smelters
- B. Industries
- C. Rivers ✓
- D. Thermal power plants

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Q50 General Abilities

If you want the primary recipient to see that others have received a copy of an email, you should enter their email addresses in the _____ field.

A. Bcc

B. Cc ✓

C. To

D. Subject

Technical Abilities

100 Questions • Answer Key

Q51 Technical Abilities

Which type of stone masonry uses stones of uniform size and shape?

A. Coursed rubble

B. Dry masonry

C. Random rubble

D. Ashlar masonry ✓

Q52 Technical Abilities

Soil is composed of three layers of height 'h' m each. The permeability of layers are k, 2k, and k respectively. The equivalent permeability in vertical direction is:

A. 2k/5

B. 5/2k

C. 6k/5 ✓

D. 4k

Q53 Technical Abilities

The pointing that facilitates easy draining of water is _____.

A. recessed pointing

B. struck pointing ✓

C. beaded pointing

D. tuck pointing

Q54 Technical Abilities

Which fastening system is commonly used with concrete sleepers in Indian Railways?

A. Fish Plate

B. Fang Bolt

C. Dog Spike

D. Elastic Rail Clip ✓

Q55 Technical Abilities

What are beams fabricated using rolled plates called?

A. Castellated beams

B. Composite beams

C. Hybrid beams

D. Plate girders ✓

Q56 Technical Abilities

Borosilicate glass is used in the manufacture of laboratory equipment and cooking utensils due to what property?

A. It can be moulded into curved shapes.

B. It is a clear glass and does not obscure vision.

C. It can withstand high temperatures. ✓

D. It is a strong glass and resists breakage.

Q57 Technical Abilities

What is the function of the 'Layer Manager' in Autodesk 3ds Max?

A. To add cameras to the scene

B. To assign materials to object

C. To group objects together

D. To control object visibility and manage scene organisation ✓

Q58 Technical Abilities

Which of the following statements is true regarding a fixed beam?

A. The deflection at the fixed ends is zero, but the slope is not zero.

B. The deflection and slope at the fixed end are zero. ✓

C. A fixed beam is always supported on more than two supports.

D. A fixed beam does not experience end moments

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Q59 Technical Abilities

The devices for harnessing solar energy are usually coated with:

- A. carbide coating
- B. titanium oxide coating
- C. anti-reflective coating ✓
- D. anti-glare coating

Q60 Technical Abilities

The basic principle of surveying, 'working from whole part', is best represented by which of the following options?

- A. It helps to continue the work during the second day of surveying.
- B. One can finish the traverse survey quickly.
- C. Easiness in surveying.
- D. If an accurate basic control is established first, large errors can be prevented and minor ones controlled and localised. ✓

Q61 Technical Abilities

In a reciprocating pump, which of the following options connects the piston to the crankshaft?

- A. Suction pipe
- B. Delivery pipe
- C. Connecting rod ✓
- D. Bearings

Q62 Technical Abilities

According to the Bureau of Indian Standards, IS 12894:2002, clay and silt in sand for pulverized fuel-ash lime bricks should preferably be:

- A. 16-20%
- B. 11-15%
- C. 6-10%
- D. 0-5% ✓

Q63 Technical Abilities

The raw material for slate tile roofing is _____.

- A. straw
- B. stone ✓
- C. metal
- D. mud

Q64 Technical Abilities

Half round country tiles are laid in pairs of _____.

- A. under tile and over tile ✓
- B. lap tile and overlap tile
- C. bottom tile and crown tile
- D. base tile and covering tile

Q65 Technical Abilities

Which type of roller is most suitable for compacting cohesive soils?

- A. Sheep foot roller ✓
- B. Smooth wheel roller
- C. Vibratory roller
- D. Pneumatic roller

Q66 Technical Abilities

With respect to Darcy's law, which of the following heads are ignored for soil flow problems?

- A. Hydraulic head
- B. Pressure head
- C. Velocity head ✓
- D. Datum head

Q67 Technical Abilities

Which of the following is NOT a type of drilling equipment?

- A. Drifters
- B. Jack hammer
- C. Truck mounted drill
- D. Excavator ✓

Q68 Technical Abilities

Which of the following bonds is considered the strongest and most suitable for load-bearing walls?

- A. Flemish bond
- B. English bond ✓
- C. Stretcher bond
- D. Header bond

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Q69 Technical Abilities

For a column with one end fixed and the other end hinged, what is the effective length factor K?

- A. 2.0
- B. 0.7 ✓
- C. 0.5
- D. 1.0

Q70 Technical Abilities

Which of the following types of beams is used for lightly loaded beams such as roof purlins and sheeting rails?

- A. Plate girders
- B. Castellated beams
- C. Angles sections ✓
- D. Box girders

Q71 Technical Abilities

Shooting concrete under pressure with hose pipe and nozzle to repair damaged concrete areas is known as _____.

- A. guniting ✓
- B. sealing
- C. concreting
- D. curing

Q72 Technical Abilities

In polymer-modified concrete (PMC), the role of the polymer component is to:

- A. reduce strength and durability
- B. reduce water permeability and increase flexibility ✓
- C. increase brittleness
- D. increase setting time significantly

Q73 Technical Abilities

Which of the following statements about manometric head is correct?

- A. It is a constant value for all pumps.
- B. It is the effective head that accounts for losses. ✓
- C. It does not include friction losses.
- D. It represents only the suction head of a pump.

Q74 Technical Abilities

Which type of footing is preferred for closely spaced columns in a row?

- A. Combined footing
- B. Isolated footing
- C. Continuous footing ✓
- D. Strap footing

Q75 Technical Abilities

The term 'eccentric footing' refers to a footing:

- A. used for machine foundations
- B. having a circular shape
- C. placed off-centre relative to the column ✓
- D. shared by multiple columns

Q76 Technical Abilities

In plastering of surfaces, the process of hacking is done to ensure:

- A. that the materials of plaster are mixed to a correct consistency
- B. that the surface is smooth and free from all laitance
- C. bonding between the surface and the plaster ✓
- D. that the moisture content is retained in the plaster mix

Q77 Technical Abilities

Which is the correct sequence for preparation of the surface for new pointing work?

- A. Wetting surface and joints; Raking Joints; Cleaning surface and joints
- B. Cleaning surface and joints; Wetting surface and joints; Raking joints
- C. Cleaning surface and joints; Raking joints; Wetting surface and joints
- D. Raking joints; Cleaning surface and joints; Wetting surface and joints ✓

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Q78 Technical Abilities

In a reinforced concrete beam, what should the spacing of vertical stirrups be in terms of effective depth, to ensure adequate shear reinforcement as per IS 456:2000?

- A. It should not exceed the effective depth (d) of the beam.
- B. It should not exceed 1.5 times the effective depth (d) of the beam.
- C. It should not exceed twice the effective depth (d) of the beam.
- D. It should not exceed 0.75 times the effective depth (d) of the beam. ✓

Q79 Technical Abilities

Expanded polystyrene (EPS) is commonly used in the construction of:

- A. thermal insulation panels ✓
- B. reinforced concrete
- C. electrical wiring
- D. structural steel

Q80 Technical Abilities HINDI - no English version saved

फर्श की मात्रा_____।

- A. m^3 में मापी जाती है और लंबाई, चौड़ाई तथा ऊंचाई को अधिरचना की दीवार से दीवार तक आंतरिक आयामों के रूप में लिया जाता है
- B. m^3 में मापी जाती है और लंबाई, चौड़ाई तथा ऊंचाई को अधिरचना की दीवार से दीवार तक बाह्य आयामों के रूप में लिया जाता है
- C. m^2 में मापी जाती है और लंबाई तथा चौड़ाई को अधिरचना की दीवार से दीवार तक बाह्य आयामों के रूप में लिया जाता है
- D. m^2 में मापी जाती है और लंबाई तथा चौड़ाई को अधिरचना की दीवार से दीवार तक आंतरिक आयामों के रूप में लिया जाता है ✓

Q81 Technical Abilities

Which of the following causes settlement of foundations due to water level fluctuation?

- A. Adjacent excavation
- B. Vibration due to blasting
- C. Slipping of ground strata on sloping sites.
- D. Seasonal swelling and shrinking of expansive soils ✓

Q82 Technical Abilities

A Location Plan is also called a:

- A. Key Plan ✓
- B. Site Plan
- C. Master Plan
- D. Survey Plan

Q83 Technical Abilities

What is the role of impact force in the soil compaction process?

- A. It increases soil permeability.
- B. It creates a uniform soil texture.
- C. It helps to retain moisture.
- D. It reduces the void spaces by sudden compression. ✓

Q84 Technical Abilities

Select the pair in which the words present the same relationship to each other as the words of the given pair.

Approximate quantity estimate : Running meter length : : Cube rate estimate : _____

- A. cost of one room
- B. cubical content ✓
- C. area content
- D. plinth area

Q85 Technical Abilities

In the moment distribution method, how is the distribution factor (DF) for a structural member at a joint determined?

- A. By dividing the stiffness of the considered member at a joint by the total stiffness of all the members meeting at that joint ✓
- B. By multiplying the stiffness of the considered member at a joint with the total stiffness of all the members meeting at that joint
- C. By adding the stiffness of the considered member at a joint by the total stiffness of all the members meeting at that joint
- D. By dividing the total stiffness of all the members meeting at a joint by the stiffness of the considered member

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Q86 Technical Abilities

Which type of reinforcement is called the main reinforcement in a one-way slab?

- A. Bottom reinforcement placed in the longer span direction
- B. Bottom reinforcement provided in the shorter span direction ✓
- C. Top reinforcement provided in the transverse direction
- D. Top reinforcement supported along the longer span

Q87 Technical Abilities

Which of the following factors would most likely decrease surface runoff?

- A. High intensity rainfall
- B. Impervious surfaces like roads and buildings
- C. Removal of vegetation
- D. Permeable soil and vegetation cover ✓

Q88 Technical Abilities

Cracks in buildings caused by vegetation are because of:

- A. dense branches of trees adjacent to the building
- B. moisture due to transpiration of vegetation
- C. the removal of vegetation leading to dry conditions
- D. the roots of trees very close to the building ✓

Q89 Technical Abilities

A building section drawing does NOT give which of the following information?

- A. Length and width of the rooms ✓
- B. Type of materials used for the structure
- C. Foundation used for the structure
- D. Height of the structure

Q90 Technical Abilities

Which of the following environmental factors negatively affects the durability of concrete?

- A. Dry conditions with proper curing done
- B. Well-ventilated surroundings
- C. High temperature and humidity variations ✓
- D. Stable temperature with no moisture changes

Q91 Technical Abilities

Which of the following statements about traffic marking classification is INCORRECT?

- A. Transverse markings include stop lines, pedestrian crossings and yield lines.
- B. Yellow markings are exclusively used for regulatory purposes, while white markings are only used for guidance. ✓
- C. Longitudinal markings regulate lane discipline and provide guidance to drivers.
- D. Object markings are used to indicate fixed roadside obstacles like medians and bridge piers.

Q92 Technical Abilities

Which structural component of a bridge directly supports the superstructure and transfers the load to the foundation?

- A. Piers ✓
- B. Expansion Joints
- C. Bearings
- D. Deck

Q93 Technical Abilities

What is the primary function of a pile cap in a deep foundation?

- A. To reduce the length of piles
- B. To improve aesthetic appearance
- C. To prevent water ingress into the foundation
- D. To distribute loads evenly among piles ✓

Q94 Technical Abilities

A finish of rich concrete made with very hard and tough quality coarse aggregate such as granite, basalt, quartzite, etc. is known as ____ finish.

- A. terrazzo
- B. granolithic ✓
- C. monolithic
- D. ceramic

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Q95 Technical Abilities

As per IS 10262:2009, what is the maximum mixing water content per unit volume of concrete for 20 mm nominal maximum size angular coarse aggregate, considering a slump range of 25 to 50 mm?

- A. 186 kg/m^3 ✓
- B. 250 kg/m^3
- C. 200 kg/m^3
- D. 150 kg/m^3

Q96 Technical Abilities

If the width of a rectangular notch is doubled, then the discharge will _____.

- A. increase by three times
- B. remain the same
- C. become half
- D. double ✓

Q97 Technical Abilities

Which of the following commands is used in Autodesk 3ds Max to create a new scene?

- A. File → New ✓
- B. Create → Scene Setup
- C. File → Open
- D. Edit → New Scene

Q98 Technical Abilities

A point on the picture plane where all the parallel lines appear to converge is called:

- A. eye level point
- B. angle of vision point
- C. vanishing point ✓
- D. station point

Q99 Technical Abilities

Which tool is used for breaking hard surfaces during excavation?

- A. Rake
- B. Crowbar
- C. Spade
- D. Pickaxe ✓

Q100 Technical Abilities

The foundation settlement caused by lowering of water level in fine grained soils is _____.

- A. plastic compression
- B. elastic compression
- C. erosion
- D. consolidation ✓

Q101 Technical Abilities

What is the main purpose of adding steel fibres to concrete?

- A. To improve its tensile strength and crack resistance ✓
- B. To reduce the need for cement
- C. To increase the water cement ratio
- D. To increase the weight of concrete

Q102 Technical Abilities

The vertical downward movement of a structure's base is known as _____.

- A. Deflection
- B. Depression
- C. Deformation
- D. Settlement ✓

Q103 Technical Abilities

Which type of footing is most commonly used when a column is placed near a property boundary, restricting footing extension on one side?

- A. Combined footing
- B. Strap footing ✓
- C. Mat footing
- D. Isolated footing

Q104 Technical Abilities

If the length, width and height of the wall is 7 m, 0.3 m, 3 m, respectively, then the total quantity of brickwork required will be:

- A. 21 m^2
- B. 0.9 m^2
- C. 12.6 m^3
- D. 6.3 m^3 ✓

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Q105 Technical Abilities

Which of the following is NOT an effect of a force applied to a body?

- A. Change in direction of motion
- B. Change in motion
- C. Change in mass ✓
- D. Change in shape

Q106 Technical Abilities

Which type of window sill is best suited for areas prone to heavy rainfall?

- A. Sloped sill ✓
- B. Horizontal sill
- C. Vertical sill
- D. Flat sill

Q107 Technical Abilities

Pointing is a process carried out in:

- A. plastered masonry walls
- B. wattle and daub walls
- C. stucco walls
- D. exposed masonry walls ✓

Q108 Technical Abilities

Which of the following is NOT a desirable characteristic of a good formwork?

- A. Should be rigid and strong
- B. Should be easily handled and removed
- C. Should be highly absorbent to absorb excess water ✓
- D. Should provide a smooth surface finish

Q109 Technical Abilities

Which type of scaffolding is most suitable for stone masonry work?

- A. Suspended scaffolding
- B. Double scaffolding ✓
- C. Cantilever scaffolding
- D. Single scaffolding

Q110 Technical Abilities

Which keyboard shortcut is used to toggle wireframe mode in 3ds Max?

- A. Ctrl + W
- B. Shift + X
- C. W
- D. F3 ✓

Q111 Technical Abilities

The whole circle bearing and the reduced bearing of a line will be the same when the line is in the _____ quadrant.

- A. north-east ✓
- B. south-east
- C. north-west
- D. south-west

Q112 Technical Abilities

Which method is most commonly used for placing concrete in high-rise buildings?

- A. Pumping method ✓
- B. Pouring concrete from a height without any control
- C. Direct placement using wheelbarrows
- D. Hand mixing and placing

Q113 Technical Abilities

In planning a residence, the principle of orientation is adopted to ensure:

- A. proper sanitation and hygiene in the residence
- B. natural elements are used effectively in the design ✓
- C. beautiful aesthetic appearance of the residence
- D. rooms are oriented to achieve the required privacy

Q114 Technical Abilities

Which of the following boundary conditions for a column results in the lowest effective length factor (K)?

- A. One end fixed and the other pinned
- B. Both ends fixed ✓
- C. One end fixed and the other free
- D. Both ends pinned

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Q115 Technical Abilities

The moment of force depends on which factors?

A. Only the magnitude of the force

B. Both force magnitude and perpendicular distance ✓

C. The speed of rotation

D. Only the distance from the point of rotation

Q116 Technical Abilities

As per general conditions of the contract, the security money deposited by the contractor is:

A. 5% of the estimated cost

B. 10% of the estimated cost ✓

C. 2% of the estimated cost

D. 20% of the estimated cost

Q117 Technical Abilities

What happens when the rate of precipitation is greater than the rate of infiltration?

A. Evaporation stops completely

B. Surface runoff increases ✓

C. Rivers and lakes start to evaporate faster

D. Groundwater recharge occurs

Q118 Technical Abilities

How does adding more fine aggregate affect the properties of Ready Mix Concrete (RMC)?

A. Increases setting time

B. Improves compressive strength directly

C. Enhances resistance to freezing and thawing

D. Increases workability ✓

Q119 Technical Abilities

Which soil type is least suitable for shallow foundations?

A. Black cotton soil ✓

B. Coarse sand

C. Fine sand

D. Silty clay

Q120 Technical Abilities

The aggregate crushing value in accordance with IS 2386 Part IV, 1963, shall not exceed _____ for concrete for wearing surfaces such as runways, roads and pavements.

A. 30% ✓

B. 35%

C. 45%

D. 50%

Q121 Technical Abilities

In the three envelope system of tender submission, the first envelope contains:

A. documents related to estimation of construction work

B. financial bid

C. technical bid

D. documents related to eligibility criteria ✓

Q122 Technical Abilities

The correct relationship between Modulus of Elasticity (E) and Shear Modulus (G) is given by:

A. $E = G(1+2\mu)$

B. $E = G(1+\mu)$

C. $E = 2G(1+\mu)$ ✓

D. $E = 3G(1-2\mu)$

Q123 Technical Abilities

Which of the following sensors on board of the Indian Remote Sensing satellites is capable of monitoring dynamic phenomenon such as forest fire?

A. LISS I

B. MOS

C. WiFS ✓

D. PAN

Q124 Technical Abilities

Which of the following represents an engineer's scale?

A. 1 in 10

B. 1/5000

C. 1 cm = 10 m ✓

D. 2%

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Q125 Technical Abilities

Identify the tool NOT used for stone dressing:

A. Splitting chisel

B. Dressing knife

C. Pestle ✓

D. Mash hammer

Q126 Technical Abilities

Which of the following statements are correct with respect to estimation of water tanks?

A: Water proofing compounds are added in plaster of water tank walls.
B: Item particulars in estimate of water tanks, does not include estimate of ladder to be built around it.
C: When the vertical and horizontal walls of tanks meet, a sloping structure is built at their intersection, this is called haunching.
D: When the vertical and horizontal walls of tanks meet, a sloping structure is built at their intersection, this is called soling.

A. B and D

B. B and C

C. A and D

D. A and C ✓

Q127 Technical Abilities

Which of the following will NOT prevent cracks resulting from sulphate attack?

A. Use of bricks containing high percentage of soluble salts ✓

B. Use of sulphate resistant cement in building works

C. Use of rich cement mortar or concrete in building works

D. Provision of damp proofing to maintain dry conditions

Q128 Technical Abilities

Escalator balustrades are primarily designed to:

A. protect users from falling ✓

B. house control panels

C. support the weight of steps

D. improve aesthetics

Q129 Technical Abilities

Why is proper drainage essential for subgrade soil in highway pavements?

A. To allow easy mixing with cement

B. To prevent moisture retention and strength reduction ✓

C. To increase soil temperature

D. To reduce erosion

Q130 Technical Abilities

Which of the following is NOT true with respect to structural cracks?

A. Caused by changes in moisture, etc. on building materials. ✓

B. Generally the damage is difficult to rectify or repair.

C. Pose significant risk to the stability of the building.

D. Caused by overloading of the structural components.

Q131 Technical Abilities

What is a particle board made up of?

A. Layers of odd number veneers glued under pressure

B. Strips of thin wood glued between two veneers

C. Wood fibres and synthetic resin moulded together

D. Wood chips in a binder pressed under heat/pressure ✓

Q132 Technical Abilities

What is the typical ratio of cement, sand and aggregate for RCC (M20 grade)?

A. 1 : 2 : 3

B. 1 : 3 : 6

C. 1 : 1.5 : 3 ✓

D. 1 : 4 : 8

Q133 Technical Abilities

What is the main purpose of applying grade compensation on a horizontal curve?

A. To reduce the frictional resistance due to the curve and gradient ✓

B. To allow vehicles to travel at higher speeds on curves

C. To make the road surface smoother

D. To increase the tractive effort of vehicles

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Q134 Technical Abilities

Which of the following is a major combustible component of biogas?

A. Carbon dioxide

B. Hydrogen sulphide

C. Methane ✓

D. Butane

Q135 Technical Abilities

What is the primary load that a lintel resists?

A. Lateral load

B. Shear load

C. Bending load ✓

D. Axial load

Q136 Technical Abilities

Which type of scaffolding is used for painting tall buildings?

A. Double scaffolding

B. Suspended scaffolding ✓

C. Cantilever scaffolding

D. Single scaffolding

Q137 Technical Abilities

A light pole is held in place by three tensioned cables forming angles of 60°, 75°, and 45° with each other at a common point. Assuming equilibrium, which theorem helps to determine the tensions in the cables?

A. Newton's second law

B. Parallel axis theorem

C. Varignon's theorem

D. Lami's theorem ✓

Q138 Technical Abilities

Which of the following components of the Autodesk Civil 3D 2024 user interface provides access to file-related commands such as creating, opening, printing, exporting and publishing files?

A. Ribbon

B. Command Line

C. Toolspace Window

D. Application Menu ✓

Q139 Technical Abilities

Which of the following is the full form of PENT or PETN, an explosive used in tunneling and military applications?

A. Pentane Energy Nitrate

B. Pentaerythritol Tetranitrate ✓

C. Polyethylene Nitrogen Trinitrate

D. Pyrotechnic Explosive Nitrogen Trigger

Q140 Technical Abilities

How is the design shear strength of concrete ($_c$) influenced by the percentage (p_t) of tensile reinforcement in a beam?

A. Increases with an increase in tensile reinforcement percentage ✓

B. Decreases with an increase in tensile reinforcement percentage

C. Increases up to 2% of tension reinforcement and decreases if the tension reinforcement exceeds 2%

D. Remains constant regardless of tensile reinforcement percentage

Q141 Technical Abilities

What is the main advantage of a raft foundation?

A. Cheaper than other foundations

B. Easier to construct

C. Settlement is uniform ✓

D. Reduces column spacing

Q142 Technical Abilities

According to Terzaghi's bearing capacity theory, the angle of shear failure planes of the Rankines passive zones of linear shear, with the horizontal is _____. (where φ = angle of internal friction)

A. 45

B. 45 – φ/2 ✓

C. φ/2

D. 45 + φ/2

Q143 Technical Abilities

In a singly reinforced beam, the reinforcement is provided in which zone?

A. Both tension and compression zones

B. Only tension zone ✓

C. Entire cross-section

D. Only compression zone

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Q144 Technical Abilities

Which of the following states in India has the maximum potential for wind energy?

A. Uttar Pradesh

B. Himachal Pradesh

C. Punjab

D. Gujarat ✓

Q145 Technical Abilities

If the retaining wall moves away from the backfill, the value of coefficient of Rankine's earth pressure is given by:

A. $\frac{(1 - \sin \varphi)}{(1 + \sin \varphi)}$ ✓

B. $(1 + \sin \varphi)$

C. $(1 - \sin \varphi)$

D. $\frac{(1 + \sin \varphi)}{(1 - \sin \varphi)}$

Q146 Technical Abilities

Which of the following is the correct expression for the bending equation in pure bending?

(Where M = Bending moment, I = Moment of inertia of the cross-section about the neutral axis, f = Bending stress at a distance y from the neutral axis, y = Distance from the neutral axis, E = Modulus of elasticity, and R = Radius of curvature of the beam)

A. $\frac{M}{I} = \frac{y}{f} = \frac{E}{R}$

B. $\frac{I}{M} = \frac{f}{y} = \frac{E}{R}$

C. $\frac{M}{I} = \frac{f}{y} = \frac{E}{R}$ ✓

D. $\frac{M}{I} = \frac{f}{y} = \frac{R}{E}$

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Q147 Technical Abilities

For a cantilever beam of length 'L' subjected to a uniformly distributed load (UDL) w (kN/m) over its entire length, what is the bending moment at the fixed end?

A. $\frac{WL^2}{4}$

B. $\frac{WL}{2}$

C. $\frac{WL^2}{2}$ ✓

D. $\frac{WL}{4}$

Q148 Technical Abilities

For a thin rod of length L, rotating about its center, the radius of gyration is:

A. $\frac{L}{\sqrt{3}}$

B. L

C. $\frac{L}{\sqrt{2}}$

D. $\frac{L}{\sqrt{12}}$ ✓

Q149 Technical Abilities

Where is the centre of gravity of a solid cone located?

A. At the apex of the cone

B. At the geometric centre of the base

C. At a height $\frac{h}{4}$ from the base along the axis ✓

D. At a height $\frac{h}{2}$ from the base along the axis

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Q150 Technical Abilities

A prismatic bar of length 'L' and cross-sectional area 'A' is subjected to an axial tensile load 'P'. What is the maximum stress induced in the bar?

A. $\frac{2P}{A}$

B. $\frac{P}{L}$

C. $\frac{P}{2A}$

D. $\frac{P}{A}$ ✓

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General Abilities

50 Questions • Answer Key

Q1 General Abilities

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

A. bottles
B. dustbins
C. open containers
D. shielded containers ✓

Q2 General Abilities

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

A. Storing in a warm place
B. Adding antioxidants ✓
C. Keeping it in direct sunlight
D. Increasing moisture content

Q3 General Abilities

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

A. ₹1,000 per month
B. ₹816 per month ✓
C. ₹1,200 per month
D. ₹512 per month

Q4 General Abilities

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

A. The ability to diffuse into other solids
B. Strong intermolecular forces and close packing of particles ✓
C. High intermolecular spaces
D. High kinetic energy of particles

Q5 General Abilities

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

A. rainfall
B. the decline in sea levels
C. the rise in sea levels ✓
D. condensation

Q6 General Abilities

Which of the following is an example of database management software?

A. MS Paint
B. Microsoft Access ✓
C. Notepad
D. PowerPoint

Q7 General Abilities

What is the function of the Linux Shell?

A. To execute user commands and act as an interface between the user and the kernel ✓
B. To create and delete partitions
C. To directly manage hardware resources
D. To store user data

Q8 General Abilities

The speed of a wave is given by which of the following formulas?

A. Speed = Frequency × Wavelength ✓
B. Speed = Frequency × Amplitude
C. Speed = Amplitude × Wavelength
D. Speed = Time × Frequency

Q9 General Abilities

Which of the following is a string instrument?

A. Flute
B. Shehnai
C. Sitar ✓
D. Tabla

Q10 General Abilities

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

A. Incinerator
B. Open dumps
C. Sanitary landfills ✓
D. Furnace

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Q11 General Abilities

Where is the magnetic field strength maximum around a magnet?

A. At the centre of the magnet
B. Equidistant from the poles
C. At the poles of the magnet ✓
D. At infinity

Q12 General Abilities

Which of the following is NOT an example of system software?

A. macOS
B. Linux
C. Microsoft Word ✓
D. Windows 10

Q13 General Abilities

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

A. CFCs
B. carbon dioxide
C. methane
D. nitrous oxide ✓

Q14 General Abilities

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

A. liver
B. lungs ✓
C. intestines
D. kidneys

Q15 General Abilities

The Montreal Protocol came into force in the year _____.

A. 1992
B. 1990
C. 1989 ✓
D. 1986

Q16 General Abilities

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

A. Barchans ✓
B. Loess
C. Moraines
D. Cirques

Q17 General Abilities

Which dynasty was overthrown by Chandragupta Maurya to establish the Mauryan Empire?

A. Kushan Dynasty
B. Nanda Dynasty ✓
C. Shunga Dynasty
D. Gupta Dynasty

Q18 General Abilities

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

A. Adam Smith
B. Karl Marx
C. John Maynard Keynes
D. VKRV Rao ✓

Q19 General Abilities

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?

A. 0.25 A ✓
B. 1.5 A
C. 4 A
D. 2.88 A

Q20 General Abilities

Which of the following is an example of a chemical change?

A. Curdling of milk ✓
B. Freezing of water
C. Tearing of paper
D. Dissolution of sugar in water

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Q21 General Abilities

Which of the following is NOT a file management task?

A. Creating files
B. Deleting files
C. Browsing the internet ✓
D. Renaming files

Q22 General Abilities

Which of the following is a zero waste procedure?

A. Organic farming
B. Inorganic farming
C. Pest management
D. Integrated organic farming ✓

Q23 General Abilities

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

A. Fatwas
B. Farman
C. Zawabit ✓
D. Iqta

Q24 General Abilities

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

A. decrease ✓
B. remain the same
C. increase
D. first increase, then decrease

Q25 General Abilities

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

A. Vindhya Hills
B. Western Ghats
C. Satpura Hills
D. Aravali Hills ✓

Q26 General Abilities

Which of the following is NOT an example of an agrochemical?

A. Fungicides
B. Biogas ✓
C. Herbicides
D. Pesticides

Q27 General Abilities

What is the purpose of the 'BCC' field in an email?

A. It hides recipients from each other. ✓
B. It deletes an email after it is read.
C. It marks an email as urgent.
D. It allows recipients to see each others' addresses.

Q28 General Abilities

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

A. India vs New Zealand Test Series
B. Asia Cup
C. Border-Gavaskar Trophy ✓
D. India vs England Test Series

Q29 General Abilities

The Punjab Plain is formed by which river system?

A. Indus and its tributaries ✓
B. Ganga and its tributaries
C. Narmada and its tributaries
D. Brahmaputra and its tributaries

Q30 General Abilities

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)

A. 6.35×10^{-11} N
B. 3.35×10^{-11} N ✓
C. 4.50×10^{-11} N
D. 5.75×10^{-11} N

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Q31 General Abilities

Which of the following best describes a heterogeneous mixture?

A. The components cannot be separated.

B. It contains only one phase.

C. It has a uniform composition.

D. The composition varies throughout the mixture. ✓

Q32 General Abilities

If the mass of an object is 74.5 kg, what is its approximate weight on Earth? (Take g = 9.8 m/s^2)

A. 447 N

B. 7.6 N

C. 730 N ✓

D. 74.5 N

Q33 General Abilities

Which statement correctly explains why liquids can flow?

A. Liquids have no intermolecular forces.

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

C. Liquids do not have kinetic energy.

D. Liquid molecules move randomly without any restriction.

Q34 General Abilities

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

A. 1951

B. 1962

C. 1957

D. 1965 ✓

Q35 General Abilities

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?

A. 78 u ✓

B. 59 u

C. 97 u

D. 100 u

Q36 General Abilities

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

A. The text is converted into numbers.

B. The text remains unchanged.

C. The text is sorted from Z to A.

D. The text is sorted alphabetically from A to Z. ✓

Q37 General Abilities

What is the primary goal of application security?

A. To increase the execution speed of applications

B. To enhance the graphical user interface of applications

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

D. To reduce the size of application files

Q38 General Abilities

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

A. President ✓

B. Chief Justice of India

C. Speaker of Lok Sabha

D. Vice President

Q39 General Abilities

When were the 38th National Games held in Uttarakhand?

A. February 1 - 20, 2025

B. February 10 - 25, 2025

C. January 28 - February 14, 2025 ✓

D. January 15 - 30, 2025

Q40 General Abilities

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?

A. 35 g

B. 60 g

C. 10 g ✓

D. 25 g

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Q41 General Abilities

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

- A. 40% ✓
- B. 30%
- C. 10%
- D. 20%

Q42 General Abilities

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

- A. Africa
- B. India
- C. America
- D. Antartica ✓

Q43 General Abilities

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

- A. Vice President ✓
- B. Comptroller and Auditor General
- C. Chief Election Commissioner
- D. Governors of States

Q44 General Abilities

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

- A. Vithya Ramraj
- B. Abhinaya Shetty
- C. Pooja Singh ✓
- D. Swapna Barman

Q45 General Abilities

Which of the following is an example of a WAN?

- A. A home Wi-Fi network
- B. A university campus network
- C. The internet ✓
- D. A Bluetooth connection between a phone and a laptop

Q46 General Abilities

Which of the following metals is placed between aluminium and zinc in the reactivity series?

- A. Magnesium ✓
- B. Copper
- C. Iron
- D. Carbon

Q47 General Abilities

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?

- A. M = 2.5
- B. M = −2.5
- C. M = −1.5 ✓
- D. M = 1.5

Q48 General Abilities

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

- A. ↕ (Vertical double-headed arrow)
- B. ↔ (Horizontal double-headed arrow) ✓
- C. I-beam (Text cursor)
- D. Hand cursor

Q49 General Abilities

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

- A. Indian Institute of Technology Kanpur
- B. Indian Institute of Technology Gandhinagar
- C. Indian Institute of Science Bengaluru ✓
- D. Indian Institute of Technology Madras

Q50 General Abilities

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

- A. More than 50 km
- B. Up to 10 km
- C. Up to 1 km ✓
- D. Up to 5 km

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Q51 Technical Abilities

Which of the following bonds is used when constructing curved brick walls?

- A. Header bond ✓
- B. Stretcher bond
- C. English bond
- D. Dutch bond

Q52 Technical Abilities

Plinth protection along external walls is essential to prevent which of the following?

- A. Atmospheric action on foundation ✓
- B. Thrust of superstructure loads
- C. Weathering of subsoil due to vegetation
- D. Lateral pressure on walls and floors

Q53 Technical Abilities

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

- A. hardness test
- B. shrinkage test
- C. absorption test ✓
- D. structure test

Q54 Technical Abilities

Which component of a staircase supports the treads and risers?

- A. Stringer ✓
- B. Baluster
- C. Newel post
- D. Handrail

Q55 Technical Abilities

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

- A. Piston pump ✓
- B. Submersible pump
- C. Centrifugal pump
- D. Gear pump

Q56 Technical Abilities

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

- A. Polar Tracking
- B. Object Snap ✓
- C. Ortho
- D. Snap

Q57 Technical Abilities

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

- A. Goods yard ✓
- B. Passenger yard
- C. Marshalling yard
- D. Locomotive yard

Q58 Technical Abilities

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:

- A. 22
- B. 34
- C. 12 ✓
- D. 40

Q59 Technical Abilities

In India, which of the following timber is most commonly used for scaffolding?

- A. Bakul
- B. Bamboo ✓
- C. Bijasal
- D. Banyan

Q60 Technical Abilities

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

- A. flooring
- B. compacted earth fill ✓
- C. cement concrete slab
- D. damp proof course

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Q61 Technical Abilities

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

A. Desert regions

B. Industrial buildings

C. Flood-prone areas ✓

D. Seismic zones

Q62 Technical Abilities

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

A. Guide rails

B. Governor

C. Counterweight

D. Traction motor ✓

Q63 Technical Abilities

Which of the following is NOT an assumption of pure bending theory?

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

B. The material is homogeneous and isotropic.

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

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

Q64 Technical Abilities

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?

A. 70 kN

B. 50 kN ✓

C. 60 kN

D. 5 kN

Q65 Technical Abilities

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

A. When moments are expected to reverse, such as in multi-storeyed frames under lateral loads ✓

B. When minimum reinforcement is required

C. When the beam is subjected only to compressive forces

D. When the beam is short and deep

Q66 Technical Abilities

Which type of elevator is best suited for high-rise buildings?

A. Pneumatic elevator

B. Belt elevator

C. Hydraulic elevator

D. Traction elevator ✓

Q67 Technical Abilities

Which of the following is NOT a type of flow line?

A. Energy line ✓

B. Streakline

C. Vortex line

D. Pathline

Q68 Technical Abilities

Which of the following is NOT a type of dump truck?

A. Articulated dump truck

B. Side or rear dump truck

C. Tower crane truck ✓

D. Bottom dump truck

Q69 Technical Abilities

Which of the following is the most accurate method of estimation?

A. Thorough estimate

B. Unit quantity method

C. Total quantity method ✓

D. Cube rate estimate

Q70 Technical Abilities

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

A. Environmental sanction

B. Technical sanction

C. Administrative sanction ✓

D. Expenditure sanction

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Q71 Technical Abilities

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?

- A. Bed joint
- B. Riser
- C. Perpend ✓
- D. Quoin joint

Q72 Technical Abilities

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

- A. Telescopic Method ✓
- B. Cut-and-Cover Method
- C. Incremental Launching
- D. Trenchless Method

Q73 Technical Abilities

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

- A. Flaking ✓
- B. Popping
- C. Staining
- D. Blistering

Q74 Technical Abilities

Which type of equipment is best suited for laying asphalt in road construction?

- A. Asphalt paver ✓
- B. Motor grader
- C. Scraper
- D. Road roller

Q75 Technical Abilities

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

- A. Flush pointing ✓
- B. Recessed pointing
- C. V pointing
- D. Beaded pointing

Q76 Technical Abilities

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

- A. Arnold ✓
- B. Mental Ray
- C. Scanline Renderer
- D. V-Ray

Q77 Technical Abilities

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

- A. shear stress and shear strain
- B. normal strain and shear strain
- C. normal stress and normal strain ✓
- D. shear stress and normal stress

Q78 Technical Abilities

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

- A. increases
- B. first increases, then decreases
- C. remains constant
- D. decreases ✓

Q79 Technical Abilities

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

- A. casement window
- B. fixed window
- C. sliding window
- D. bay window ✓

Q80 Technical Abilities

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:

- A. more for IS heavy compaction test as compared to IS light compaction test
- B. same for IS heavy compaction test and IS light compaction test
- C. Insufficient data in question
- D. less for IS heavy compaction test as compared to IS light compaction test ✓

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Q81 Technical Abilities

In concrete, the addition of water-reducing admixtures helps in:

- A. decreasing the compressive strength of the concrete
- B. increasing the permeability of the concrete
- C. reducing the durability of the concrete
- D. improving the workability of the concrete without increasing the water content ✓

Q82 Technical Abilities

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

- A. Surface Modify ✓
- B. Surface Changing
- C. Surface Edit
- D. Add Surface Data

Q83 Technical Abilities

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

- A. Bag filters
- B. Centrifugal collectors
- C. Gravitational settling chambers ✓
- D. Electrostatic precipitators

Q84 Technical Abilities

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

- A. Base for keying
- B. Base for hacking
- C. Proper curing
- D. Optimum suction ✓

Q85 Technical Abilities

What type of machine is used for grading and leveling large areas?

- A. Bulldozer
- B. Grader ✓
- C. Scraper
- D. Excavator

Q86 Technical Abilities

Which of the following statements is INCORRECT about the contour interval of a contour map?

- A. Large contour interval is used where the time available for the survey is less. ✓
- B. Small contour interval is selected for surveying on flat ground.
- C. Large contour interval is used where the extent of survey is large.
- D. The contour interval should be directly proportional to the scale of the map.

Q87 Technical Abilities

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

- A. Codes of Practice
- B. Gazetted Rules
- C. Building Bye Laws ✓
- D. Construction Ordinances

Q88 Technical Abilities

Under which of the following conditions should you prefer a caisson foundation?

- A. High-rise building in dry soil
- B. Bridge piers in water ✓
- C. Residential buildings in clay soil
- D. Multi-storey car parks

Q89 Technical Abilities

With reference to disposal of solid wastes, pulverisation refers to:

- A. cutting and tearing
- B. crushing and grinding ✓
- C. heating at 1,100°C
- D. cutting only

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Q90 Technical Abilities

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.

- A. A only
- B. A and B only ✓
- C. B and C only
- D. C only

Q91 Technical Abilities

For dewatering in cohesive soils, which technique is typically ineffective?

- A. Sump pumping ✓
- B. Well-point system
- C. Deep wells
- D. Electro-osmosis

Q92 Technical Abilities

All received tenders can be rejected by the department if:

- A. more than 50 tenders are received for one invitation
- B. the department wishes for a re-advertisement, without any cause
- C. there is a change of government
- D. figure quoted by the lowest bidder is higher than available funds ✓

Q93 Technical Abilities

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:

- A. 0.5 times the unsupported length
- B. 1.5 times the unsupported length
- C. 2.0 times the unsupported length ✓
- D. equal to the unsupported length

Q94 Technical Abilities

What is the primary purpose of the re-barring technique in building maintenance?

- A. To improve the thermal resistance of the building
- B. To increase the load-bearing capacity of an existing structure ✓
- C. To provide surface finishing to exposed concrete
- D. To replace damaged reinforcement bars in old buildings

Q95 Technical Abilities

Which of the following best describes a collision diagram in traffic engineering?

- A. A graphical representation of accident patterns at a location ✓
- B. A statistical report on traffic volume at a location
- C. A chart showing vehicle speeds on a highway
- D. A blueprint for road intersection design at a location

Q96 Technical Abilities

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?

- A. 5 N
- B. 25 N
- C. 10 N
- D. 20 N ✓

Q97 Technical Abilities

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

- A. 50 to 100 mm ✓
- B. 25 to 75 mm
- C. 30 to 45 mm
- D. 25 to 50 mm

Q98 Technical Abilities

Which of the following can be classified as light weight roofing?

- A. Flat clay tile roofing
- B. Aluminium sheet roofing ✓
- C. Slate tile roofing
- D. Madras terrace roofing

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Q99 Technical Abilities

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

A. Generate Profile

B. Profile from Alignment

C. Create Profile ✓

D. Draw Profile

Q100 Technical Abilities

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

A. condense; evaporate

B. harden; crumble

C. expand; shrink

D. shrink; expand ✓

Q101 Technical Abilities

Introducing slip joints between external wall and roof slab will reduce cracking due to:

A. moisture changes

B. external chemical reaction

C. the movement of ground

D. temperature variation ✓

Q102 Technical Abilities

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

A. Only the initial construction cost

B. Only the maintenance cost

C. The total cost, including initial construction, maintenance, and vehicle operation costs ✓

D. Only the vehicle operation cost

Q103 Technical Abilities

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

A. Emergency maintenance

B. Preventive maintenance ✓

C. Deferred maintenance

D. Corrective maintenance

Q104 Technical Abilities

How is the centroid of a composite shape determined?

A. By taking the weighted average of the centroids of individual areas ✓

B. By taking the sum of individual areas

C. By finding the intersection of the diagonals

D. By considering only the shape with the largest area

Q105 Technical Abilities

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 ____.

A. clayey; compaction

B. sandy; compaction

C. clayey; consolidation ✓

D. sandy; consolidation

Q106 Technical Abilities

Aerated concrete is manufactured by expanding the binding material mix by:

A. reduction of coarse aggregates

B. foam forming agents

C. gas forming substances ✓

D. vibrating the mix thoroughly

Q107 Technical Abilities

In public buildings such as hospitals, the administrative department should be located:

A. at the back of the building for security

B. centrally for convenience ✓

C. in the farthest corner for privacy

D. in an area with the best outside view

Q108 Technical Abilities

Which of the following statements is INCORRECT about a total station?

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

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

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

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

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Q109 Technical Abilities

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

- A. ISHB (Indian Standard Heavy Weight Beams) ✓
- B. ISMB (Indian Standard Medium Weight Beams)
- C. ISJB (Indian Standard Junior Beams)
- D. ISLB (Indian Standard Light Beams)

Q110 Technical Abilities

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

- A. solid only
- B. plastic only
- C. either semi-solid or plastic
- D. either semi-solid or solid ✓

Q111 Technical Abilities

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

- A. Dumpy level
- B. Cross staff ✓
- C. Total station
- D. Theodolite

Q112 Technical Abilities

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

- A. stadia correction constant
- B. stadia correction factor
- C. stadia hair constant ✓
- D. stadia interval factor

Q113 Technical Abilities

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

- A. the product of deformations of individual sections
- B. the sum of maximum and minimum deformations
- C. independent of the individual deformations
- D. the algebraic sum of deformations of considered individual sections ✓

Q114 Technical Abilities

When an elastic body is subjected to an axial tensile force, it undergoes:

- A. decrease in length and decrease in cross-sectional area
- B. decrease in length and increase in cross-sectional area
- C. increase in length and increase in cross-sectional area
- D. increase in length and decrease in cross-sectional area ✓

Q115 Technical Abilities

Which of the following is NOT a property of carbon fibre?

- A. High ductility ✓
- B. High stiffness
- C. Low thermal conductivity
- D. High corrosion resistance

Q116 Technical Abilities

The pressure head in a fluid is expressed in terms of:

- A. time
- B. force
- C. velocity
- D. length ✓

Q117 Technical Abilities

Which stair type is most suitable for limited space?

- A. Straight flight
- B. Spiral staircase ✓
- C. Quarter-turn staircase
- D. Dog-legged staircase

Q118 Technical Abilities

What is the role of bituminous binder in pavement construction?

- A. It acts as a filler material.
- B. It reduces the pavement strength.
- C. It binds the aggregates together. ✓
- D. It increases the water absorption capacity.

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Q119 Technical Abilities

Which type of window is hinged at the top and opens outward?

A. Pivot window

B. Sliding window

C. Casement window

D. Awning window ✓

Q120 Technical Abilities

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

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

B. 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 ✓

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

D. Enhancement is not permitted near the supports

Q121 Technical Abilities

A hinge support in a beam can resist:

A. only vertical force

B. bending moment only

C. only horizontal force

D. both horizontal and vertical forces ✓

Q122 Technical Abilities

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

A. 0.50

B. 0.55

C. 0.40

D. 0.45 ✓

Q123 Technical Abilities

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

A. Dormant cracks ✓

B. Moving cracks

C. Expanding cracks

D. Active cracks

Q124 Technical Abilities

In stone quarrying, tamping is the process of:

A. ramming the wood wedges into holes drilled into the rock

B. filling the hole containing the explosive charge with damp clay ✓

C. dampening the rock layers with water before digging with tools

D. separating rock layers by applying electricity

Q125 Technical Abilities

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

A. Radiation

B. Traversing

C. Resection

D. Intersection ✓

Q126 Technical Abilities

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?

A. Floor Plan

B. Site Plan

C. Plot Plan

D. Location Plan ✓

Q127 Technical Abilities

Under which of the following circumstances is the revised estimate prepared?

A. When the original sanctioned estimate is exceeded by more than 2%

B. When there are material deviation from the original proposal ✓

C. When another copy of estimate is requested by authorities

D. When the expenditure on a work exceeds the amount of administrative sanction by more than 5%

Q128 Technical Abilities

Site plan is also known as:

A. Plot plan ✓

B. Ground floor plan

C. Landscape plan

D. Sanction plan

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Q129 Technical Abilities

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

- A. To excavate tunnels in a controlled manner ✓
- B. To drill for oil and gas
- C. To construct bridges
- D. To transport materials underground

Q130 Technical Abilities

Which of the following is the primary cause of water hammer?

- A. High fluid viscosity
- B. Low water temperature
- C. Increase in pipe diameter
- D. Sudden changes in flow velocity ✓

Q131 Technical Abilities

Which of the following is NOT a type of canal fall?

- A. Weir fall ✓
- B. Notch fall
- C. Montagu type fall
- D. Vertical drop fall

Q132 Technical Abilities

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

- A. estimate
- B. contract ✓
- C. muster roll
- D. tender

Q133 Technical Abilities

What is the main purpose of constructing Thiessen polygons?

- A. To identify flood-prone areas in a watershed
- B. To predict future rainfall patterns
- C. To measure the infiltration capacity of soil
- D. To determine the distribution of rainfall based on nearby stations ✓

Q134 Technical Abilities

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

- A. Steps
- B. Ramps
- C. Scaffolding ✓
- D. Ladders

Q135 Technical Abilities

With reference to treatment of waste water, the skimming tanks are used for:

- A. removal of gases like methane
- B. removal of oil and grease ✓
- C. mixing of coagulants
- D. removal of inorganic grit

Q136 Technical Abilities

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

- A. Sliding door
- B. Louvered door ✓
- C. Paneled door
- D. Flush door

Q137 Technical Abilities

Epoxy adhesives are classified under ____ adhesives.

- A. water borne
- B. latex
- C. polyester
- D. polymeric ✓

Q138 Technical Abilities

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?

- A. 2.5%
- B. 3%
- C. 4%
- D. 1.6% ✓

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Q139 Technical Abilities

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

- A. Tunneling Machine ✓
- B. Tower Crane
- C. Concrete Pump
- D. Forklift

Q140 Technical Abilities

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

- A. Long columns experience pure axial compression, while short columns experience lateral deflection.
- B. Long columns have a higher slenderness ratio compared to short columns. ✓
- C. Short columns are only used in steel structures, while long columns are used in concrete structures.
- D. Short columns fail due to buckling, while long columns fail due to crushing.

Q141 Technical Abilities

Which of the following is NOT a primary function of the plinth?

- A. Preventing insects from entering the building
- B. Distributing load to the foundation
- C. Providing support to upper floors ✓
- D. Raising the floor level to prevent water ingress

Q142 Technical Abilities

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

- A. At the top fibre ✓
- B. At the bottom fibre
- C. Uniformly across the section
- D. At the neutral axis

Q143 Technical Abilities

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

- A. Roller compacted concrete
- B. Shotcrete method
- C. Tremie method ✓
- D. Hand mixing

Q144 Technical Abilities

The most simple epoxy injection method is ____ injection.

- A. high pressure
- B. brush ✓
- C. low pressure
- D. hand gun

Q145 Technical Abilities

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:

- A. less than 3.2 m^3
- B. more than 4 m^2
- C. 4 m^2
- D. 3.2 m^3 ✓

Q146 Technical Abilities

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

- A. Sand
- B. Natural resin
- C. Chopped straw ✓
- D. Fine muram

Q147 Technical Abilities

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

- A. patterned oxide
- B. inlay
- C. mosaic ✓
- D. terrazzo

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Q148 Technical Abilities

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

A. $\tau_v = \frac{Vu}{d}$

B. $\tau_v = \frac{Vu}{b+D}$

C. $\tau_v = \frac{Vu}{b}$

D. $\tau_v = \frac{Vu}{b \times d}$ ✓

Q149 Technical Abilities

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?

A. The reaction at B is greater than the reaction at A. ✓

B. The reactions at A and B are equal and opposite.

C. The reaction at A is greater than the reaction at B.

D. The reactions at both A and B are independent of the applied loads.

Q150 Technical Abilities

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

A. Zero

B. $\frac{P}{2}$ ✓

C. $\frac{P}{4}$

D. P

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