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MPSC JE

Previous Year Paper
(Civil)
15 Apr, 2023



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

QUESTION BOOKLET

SERIES III

Subjects : General English, General Knowledge, Civil Engineering

BOOKLET SERIAL NO.

40743

Marks : 300

Time : 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 Ball Pen in 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. Answers must be shown by completely blackening the corresponding circles in the Answer Sheet against the relevant question number by Black Ball Pen. OMR Answer Sheet without marking series/ double series marking shall not be evaluated.

Example :

Supposing 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 Ball Point Pen only as below :-

(A) (B) (●) (D)

WHICH 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.

PART - A - GENERAL ENGLISH

Marks :50

Each question carries 2 marks :

Directions : (Q.No.1-4) In the following questions, sentences are given with blanks to be filled with an appropriate and suitable word. Four alternatives are suggested for each question. Choose the correct alternative out of the four.

1. The horse ____ I sold is a stallion.
a) Whom b) Who
c) Which d) Whose
2. He has been blessed ____ good health.
a) By b) With
c) For d) Of
3. The patient ____ before the doctor came.
a) Had died b) Died
c) Die d) Has died
4. She ____ for you since 10'o clock
a) Is waiting b) Has been waiting
c) Waited d) Had waited

Directions : (Q.No.5-8) In these questions, some of the sentences have errors and some have none. Find out which part of a sentence a, b, c has an error and select that part as an answer. If there is no error, then (d) is the answer.

5. The cattle (a) / is grazing (b) / in our farm (c) / no error (d)
6. He has been (a) / blessed by (b) / good health (c) / no error (d)
7. I shall be glad (a) / if you will come (b) / with me (c) / no error (d)
8. She is sitting (a) / right under (b) / the fan (c) / no error (d)

Directions : (Q.NO.9-13), In these questions, out of four alternatives given, choose the one which best expresses the meaning of the underlined word.

9. This statement has a lot of ambiguity
a) Truth b) Vagueness
c) Questions d) Anger
10. All that I could say, or do, would not pacify her.
a) Placate b) Enlighten
c) Enrage d) Transform
11. She gave an exuberant performance.
a) Honourable b) Enticing
c) Exciting d) Inferior
12. Many people were incredulous that such a small fire could have caused so much damage.
a) Sceptical b) Credulous
c) Convinced d) Enraged
13. The story he told was a pathetic attempt to cover up a lie.
a) Direct b) Stupid
c) Pitiful d) Spiteful

Directions : (Q.NO.14-17) In these questions, out of four alternatives given, choose the one which is opposite in meaning to the underlined word.

14. The accountant said that it was the most humdrum day that she had ever passed.
a) Tedious b) Mundane
c) Exciting d) bothersome
15. Despondency began to creep over their hearts.
a) Cheerfulness b) Faith
c) Depression d) Fear
16. His impudent behaviour was a constant source of frustration for his mother.
a) Violent b) Respectful
c) Shameless d) Cheeky
17. The team seemed invincible.
a) Indomitable b) Powerful
c) Conceited d) Vulnerable

Directions : (Q.No.18-21) Fill in the blanks with the appropriate preposition from the options given.

18. He is completely absorbed _____ the music.

- a) With
- b) In
- c) On
- d) To

19. Regular exercise is beneficial _____ health.

- a) For
- b) On
- c) In
- d) To

20. He had no excuse _____ attacking that old man.

- a) On
- b) For
- c) Of
- d) In

21. I insisted _____ his going away at once.

- a) On
- b) In
- c) For
- d) With

Directions : (Q.NO.22-25) In these questions, four alternatives are given for the given idiom/phrase. Choose the alternative which best expresses the meaning of the given idiom/phrase.

22. Kick the bucket

- a) To show anger
- b) To clear the way
- c) To use force
- d) To die

23. In cold blood

- a) To be filled with fear
- b) To kill deliberately
- c) To ignore
- d) To treat coldly

24. Add fuel to the fire

- a) To raise objections
- b) To worsen the situation
- c) To make vain effort
- d) To light a fire

25. Give the cold shoulder

- a) To treat coldly
- b) To fight against
- c) To lend a helping hand
- d) To feel ashamed

PART - B - GENERAL KNOWLEDGE

Marks : 50

Each question carries 2 marks :

26. Which of the following sport was not included in the Common Wealth Games, 2022 ?

- a) Football b) Shooting
c) Judo d) Cycling

27. "Agnipath" Scheme which was launched recently is associated with which of the following fields ?

- a) Tribal Welfare b) Civil Service
c) Police d) Defence

28. Which is India's first underwater metro rail service ?

- a) Mumbai Metro b) Kochi Metro
c) Kolkata Metro d) Chennai Metro

29. Which of the following types of waves are used in a night vision apparatus ?

- a) Radiowaves b) Microwaves
c) Ultraviolet waves d) Infrared waves

30. The indigenous RT-PCR diagnostic kit "Om" to detect the Omicron Variant was developed by

- a) IIT Kanpur b) CSIR-CDRI
c) AIIMS d) DRDO

31. Indian highest Meteorological Centre has been inaugurated in which state/UT ?

- a) Meghalaya b) Sikkim
c) Uttarakhand d) Ladakh

32. Who is the present governor of the Reserve Bank of India ?

- a) Shaktikanta Das b) Raghuram Rajan
c) Bimal Jalan d) Lakshmi Kant Jha

33. Value of a commodity expressed in terms of money is called

- a) Price b) Demand
c) Utility d) Money value

34. Partition Horrors Remembrance Day is observed on

- a) 13th August b) 14th August
c) 16th August d) 17th August

35. The unit of energy produced by food in human body is called

- a) Watt b) Ampere
c) DNA d) Calorie

36. The tropic of cancer passes through which of the following north east states ?

- a) Assam and Tripura
b) Tripura and Mizoram
c) Assam and Manipur
d) Meghalaya and Assam

37. Who amongst the following ruler was known as "Napoleon of India" ?

- a) Chandragupta Maurya
b) Ashoka
c) Akbar
d) Samudra Gupta

38. Which type of missile is "Prithvi-2" which was recently test fired ?

- a) Surface to Air Missile
b) Anti-Aircraft Missile
c) Surface to Surface Missile
d) Air to Air Missile

39. Who was the first Indian to get selected in ICS ?

- a) Satyendranath Tagore
b) Rabindranath Tagore
c) Subhash Chandra Bose
d) Dadabhai Naorojee

40. The term "URL" used in internet technology refers to

- a) Unique Resource Locator
b) Uniform Resource Locator
c) Unique Remote Locator
d) Uniform Remote Locator

41. Green Revolution is mainly associated with

- a) Rice b) Wheat
c) Pulses d) Tea

42. The main headquarters of the North Atlantic Treaty Organization is

- a) Warsaw, Poland b) Ottawa, Canada
c) Washington, USA d) Brussels, Belgium

43. Which of the following sportsperson became the first Indian to win the Prestigious Zurich Diamond League Final, 2022 in Switzerland ?

- a) Neeraj Chopra
- b) P.V. Sindhu
- c) Virat Kohli
- d) Mirabai Chanu

44. The Nokrek National Park, Meghalaya was added by UNESCO to its list of

- a) World Heritage Sites
- b) Global Geo Parks
- c) Biosphere Reserves
- d) All of the above

45. Which of the following does NOT constitute the electoral college for electing the President ?

- a) Elected members of the Rajya Sabha
- b) Elected members of the Legislative Councils
- c) Elected members of the Legislative Assemblies
- d) Elected members of the Lok Sabha

46. Which place is called the "Silicon Valley" of India ?

- a) Bengaluru
- b) Pune
- c) Hyderabad
- d) Delhi

47. Who amongst the following coined the name "Meghalaya" meaning "The Abode of Clouds"?

- a) Rabindranath Tagore
- b) Braj K Nehru
- c) Shiba P Chatterjee
- d) Prakash Mehrotra

48. Green colour in plants is due to the presence of

- a) Sodium
- b) Chlorophyll
- c) Hemoglobin
- d) Phosphorus

49. Which of the following novel was awarded the 2021 Booker Prize for fiction ?

- a) The Promise
- b) Great Circle
- c) The Fortune Men
- d) Bewilderment

50. What does the three colours of the National Flag represent ?

- a) Religion, Peace, Agriculture
- b) Justice, Sacrifice, Agriculture
- c) Sacrifice, Peace, Prosperity
- d) Freedom, Peace, Justice

PART - C - CIVIL ENGINEERING

Marks :200

Each question carries 2 marks :

51. In a door a braced acts as a fastener to the battens
a) Along the width b) Along the height
c) Outside d) Inside
52. In stairs the winders are provided
a) For beauty
b) For aesthetic consideration
c) Space deficiency along horizontal plane
d) Space deficiency along vertical plane
53. The value of density index for a cohesionless soil, which in its natural state is in loose form is
a) 0 b) <1
c) 1 d) >1
54. In soil classification the term GM is refer as
a) Gravel of Medium size
b) Silty Gravel
c) Medium Compressibility Gravel
d) Mixed Gravel
55. The soil structure arrangement, generally for soil particles having sizes between 0.0002mm to 0.02mm is term as
a) Dispersed b) Flocculated
c) Honeycomb d) Composite
56. The decrease in permeability due to the reduction in degree of saturation is caused by
a) Entrapped air in the voids
b) High unit weight of water
c) Lower viscosity of water
d) Low hydraulic gradient
57. Pneumatic roller is suitable in field compaction for
a) Cohesionless sand and gravel
b) Cohesionless sand
c) Cohesive soil
d) Cohesionless sand, gravel and cohesive soil
58. For highly sensitive clay its shear strength is determine by
a) Vane shear test
b) Unconfined compression test
c) Triaxial test
d) Direct Shear box test
59. If the Poisson's ratio of the soil is 0.4, its coefficient of At Rest Earth Pressure is
a) 0.286 b) 0.600
c) 0.667 d) 0.429
60. The pile which act as tension pile is
a) Sheet type
b) Displacement type
c) Non displacement type
d) Under reamed type
61. The Geo synthetic material that is used to provide drainage is in soil project is
a) Geo net
b) Geo grid
c) Geo composite
d) Turf reinforcement mat
62. Stabilisation of soil with lime is carried out for
a) Plastic soil b) Non plastic soil
c) Sandy soil d) Gravelly soil
63. With usual notations, the equation $q_{nf} / F + \gamma D$ refer to
a) Net soil Pressure
b) Safe bearing Capacity
c) Net safe bearing Capacity
d) Net ultimate bearing Capacity
64. The Unit weight of brick masonry with cement plaster in KN/m³
a) 24 b) 25
c) 20 d) 19.2
65. The characteristic load is that load which has ____ probability of not exceeded during the life of the structure
a) 5 percent b) 67 percent
c) 80 percent d) 95 percent
66. In under reinforced section the strain in steel reaches its yield value first, but at that time the strain in concrete is
a) equal 0.002 b) Less than 0.002
c) Less than 0.0035 d) Equal 0.0035

67. The inclination of crack pattern in concrete for simply supported beam between supports and mid span is

- a) Vertical
- b) 0 degree
- c) Less than 45 degree
- d) Between 45 to 90 degree

68. The permissible bond stress for deformed bars in compression is taken as ___ more than the bars in tension.

- a) 15 percent
- b) 25 percent
- c) 20 percent
- d) 10 percent

69. The contribution of bent up bars towards shear resistance should ___ of the total shear re-inforcement.

- a) Not be more than half
- b) Not be less than half
- c) Be equal
- d) None of the above

70. The acceptable limit of safety and serviceability before failure occurs is called

- a) Collapse state
- b) Limit state
- c) Ultimate state
- d) Failure state

71. A survey chain having each link measure as 1ft, is known as

- a) Engineer's chain
- b) Metric chain
- c) Gunter's chain
- d) Steel chain

72. The volume of excavation was computed from the measurements taken by a 20m chain and found to be 6000 cum. At the end of work it was found that the chain used was 5cm too long, where as it was correct during commencement of work. Calculate the correct volume of excavation

- a) 6022.53cum
- b) 6045.11cum
- c) 5955.11cum
- d) 6012.23cum

73. The most prefer triangles arrangement in survey work is

- a) Ideal triangle
- b) Equilateral triangle
- c) Obtuse angle
- d) Right angle triangle

74. The W.C.B of line is $160^{\circ}10'$ its reduced bearing is

- a) $S70^{\circ}10' E$
- b) $N70^{\circ}10' E$
- c) $S19^{\circ}50' E$
- d) $S19^{\circ}50' W$

75. When a known station is sighted and a line

is drawn through the plotted location of that station towards the instrument station, the sight is called

- a) Foresight
- b) Backsight
- c) Bisector
- d) Resector

76. The consecutive readings were taken with a dumpy level are 0.795m, 1.655m, 2.890m, 3.015m, 0.655m. The instrument was shifted after the fourth reading, the first reading was taken on a bench mark whose R.L is 550.605m. The R.L for the second reading is

- a) 550.605m
- b) 548.95m
- c) 549.745m
- d) 551.65m

77. The Countouring method which is suitable for area in low undulations without any vegetative covers is

- a) Square method
- b) Cross section method
- c) Indirect method
- d) Tacheometric method

78. A force of 8kN is acting at 20° clockwise with respect to horizontal axis. Such a quantity is termed as

- a) Scalar
- b) Vector
- c) Weight
- d) Inclined force

79. If a deformable body is in a state of static equilibrium, it would also be in static equilibrium if the body was rigid. This axiom is also known as

- a) Principle of continuum
- b) Principle of action
- c) Principle of reaction
- d) Principle of solidification

80. The magnitude of the force F, whose components along x,y,z directions are 15kN, -20kN,30kN respectively is

- a) 39.35kN
- b) 39.25kN
- c) 39.15kN
- d) 39.05kN

81. In a force system the internal built up forces known as

- a) Active force
- b) Re active force
- c) Self force
- d) None of the above

82. In a free body diagram of forces, the reaction of force generated from a roller support has

- a) One component
- b) Two component
- c) Three component
- d) None of the above

83. In a simple truss the chords are

- a) All components
- b) The members forming outline
- c) Diagonal members
- d) All members excluding joints

84. Frictional forces generated from solid and fluid surfaces in contact is called

- a) Drag
- b) Fluid friction
- c) Dry friction
- d) Surface friction

85. When pressure in vehicular tyre is low it results in

- a) Less flex in side walls
- b) More flex in side walls
- c) Lower rolling friction
- d) None of the above

86. In a Simple machine the irreversibility condition is

- a) Termed as self locking condition
- b) Happening due to removal of the load
- c) Combination of (a) and (b)
- d) None of the above

87. In a lifting machine an effort of 310N raised a load of 10,000N. If the efficiency is 75 percent, the Velocity ratio is

- a) 24.19
- b) 43.01
- c) 2.32 percent
- d) 24.19 percent

88. A rod of 100cm long and 50mm² cross section is subjected to an elongation of 0.10mm. The elasticity modulus of material is 2x10⁶ kg/cm². The force of pull is

- a) 100kg
- b) 10,000kg
- c) 100,000kg
- d) 1000kg

89. A bar of 2m length, 2cm breadth and 1.5cm thickness is subjected to a tensile load of 6000kg. If the Poisson's ratio is 0.25 and elasticity modulus of the bar is 2x10⁶kg/cm², the strain is

- a) 1/2000
- b) 1/1000
- c) 1/200
- d) 1/100

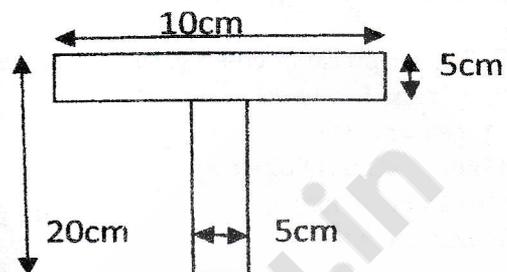
90. A point in a strained material is subjected to two mutually perpendicular tensile stresses of 200N/mm² and 100N/mm². The tangential stress on a plane inclined at 30° to the minor principal stress is

- a) 180.28 N/mm²
- b) 175 N/mm²
- c) 43.3 N/mm²
- d) 21.65 N/mm²

91. The strain energy stored in a bar of 200cm long, 5cm wide and 4cm thick ; is 90kg-cm. The elasticity modulus of the bar is 2x10⁶ kg/cm², the stress in a bar is

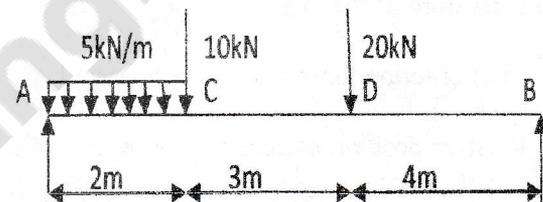
- a) 150 kg/cm²
- b) 300 kg/cm²
- c) 450 kg/cm²
- d) 600 kg/cm²

92. The centre of gravity from the figure is



- a) 10cm
- b) 16.25cm
- c) 12.5cm
- d) 11.5cm

93. The Bending moment at C from the figure is



- a) 41.12kN-m
- b) 51.12kN-m
- c) 61.12kN-m
- d) 31.12kN-m

94. A steel wire of 10mm diameter is bent into a circular shape of 4m radius, with Young's modulus as 2x10⁶kg/cm², the maximum stress induced in a wire is

- a) 5000kg/cm²
- b) 4000kg/cm²
- c) 3500kg/cm²
- d) 2500cm²

95. A cantilever beam of length L carries a point load of W at distance L₁ from fixed end. With E and I as usual notation, the deflection at free end is given by

- a) $WL^3/3EI + WL_1^2(L-L_1)/2EI$
- b) $WL^2 \times L_1/3EI + WL_1^2(L-L_1)/2EI$
- c) $WL_1^3/3EI + WL_1^2(L-L_1)/2EI$
- d) $WL_1^3/4EI + WL_1^2(L-L_1)/3EI$

96. Two plates 20mm thick are joined by a double riveted lap joint. The pitch of each row of rivet is 10cm, the rivets are 25mm diameter. The permissible stresses are as follows :

Tension is 1500kg/cm², Shear is 1250kg/cm², Bearing is 2500 kg/cm². The strength of the un riveted plate per pitch length is

- a) 30000kg
- b) 25000kg
- c) 50000kg
- d) 6135.9kg

97. The reciprocal of co-efficient of compressibility is also known as

- a) Rigidity modulus
- b) Bulk modulus of elasticity
- c) Incompressibility
- d) Shear modulus

98. Weight of liquid that rises in a capillary tube is supported by

- a) Friction between tube wall and liquid
- b) The atmospheric pressure
- c) The vertical component of force due to surface tension
- d) Curvature of the meniscus

99. The criterion for stability of a floating body depends on

- a) Relative position of centre of buoyancy and centre of gravity
- b) Relative position of the metacentre and the centre of buoyancy
- c) Relative position of the metacentre and the centre of gravity
- d) None of the above

100. Fluid masses subjected to uniform acceleration are analysed using

- a) Newton's law of viscosity
- b) Newton's second law of motion
- c) Bernoulli's equation
- d) Momentum equation

101. Choose the term which is not associated with the assumption of Bernoulli's equation

- a) Flow is uniform
- b) Flow is steady
- c) Flow is irrotational
- d) Fluid is incompressible

102. The dimension of a vertex angle is

- a) M⁻¹L¹T¹
- b) M⁻¹L⁰T¹
- c) M¹L⁰T⁰
- d) M⁰L⁰T⁰

103. The energy loss in pipe lines is due to

- a) Viscous action only
- b) Surface roughness only
- c) Friction offered by pipe wall as well as by viscous action
- d) Turbulent shear stress only

104. Water hammer is a phenomenon which is caused by

- a) Sudden opening of valve in a pipe line
- b) Sudden closure of valve in pipe flow
- c) Incompressibility of fluid
- d) The pipe material being elastic

105. In orifice flow the vena contracta represents

- a) The section where the jet has maximum flow area
- b) Section where the pressure is above atmospheric
- c) The location where the jet area is minimum, the streamlines parallel and the pressure atmospheric
- d) The opening of the orifice itself

106. In hydraulic turbine

- a) The runner is keyed to the main shaft
- b) Draft tube is connected to the shaft
- c) The runner is connected to the draft tube
- d) None of the above

107. The crop which require regular supply of irrigation water for long time when there is shortage of rainfall is

- a) Paddy
- b) Bajra
- c) Rabi
- d) Sugar cane

108. The land in which cultivation is performed in the present time is

- a) Gross Commanded Area
- b) Culturable Cultivated Area
- c) Culturable Uncultivated Area
- d) Culturable Commanded Area

109. In India the rivers which received major flows from rainfall only are

- a) Deccan rivers
- b) Desert rivers
- c) Himalayan rivers
- d) Both (a), (b)

110. The canal which is constructed as a sort of a relief work is

- a) Protective canal
- b) Productive canal
- c) Permanent canal
- d) Innundation canal

111. In hilly areas the alignment of a canal is done by alignment of

- a) Ridge
- b) Watershed channels
- c) Feeder canal
- d) Contour channels

112. Minimum losses of canal is by

- a) Evaporation
- b) Seepage
- c) Absorption
- d) Percolation

113. For irrigation of small fields from unlined wells the method use is

- a) Mote
- b) Denkli
- c) Kili
- d) Churus

114. The Strainer in which it is provided with cutter in the tube it is

- a) Legget
- b) Ashford
- c) Pheonix
- d) Layne and bowler

115. The Weir that is generally used as a spillways for a reservoirs is also known as

- a) Pick up weir
- b) Waste weir
- c) Storage weir
- d) Diversion weir

116. Water logging in a soil leads to

- a) Prolonged time of maturity of plants
- b) Possibility of tillage operations
- c) Creation of aerobic condition
- d) Creation of anaerobic condition

117. When the drain water touches the roof of the drain waterway during high flood this type of arrangement is called

- a) Siphon aqueduct
- b) Siphon super passage
- c) Flumed canal
- d) Super passage

118. In Pumping of well the parameter which singly involved lateral measurement of quantity is the

- a) Cone of depression
- b) Radius of influence
- c) Specific yield
- d) Retentive yield

119. The pressure which is below the Atmospheric pressure is termed as

- a) Negative pressure
- b) Positive pressure
- c) Gauge pressure
- d) Bourdon gauge pressure

120. Water requirement in offices per head per day is

- a) 25 litres
- b) 30 litres
- c) 40 litres
- d) 45 litres

121. The most common precipitation in India is

- a) Orographic
- b) Cyclonic
- c) Convective
- d) Occluded

122. When the hydraulic gradient line coincide with the water surface the conduit is termed as

- a) Hydraulic conduit
- b) Gravity conduit
- c) Pressure conduit
- d) Inverted conduit

123. Plankton act as

- a) Natural water purifier
- b) Enhancing the palatability of water
- c) White colouration of water
- d) Food for fish

124. In water purification system the coarse screen is kept inclined so as to

- a) Reduce opening area
- b) Increase velocity of flow
- c) Reduce velocity of flow
- d) Act as desalination

125. The Coagulants used for raw water which is not colour is

- a) Alum
- b) Copperas
- c) Sodium aluminate
- d) Single chlorine

126. Infiltration galleries are provided when

- a) Ground water quantity is less
- b) More impurities exist
- c) Less impurities exist
- d) Ground water quantity is more

127. For potable water the desirable temperature is about

- a) 6°C
- b) 10°C
- c) 13°C
- d) 15°C

128. The amount of Residual chlorine is observed usually after a contact period of

- a) 5 minutes
- b) 10 minutes
- c) 15 minutes
- d) 20 minutes

129. In water distribution networks more stagnation of water occur in

- a) Tree system
- b) Grid iron system
- c) Ring system
- d) Radial system

130. The portion of the soil formation through which lateral movement of water takes place is called

- a) Zone of water table
- b) Zone of saturation
- c) Zone of gravity
- d) Zone of aeration

131. The Indian Road Congress was founded in the year

- a) 1934
- b) 1938
- c) 1943
- d) 1948

132. During the process of Reconnaissance survey in hill roads the width of trace cut adopted is

- a) 0.60-0.75m
- b) 0.75-1.00m
- c) 1.00-1.2m
- d) 1.2-1.5m

133. When the speed of the vehicle is 50kmph the reaction time of the driver is

- a) 2 seconds
- b) 3 seconds
- c) 4 seconds
- d) 5 seconds

134. In Mountainous terrain the difference in elevation over 2km length should not exceed

- a) 50m
- b) 75m
- c) 100m
- d) 125m

135. The Modulus of Subgrade reaction is in

- a) $\text{Kg/cm}^2/\text{cm}$
- b) $\text{Kg/cm}^2/\text{cm}^2$
- c) $\text{Kgc/m}^2/\text{cm}^3$
- d) Kg/cm^2

136. The liquid binder obtained by blending a bituminous binder with a volatile liquid solvent is termed as

- a) Straight run bitumen
- b) Cutback bitumen
- c) Asphalt
- d) Bitumen emulsion

137. The speed at which large number of vehicles travel is known as

- a) Design speed
- b) Modal speed
- c) Minimum speed
- d) Maximum speed

138. The maximum number of passenger cars that can pass a given point on a lane on a roadway during one hour under most ideal roadway and traffic conditions is known as

- a) Basic capacity
- b) Possible capacity
- c) Practical capacity
- d) Design capacity

139. The best performing metal sleeper in railway is

- a) Steel trough
- b) Plate type
- c) Pot type
- d) CST type

140. Pandrol clip is used to

- a) Join the Fish Plates
- b) Join the rails
- c) Act as a key
- d) Fastening rail to the sleeper

141. The first train in India rolled out in the year

- a) 1843
- b) 1853
- c) 1873
- d) 1913

142. The used of finer sand increases the _____, thus increases the water demand for same workability

- a) Volume
- b) Density
- c) Specific area
- d) Pore space

143. In concrete an increase in 1 percent of air entrainment is equivalent to an increase of 3 percent of

- a) Water content
- b) Fine aggregate
- c) Coarse aggregate
- d) Cement

144. The requirement of durability of concrete can be achieved by

- a) Adhering of proper workmanship
- b) Restricting minimum cement content and maximum water cement ratio
- c) Restricting amount of fine and coarse aggregate
- d) Using hard aggregate

145. The Rebound hammer test is limited to determined the hardness of surface upto depth of

- a) 1.5cm
- b) 2.5cm
- c) 5cm
- d) 6cm

146. The mechanical property of aggregate which is important when the aggregate is subjected to high wear is

- a) Abrasion
- b) Crushing
- c) Attrition
- d) Impact

147. The cement obtained by adding a small percentage of aluminium sulphate and finely grinding of cement is

- a) Quick setting cement
- b) Rapid hardening cement

- c) Extra rapid hardening cement
- d) High alumina cement

148. The efflorescence in brick can be minimized during manufacturing by

- a) Reducing burning temperature
- b) Increasing burning temperature
- c) Reducing the water content
- d) Selecting proper clay materials

149. The timber which are slow, difficult to season and free from defects is termed as

- a) Highly refractory
- b) Moderately refractory
- c) High durability
- d) Moderate durability

150. The paint which consist of metallic oxide ground with small quantity of oil and mixed with petroleum spirit is

- a) Enamel paint
- b) Emulsion paint
- c) Plastic paint
- d) Aluminium paint

