

Year of Advt: 2025

Date of Exam: 06-September- 2025

35953

Booklet Serial No.

DO NOT BREAK THE SEAL OF THE BOOKLET UNTIL YOU ARE TOLD TO DO SO

QUESTION BOOKLET

SERIES : I

Subjects : General English, General Knowledge and Civil Engineering

Full Marks : 300

Time Allowed : 2½ Hours

Read the following instructions carefully before you begin to answer the questions.

INSTRUCTIONS TO CANDIDATES

1. This Booklet contains 150 questions to be answered in a separate OMR Answer Sheet using Black Ballpoint Pen in the following three Parts :

Part—A : General English	: 25 questions
Part—B : General Knowledge	: 25 questions
Part—C : Civil Engineering	: 100 questions

2. All questions are compulsory.
3. You will be supplied the Answer Sheet separately by the Invigilator. You must complete the details of particulars asked for.
4. Answer must be shown by completely blackening the corresponding circle in the Answer Sheet against the relevant question number by Black Ballpoint Pen. OMR Answer Sheet without marking Series shall not be evaluated.

**Example :**

Suppose the following question is asked :

**The Capital of Meghalaya is**

- (A) Guwahati  
(B) Kohima  
(C) Shillong  
(D) Delhi

You will have four alternatives in the Answer Sheet for your response corresponding to each question of the Question Booklet as below :

(A) (B) (C) (D)

In the above illustration, if your chosen response is alternative (C), i.e., Shillong, then the same should be marked on the Answer Sheet by blackening the relevant circle with a Black Ballpoint Pen only as below :

(A) (B) (C) (D)

**The example shown above is the only correct method of answering.**

5. Answer the questions as quickly and as carefully as you can. Some questions may be difficult and others easy. Do not spend too much time on any one question.
6. There will NOT be any negative marking for wrong answers.
7. The Answer Sheet must be handed over to the Invigilator before you leave the Examination Hall.
8. No Rough Work is to be done on the Answer Sheet. Space for Rough Work has been provided in the Question Booklet.

SEAL

## PART—A : GENERAL ENGLISH

( Marks : 50 )

Each question carries 2 marks

**Directions (Q. Nos. 1-5) : In the following questions, out of the four alternatives given, choose the one which best expresses the meaning of the underlined word.**

1. That pattern could simply reflect the paucity of records, particularly from earlier centuries.  
(A) abundance  
(B) deficiency  
(C) opacity  
(D) clarity
2. We see them in perpetual movement, and we therefore say they are living.  
(A) continuous  
(B) brief  
(C) irregular  
(D) uniform
3. I personally have found your candour very refreshing.  
(A) frankness  
(B) proposal  
(C) intention  
(D) concept
4. The councillors ratified the decision taken earlier by the Education Committee.  
(A) opposed  
(B) rewarded  
(C) confronted  
(D) confirmed
5. She felt very conspicuous in her red dress.  
(A) vain  
(B) noticeable  
(C) grand  
(D) insecure



**Directions (Q. Nos. 6–9) : In the following questions, out of the four alternatives given, choose the one which is opposite in meaning of the underlined word.**

6. You have to be very impertinent to make such a claim.

(A) impudent  
(B) important  
(C) courteous  
(D) insolent

7. After an hour of insipid conversation, I left.

(A) bland  
(B) flavourless  
(C) interesting  
(D) lengthy

8. When Clark came in, she glanced up, trying to appear nonchalant.

(A) confident  
(B) composed  
(C) concerned  
(D) callous

9. Your behaviour is abominable to me.

(A) crucial  
(B) detestable  
(C) despicable  
(D) admirable

**Directions (Q. Nos. 10–13) : Fill in the blanks with the appropriate prepositions from the options given.**

10. The labourers abstained \_\_\_\_\_ work today.

(A) with  
(B) to  
(C) of  
(D) from

11. A committee was appointed to inquire \_\_\_\_\_ the incident.

(A) into  
(B) about  
(C) of  
(D) on

12. They are now reconciled \_\_\_\_\_ their lot.

- (A) of
- (B) at
- (C) to
- (D) with

13. I am rather suspicious \_\_\_\_\_ his true intentions.

- (A) at
- (B) of
- (C) with
- (D) to

**Directions (Q. Nos. 14–17) : In the following questions, four alternatives are given for the idioms/phrases. Choose the alternative which best expresses the meaning of the idiom/phrase.**

14. Hang fire

- (A) to take risk
- (B) to remain unresolved
- (C) to burn
- (D) to do the impossible

15. Pay the penalty

- (A) to be punished
- (B) to bribe
- (C) to quarrel with
- (D) to deceive

16. Keep a good table

- (A) to keep good furniture
- (B) to save old things
- (C) to buy costly furniture
- (D) to entertain guests

17. Grease one's palm

- (A) to apply oil on the hand
- (B) to massage
- (C) to bribe
- (D) to become humble



**Directions (Q. Nos. 18–21) :** In the following questions, sentences are given with blanks to be filled with an appropriate and suitable word/words. Four alternatives are suggested for each question. Choose the correct alternative out of the four.

18. His brother \_\_\_\_\_ for Chennai yesterday.

- (A) has left
- (B) left
- (C) had left
- (D) will have left

19. The thief disappeared after \_\_\_\_\_ committed a theft in the house.

- (A) he has
- (B) he had
- (C) he has been
- (D) he had been

20. We must always \_\_\_\_\_ the truth.

- (A) speak
- (B) tell
- (C) told
- (D) say

21. She \_\_\_\_\_ waiting for you since 10 o'clock.

- (A) has been
- (B) had been
- (C) will be
- (D) would be

**Directions (Q. Nos. 22–25) :** In the following questions, some of the sentences have errors and some have none. Find out which part of a sentence (A), (B) or (C) has an error and select that part as the answer. If there is no error, then (D) is the answer.

22. (A) He was

(B) very delighted

(C) to hear of his success.

(D) No error

23. (A) I request you

(B) to kindly

(C) to help my father.

(D) No error

24. (A) The murderer

(B) was hanged

(C) yesterday.

(D) No error

25. (A) We regret

(B) for the delay

(C) in sending the message.

(D) No error

**PART—B : GENERAL KNOWLEDGE**

( Marks : 50 )

Each question carries **2** marks

- 26.** The Indian Federation is based on the pattern of
- (A) Switzerland
  - (B) the USA
  - (C) Russia
  - (D) Canada
- 27.** The words 'socialist' and 'secular' were added to the Preamble by the
- (A) 41st Amendment
  - (B) 44th Amendment
  - (C) 46th Amendment
  - (D) 42nd Amendment
- 28.** District Judges are appointed by the
- (A) Chief Justice of the High Court
  - (B) State Public Service Commission
  - (C) Chief Minister of the State
  - (D) Governor of the State
- 29.** The Panchayati Raj is a system of
- (A) local government
  - (B) local administration
  - (C) local self-government
  - (D) rural local self-government
- 30.** President's rule can be imposed under the provisions of the
- (A) Article 356
  - (B) Article 360
  - (C) Article 352
  - (D) Article 365
- 31.** Which of the following countries is **not** the member of SAARC?
- (A) Nepal
  - (B) Bangladesh
  - (C) Afghanistan
  - (D) Myanmar



32. The Government of India has established the NITI Aayog to replace the

- (A) Human Rights Commission
- (B) Finance Commission
- (C) Law Commission
- (D) Planning Commission

33. Which one of the following countries is **not** a member of ASEAN?

- (A) Vietnam
- (B) Brunei
- (C) Bangladesh
- (D) Cambodia

34. Arihant is the name of

- (A) infantry combat vehicle
- (B) ballistic missile
- (C) attack helicopter
- (D) nuclear powered submarine

35. Which Indian State **does not** share a border with Nepal?

- (A) Bihar
- (B) Uttar Pradesh
- (C) Sikkim
- (D) Assam

36. Which of the following is **not** a part of the electoral college that elects the Vice President of India?

- (A) The Lok Sabha
- (B) The Rajya Sabha
- (C) The State Legislature
- (D) None of the above

37. Which of the following is **not** the function of the Reserve Bank of India?

- (A) Printing of currency
- (B) Controlling monetary policy
- (C) Lending money to the public
- (D) Regulating banks

38. Which one of the following is a direct tax?

- (A) Goods and services tax
- (B) Income tax
- (C) Customs duty
- (D) Service tax

39. Which of the following rivers originates outside India?

- (A) The Ganga
- (B) The Yamuna
- (C) The Brahmaputra
- (D) The Godavari

40. What type of soil is ideal for cotton cultivation?

- (A) Alluvial soil
- (B) Black soil
- (C) Red soil
- (D) Laterite soil

41. Which of the following is considered a closed system of social stratification?

- (A) Class system
- (B) Caste system
- (C) Democratic system
- (D) Occupational hierarchy

42. Which concept was introduced by Émile Durkheim?

- (A) Class conflict
- (B) Anomie
- (C) Alienation
- (D) Bureaucracy

43. Which of the following best explains patriarchy?

- (A) Rule of law
- (B) Male dominance in society
- (C) Equal gender roles
- (D) Tribal governance

44. Which of the following marked the formal end of the British rule in India?

- (A) The Simon Commission  
The Cabinet Mission
- (C) The Indian Independence Act, 1947
- (D) The Round Table Conference



45. The Non-Cooperation Movement was launched after the

- (A) Jallianwala Bagh Massacre
- (B) Civil Disobedience Movement
- (C) Quit India Movement
- (D) Second World War

46. Who was the first Indian to win an individual Olympic gold medal?

- (A) Abhinav Bindra
- (B) Milkha Singh
- (C) Saina Nehwal
- (D) Leander Paes

47. Which country hosted the FIFA World Cup, 2022?

- (A) Russia
- (B) Qatar
- (C) Brazil
- (D) Germany

48. Which of the following is **not** a feature of a federal system?

- (A) Division of powers
- (B) Independent judiciary
- (C) Unitary executive
- (D) Bicameral legislature

49. What is the main objective of the 'Make in India' initiative?

- (A) Increase foreign travel
- (B) Promote Indian goods for export
- (C) Encourage manufacturing in India
- (D) Import luxury items

50. The Western Ghats are important because

- (A) they contain deserts
- (B) they are UNESCO world heritage sites
- (C) they are industrial hubs
- (D) they are man-made structures

### PART—C : CIVIL ENGINEERING

( Marks : 200 )

Each question carries 2 marks

51. The smaller horizontal angle between the true meridian and a survey line is known as

- (A) declination
- (B) bearing
- (C) azimuth
- (D) dip

52. Contour interval is

- (A) the vertical distance between two consecutive contours
- (B) the horizontal distance between two consecutive contours
- (C) the vertical distance between two points on same contour
- (D) the horizontal distance between two points on same contour

53. Check lines (or proof lines) in chain surveying are essentially required

- (A) to plot the chain lines
- (B) to plot the offsets
- (C) to indicate the accuracy of the survey work
- (D) to increase the out-turn

54. After fixing the plane table to the tripod, the main operations needed at each plane table station are

- 1. levelling
- 2. orientation
- 3. centering

The correct sequence of these operations is

- (A) 1, 2, 3
- (B) 1, 3, 2
- (C) 3, 1, 2
- (D) 2, 3, 1

55. There are two stations A and B. Which of the following statements is correct?

- (A) The fore bearing of AB is AB
- (B) The back bearing of AB is BA
- (C) The fore and back bearings of AB differ by  $180^\circ$
- (D) All of the above



56. Pick up the **incorrect** statement from the following.

- (A) While measuring a distance with a tape of length 100.005 m, the distance will be increasing by 0.005 m for each tape length
- (B) An increase in temperature causes a tape to increase in length and the measured distance is too large
- (C) The straight distance between end points of a suspended tape is reduced by an amount called the sag correction
- (D) A 100 m tape of cross-section  $10 \text{ mm} \times 0.25 \text{ mm}$  stretches about 10 mm under 5 kg pull

57. The line normal to the plumb line is known as

- (A) horizontal line
- (B) level line
- (C) datum line
- (D) vertical line

58. The volume of the earthwork may be calculated by

- (A) mean areas
- (B) end areas
- (C) trapezoidal rule
- (D) All of the above

59. The vertical angle between longitudinal axis of a freely suspended magnetic needle and a horizontal line at its pivot, is known as

- (A) declination
- (B) azimuth
- (C) dip
- (D) bearing

60. A dumpy level is set up with its eyepiece vertically over a peg A. The height from the top of peg A to the centre of the eyepiece is 1.540 m and the reading on peg B is 0.705 m. The level is then set up over B. The height of the eyepiece above peg B is 1.490 m and a reading on A is 2.195 m. The difference in level between A and B is

- (A) 2.900 m
- (B) 3.030 m
- (C) 0.770 m
- (D) 0.785 m

61. A standard steel tape of length 30 m and cross-section  $15 \text{ mm} \times 1.0 \text{ mm}$  was standardized at  $25^\circ\text{C}$  and at 30 kg pull. While measuring a base line at the same temperature, the pull applied was 40 kg. If the modulus of elasticity of steel tape is  $2.2 \times 10^6 \text{ kg/cm}^2$ , the correction to be applied is

- (A)  $-0.000909 \text{ m}$
- (B)  $+0.0909 \text{ m}$
- (C)  $0.000909 \text{ m}$
- (D) None of the above

62. The bearing of  $AB$  is  $190^\circ$  and that of  $CB$  is  $260^\circ 30'$ . The included angle  $ABC$  is
- (A)  $80^\circ 30'$   
 (B)  $99^\circ 30'$   
 (C)  $70^\circ 30'$   
 (D) None of the above
63. If the whole circle bearing of a line is  $180^\circ$ , its reduced bearing is
- (A)  $S 0^\circ E$   
 (B)  $S 0^\circ W$   
 (C)  $S$   
 (D)  $N$
64. If the radius of a simple curve is 600 m, then the maximum length of the chord, for calculating offsets, is taken as
- (A) 15 m  
 (B) 20 m  
 (C) 25 m  
 (D) 30 m
65. Plywood has the advantage of
- (A) greater tensile strength in longer direction  
 (B) greater tensile strength in shorter direction  
 (C) same tensile strength in all directions  
 (D) None of the above
66. Excess of alumina in brick earth makes the brick
- (A) impermeable  
 (B) brittle and weak  
 (C) to lose cohesion  
 (D) to crack and warp on drying
67. For testing compressive and tensile strength of cement, the cement mortar is made by mixing cement and standard sand in the proportion of
- (A) 1 : 2  
 (B) 1 : 3  
 (C) 1 : 4  
 (D) 1 : 6
68. If  $P$  is the percentage of water required for normal consistency, water to be added for determination of initial setting time is
- (A)  $0.70P$   
 (B)  $0.75P$   
 (C)  $0.80P$   
 (D)  $0.85P$
69. Oil varnish generally consists of
- (A) synthetic resin and spirit  
 (B) oil, wax and resin  
 (C) resin, oil and turpentine  
 (D) spirit, oil and wax



- 70.** For testing compressive strength of cement, the size of cube used is
- (A) 50 mm
  - (B) 70.6 mm
  - (C) 100 mm
  - (D) 150 mm
- 71.** The type of bond provided in brick masonry for carrying heavy loads is
- (A) single Flemish bond
  - (B) double Flemish bond
  - (C) English bond
  - (D) zigzag bond
- 72.** Soundness of cement is tested by
- (A) Vicat's apparatus
  - (B) Le-Chatelier apparatus
  - (C) compressive strength testing apparatus
  - (D) None of the above
- 73.** For one cubic metre of brick masonry, the number of bricks required is
- (A) 400
  - (B) 425
  - (C) 450
  - (D) 500
- 74.** If water required for 1 bag of cement is 30 litres, the water-cement ratio is
- (A) 0.40
  - (B) 0.50
  - (C) 0.60
  - (D) None of the above
- 75.** If the various concrete ingredients, i.e., cement, sand and aggregates are in the ratio of 1 : 3 : 6, the grade of concrete is
- (A) M10
  - (B) M15
  - (C) M20
  - (D) M25
- 76.** The minimum number of vertical bars for a square column is
- (A) 2
  - (B) 4
  - (C) 6
  - (D) 8
- 77.** The diameter of ties in a column should be
- (A) more than or equal to one-fourth of diameter of main bar
  - (B) more than or equal to 5 mm
  - (C) more than 5 mm but less than one-fourth of diameter of main bar
  - (D) more than 5 mm and also more than one-fourth of diameter of main bar

78. The minimum compressive strength of 1st class bricks should be
- 75 kg/cm<sup>2</sup>
  - 90 kg/cm<sup>2</sup>
  - 100 kg/cm<sup>2</sup>
  - 120 kg/cm<sup>2</sup>
79. Lime mortar is generally made with
- quick lime
  - fat lime
  - hydraulic lime
  - plain lime
80. The size of modular bricks is
- 10 cm × 10 cm × 9 cm
  - 19 cm × 9 cm × 9 cm
  - 22.5 cm × 10 cm × 8.5 cm
  - 22.5 cm × 8 cm × 9 cm
81. For different layers of cement concrete floor, pick up the **incorrect** statement from the following.
- The lowest layer consists of consolidated ground.
  - A 10 cm thick clean sand is laid on consolidated ground.
  - A 10 cm lime concrete (1 : 4 : 8) is laid on clean sand.
  - A 10 cm thick cement concrete (1 : 2 : 4) is laid on top layer.
82. The bearing capacity of a water-logged soil can be improved by
- compacting the soil
  - draining the soil
  - increasing the depth of foundation
  - grouting
83. A floor constructed with 4 mm to 6 mm marble chips, is known as
- reinforced marble floor
  - terrazzo floor
  - marble floor
  - chip floor
84. A stair should **not** have pitch more than
- 25°
  - 30°
  - 40°
  - 50°
85. A wall constructed to resist the pressure of an earth filling is called
- retaining wall
  - breast wall
  - buttress
  - parapet wall
86. Pitched and sloping roofs are suitable for
- coastal regions
  - plain regions
  - covering large areas
  - All of the above

- 87.** As compared to English bond, double Flemish bond is
- (A) stronger
  - (B) more compact
  - (C) costly
  - (D) None of the above
- 88.** The construction joints in buildings are provided after
- (A) 10 m
  - (B) 15 m
  - (C) 20 m
  - (D) 40 m
- 89.** The design mix proportion of M20 is
- (A) 1 : 3 : 6
  - (B) 1 : 4 : 8
  - (C) 1 : 8 : 10
  - (D) None of the above
- 90.** Rise of water table above the ground surface causes
- (A) equal increase in pore water pressure and total stress
  - (B) equal decrease in pore water pressure and total stress
  - (C) increase in pore water pressure but decrease in total stress
  - (D) decrease in pore water pressure but increase in total stress
- 91.** Rankine's theory of active earth pressure assumes
- (A) soil mass is homogeneous, dry and cohesionless
  - (B) ground surface is a plane which may be horizontal or inclined
  - (C) back of the wall is vertical and smooth
  - (D) All of the above
- 92.** Which of the following is the reason for the decrease in the use of stones as building material?
- (A) Steel and RCC are less bulky and more durable
  - (B) Strength of stones cannot be rationally analysed
  - (C) Stones are not conveniently available in plains
  - (D) All of the above
- 93.** The aggregate is called fine aggregate if it is completely retained on
- (A) 0.15 mm sieve
  - (B) 0.30 mm sieve
  - (C) 4.75 mm sieve
  - (D) None of the above



94. Pick up the excavation where measurements are made in square metres for payment :

1. Ordinary cuttings up to 1 m
2. Surface dressing up to 15 cm depths
3. Surface excavation up to 30 cm depths

Select the correct answer from the codes given below.

- (A) 1 only  
(B) 2 only  
(C) 3 only  
(D) Both 2 and 3

95. As per Indian Standard specifications, the peak discharge for domestic purposes per capita per minute, is taken as

- (A) 1.80 litres for 5 to 10 users  
(B) 1.20 litres for 15 users  
(C) 1.35 litres for 20 users  
(D) All of the above

96. If the bearing of  $AB = N40^\circ W$ , bearing of  $BC = S70^\circ E$ , then the value of  $\angle ABC$  is

- (A)  $30^\circ$   
(B)  $70^\circ$   
(C)  $100^\circ$   
(D) None of the above

97. Vane shear test is used to find out shear strength of

- (A) sandy soil  
(B) gravelly soil  
(C) clayey soil  
(D) All of the above

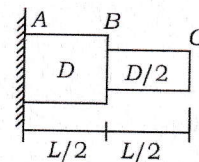
98. A Pelton wheel working under a constant head and discharge has maximum efficiency when the speed ratio is

- (A) 0.26 (B) 0.46  
(C) 0.36 (D) 0.56

99. Newton's law of viscosity is a relationship between

- (A) pressure, velocity and temperature  
(B) shear stress and rate of shear strain  
(C) shear stress and velocity  
(D) rate of shear strain and temperature

100. A circular shaft fixed at A has diameter  $D$  for half of its length and diameter  $D/2$  over the other half. What is the rotation of C relative to B if the rotation of B relative to A is 0.1 radian?



- (A) 0.4 radian  
(B) 0.8 radian  
(C) 1.6 radians  
(D) 3.2 radians

101. The mixture of different ingredients of cement is burnt at

- (A) 1000 °C
- (B) 1200 °C
- (C) 1400 °C
- (D) 1600 °C

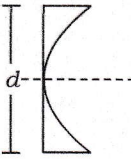
102. Hydration of cement is due to chemical action of water with

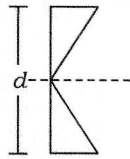
- (A) tricalcium silicate and dicalcium silicate
- (B) dicalcium silicate and tricalcium aluminate
- (C) tricalcium aluminate and tricalcium aluminoferrite
- (D) All of the above

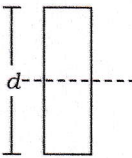
103. The bulk density of aggregates **does not** depend upon

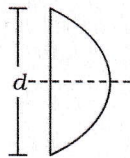
- (A) size and shape of aggregates
- (B) specific gravity of aggregates
- (C) grading of aggregates
- (D) size and shape of the container

104. Shear stress distribution of a beam of rectangular cross-section subjected to transverse loading will be

- (A) 

(B) 

(C) 

(D) 

105. A column of length  $L$  with both ends fixed may be considered as equivalent to a column of length \_\_\_\_\_ with both ends hinged.

- (A)  $L/8$  (B)  $L/2$
- (C)  $L/4$  (D)  $L$

106. The ductility value of bitumen is

- (A) equal to that of tar
- (B) more than that of tar
- (C) less than that of tar
- (D) None of the above

107. The penetration test on bitumen is used for determining its

- (A) grade
- (B) ductility
- (C) viscosity
- (D) None of the above

108. The technique of finding the fair price of an existing building or property is known as

- (A) estimation
- (B) valuation
- (C) pricing
- (D) costing

109. The value of the dismantled material less the cost of dismantling is called

- (A) scrap value
- (B) salvation value
- (C) rateable value
- (D) None of the above



- 110.** The plan of a building is in the form of a rectangle with centre line dimensions of outer walls as  $14.7 \text{ m} \times 9.7 \text{ m}$ . The thickness of the wall in superstructure is  $0.30 \text{ m}$ . What is the floor area of the building?
- (A)  $143 \text{ m}^2$   
 (B)  $139 \text{ m}^2$   
 (C)  $152 \text{ m}^2$   
 (D) None of the above
- 111.** In a theodolite, the line of collimation is
- (A) parallel to the axis of plate levels  
 (B) parallel to the vertical axis  
 (C) perpendicular to the trunnion axis  
 (D) parallel to the horizontal axis
- 112.** In a closed traverse
- (A) difference between fore bearing and back bearing should be  $90^\circ$   
 (B) sum of included angles should be  $(2N - 4)$  times right angle, where  $N$  represents the number of sides  
 (C) sum of included angles should be  $(2N - 1)$  times right angle, where  $N$  represents the number of sides  
 (D) None of the above
- 113.** The void ratio of a soil sample having a porosity of  $0.32$  and a moisture content of  $25\%$  will be
- (A)  $0.33$   
 (B)  $0.47$   
 (C)  $0.78$   
 (D)  $1.28$
- 114.** Loose uniform sand with rounded grains has effective grain size of  $0.05 \text{ cm}$ . Coefficient of permeability of the sand is
- (A)  $0.25 \text{ cm/sec}$   
 (B)  $0.5 \text{ cm/sec}$   
 (C)  $1 \text{ cm/sec}$   
 (D)  $1.25 \text{ cm/sec}$
- 115.** If the capillary rise of water in a  $1 \text{ mm}$  diameter tube is  $3 \text{ cm}$ , the height of capillary rise of water in a  $0.2 \text{ mm}$  diameter tube in centimetres will be
- (A)  $1.5$   
 (B)  $7.5$   
 (C)  $15$   
 (D)  $75$
- 116.** The pressure intensity is same in all directions at a point in a fluid
- (A) only when fluid is frictionless and incompressible  
 (B) only when fluid is frictionless and is at rest  
 (C) only when fluid is frictionless  
 (D) when there is no relative motion of one fluid layer relative to other
- 117.** Rainfall hyetograph shows the variation of
- (A) cumulative rainfall with time  
 (B) rainfall intensity with time  
 (C) rainfall depth over an area  
 (D) rainfall intensity with the cumulative rainfall



- 118.** On horizontal curve, if the pavement is kept horizontal across the alignment, then the pressure on the outer wheels will be
- (A) more than the pressure on inner wheels
  - (B) less than the pressure on inner wheels
  - (C) equal to the pressure on inner wheels
  - (D) zero
- 119.** Pollutant Standards Index (PSI) value in between 101–199 denotes the air quality as
- (A) good
  - (B) moderate
  - (C) unhealthy
  - (D) hazardous
- 120.** The ratio of Young's modulus to modulus of rigidity for a material having Poisson's ratio 0.2 is
- (A) 2.4
  - (B) 0.416
  - (C) 0.357
  - (D) 2.8
- 121.** In irrigation, infiltration tanks are used in areas for
- (A) surface irrigation
  - (B) sub-surface irrigation
  - (C) recharging aquifers
  - (D) reducing canal losses
- 122.** What will be the relation between  $E$  (Young's modulus of elasticity) and  $K$  (bulk modulus), when Poisson's ratio is 0.25?
- (A)  $E = K$
  - (B)  $E = 2K$
  - (C)  $E = 1.5K$
  - (D)  $E = K = 0$
- 123.** Moment of inertia of a triangular section, about an axis passing through its centre of gravity, is
- (A)  $bh^3 / 12$
  - (B)  $bh^3 / 36$
  - (C)  $bh^3 / 32$
  - (D)  $bh^3 / 76$
- 124.** The shape of a cable under uniformly distributed horizontal load is
- (A) parabolic
  - (B) catenary
  - (C) circular
  - (D) triangular
- 125.** The strain energy stored in a body due to external loading, within the elastic limit, is known as
- (A) malleability
  - (B) ductility
  - (C) toughness
  - (D) resilience

126. The test most suitable for concrete of very low workability is  
 (A) slump test  
 (B) compaction factor test  
 (C) Vee-Bee test  
 (D) All of the above
127. The approximate allowable stress in axial compression in reinforced concrete is  
 (A)  $0.25 f_{ck}$   
 (B)  $0.44 f_{ck}$   
 (C)  $0.33 f_{ck}$   
 (D)  $0.30 f_{ck}$
128. For a design of a simply supported beam under uniformly distributed load  
 (A) check the section at centre for bending moment as well as for shear  
 (B) check the section at centre for bending moment and at the support for shear  
 (C) check the section at the centre for shear and at the support for bending moment  
 (D) None of the above
129. The maximum allowable percentage of tension reinforcement in RCC beams is  
 (A)  $0.85/f_y$   
 (B) 0.4  
 (C) 4  
 (D)  $40S_v / f_y d$
130. The maximum spacing of the reinforcement bars in RCC slabs is  
 (A) 20 mm  
 (B) 16 mm  
 (C) span/100  
 (D) None of the above
131. Bolts are most suitable to carry  
 (A) shear  
 (B) bending  
 (C) axial tension  
 (D) shear and bending
132. Most efficient and economical section used as a beam is  
 (A) I-section  
 (B) circular section  
 (C) angle  
 (D) H-section
133. Centre-to-centre distance of adjacent rivet or bolt holes measured in the direction of stress is called  
 (A) gauge  
 (B) pitch  
 (C) lap  
 (D) edge distance
134. The process of mixing clay, water and other ingredients to make bricks is known as  
 (A) tempering  
 (B) kneading  
 (C) pugging  
 (D) moulding



- 135.** The rapid hardening Portland cement is obtained by
- (A) grinding the clinker to a high degree of fineness
  - (B) adding calcium sulphate to the mixture
  - (C) adding gypsum after grinding
  - (D) burning the mixture at a lower temperature
- 136.** A relatively fixed point of known elevation above datum is called
- (A) datum point
  - (B) benchmark
  - (C) reduced level
  - (D) reference point
- 137.** The sag correction in surveys is always
- (A) positive
  - (B) negative
  - (C) zero
  - (D) None of the above
- 138.** In the prismatic compass
- (A) the graduated ring attached to the compass moves with sights
  - (B) usage is not possible without a tripod
  - (C) the needle remains stationary when box is rotated
  - (D) whole circle bearings are calculated
- 139.** Magnetic declination
- (A) remains same at different places
  - (B) varies from place to place
  - (C) does not vary with temperature
  - (D) None of the above
- 140.** A cement concrete road is 1000 m long, 8 m wide and 15 cm thick over the sub-base of 10 cm thick gravel. The box cutting in road crust is
- (A)  $500 \text{ m}^3$
  - (B)  $1000 \text{ m}^3$
  - (C)  $1500 \text{ m}^3$
  - (D)  $2000 \text{ m}^3$
- 141.** The slope correction for a length of 30 m along a gradient of 1 in 20 is
- (A) 3.75 cm
  - (B) 0.375 cm
  - (C) 37.5 cm
  - (D) 2.75 cm
- 142.** The shear strength in plastic undrained clay is due to
- (A) inter-granular friction
  - (B) internal friction
  - (C) cohesion
  - (D) None of the above
- 143.** The hydraulic radius is given by
- (A) wetted perimeter divided by area
  - (B) area divided by square of wetted perimeter
  - (C) area divided by wetted perimeter
  - (D) square root of area



144. The ratio of lateral strain to axial strain of a homogeneous material is known as

- (A) yield ratio
- (B) Hooke's ratio
- (C) Poisson's ratio
- (D) plastic ratio

145. After casting, an ordinary cement concrete on drying

- (A) expands
- (B) either expands or shrinks
- (C) shrinks
- (D) None of the above

146. An aggregate is known as cyclopean aggregate, if its size is more than

- (A) 4.75 mm
- (B) 30 mm
- (C) 60 mm
- (D) 75 mm

147. The minimum thickness of the cover at the end of a reinforcing bar should **not** be less than twice the diameter of the bar subject to a minimum of

- (A) 10 mm
- (B) 15 mm
- (C) 20 mm
- (D) 25 mm

148. In a single reinforced beam, if the permissible stress in concrete reaches earlier than that in steel, the beam section is called

- (A) under-reinforced section
- (B) over-reinforced section
- (C) economic section
- (D) critical section

149. For the design of a simply supported T-beam, the ratio of the effective span to the overall depth of the beam is limited to

- (A) 10
- (B) 15
- (C) 20
- (D) 25

150. The permissible stress, to which a structural member can be subjected to, is known as

- (A) bearing stress
- (B) working stress
- (C) tensile stress
- (D) compressive stress