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

QUESTION BOOKLET | SERIES IV

Subjects : General English, General Knowledge & Civil Engineering

| BOOKLET SERIAL NO. **300432** | Marks : 350
Time : 3 (three) hours |

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

INSTRUCTIONS TO CANDIDATES

1. This booklet contains **175 questions** to be answered in a separate OMR Answer Sheet using Black Ball Pen in following three parts:

   Part-A-General English : 50 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 :-

Ⓐ   Ⓑ   Ⓒ   Ⓓ

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 :-

Ⓐ   Ⓑ   ⬤   Ⓓ

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.

Marks : 100

Each question carries 2 marks :

Directions : In Question No. 1-5, choose the correct word(s) which best expresses the meaning of the given word (Synonyms):

1. AROMATIC
a) fragrant   b) stinking
c) sweet   d) sentimental

2. SADISTIC
a) depressed   b) malicious
c) smart   d) pleasure from inflicting pain

3. PROGNOSIS
a) identification   b) forecast
c) preface   d) knowledge

4. HOMAGE
a) excessive humility   b) flattery
c) respect and reverence   d) generosity

5. ELUDE
a) deceive   b) evade
c) omit   d) mention

Directions : In Question No. 6-10, choose the correct word which expresses the opposite meaning of the given word (Antonyms) :

6. EXHILARATE
a) lethargy   b) invigorate
c) significant   d) depress

7. GLOSSY
a) sleek   b) shiny
c) dull   d) cunning

8. ISOLATION
a) exaltation   b) segregation
c) association   d) seclusion

9. SOPHISTICATED
a) rural   b) domestic
c) rustic   d) civil

10. LAUDABLE
a) progress   b) inertia

c) flamboyance   d) blameful

Directions : In Question No. 11-15, choose the correct answer best expresses the meaning of the given idiom/phrase :

11. to stir up a hornet's nest
a) to shake
b) to ask for help
c) to create trouble
d) to form a team

12. a pipe dream
a) a dream house
b) an impractical plan
c) a bad idea
d) to slide down

13. to fly off the handle
a) to be angry and lose self control
b) to break something
c) to make a promise
d) to commit a crime

14. to flag a dead horse
a) to start something new
b) to look after someone
c) to do something in vain
d) to do something useful

15. in a nutshell
a) to say something in a few words
b) to be in a difficult situation
c) to measure
d) to be angry

Directions : In Question No. 16-20, fill in the blank with the correct preposition from the given alternatives :

16. The rain lashed heavily _____ the windows.
a) against   b) in
c) on   d) into

17. In appreciation _____ his achievements he was felicitated by the government.
a) by   b) of
c) at   d) in

18. She communicated his views and ideas _____ us.
a) against   b) by
c) at   d) to

19. Sandra was lured _____ taking this present job.
a) into   b) for
c) at   d) under

20. They set sail _____ Italy last week.
a) to   b) for
c) by   d) into

Directions : In Question No. 21-25, part of the sentence has been underlined. Choose the correct answer to improve the sentence or if there is no need for improvement, then mark (d) as your answer.

21. "Twenty miles <u>are a</u> long distance to walk" remarked Mary
a) is   b) a lot
c) feeling   d) No improvement

22. He highlighted the contribution of women <u>for bringing about</u> social and economic changes.
a) for bringing in
b) in bringing of
c) in bringing about
d) No improvement

23. <u>If you would have seen</u> the dance, you would have enjoyed it too.
a) had you would
b) if you have had
c) had you seen
d) No improvement

24. She has not spoken to her mother <u>since they quarreled</u>.
a) because   b) ever since
c) for   d) No improvement

25. The passengers <u>were flown</u> to Japan on the last trip.
a) flew   b) fled
c) have flied   d) No improvement

Directions : In Question No. 26-35, a passage is given ; fill in the blanks with the correct words from the given alternative.

A smile has the **26** that we are probably not even **27** of. Smiling **28** happiness and a friendly **29**. Smiling indicates that we want to **30** with someone and shows our interest. We literally never go wrong with a smile for that is our best **31**. Learning to use and **32** body language helps us become better communicators. By understanding body language more **33**, we can decrease our **34** of being misunderstood, causing **35** and increase our chances of maintaining our friendships, and increases our chances of finding employment.

26. a) power   b) strength
c) ability   d) traits

27. a) aware   b) seen
c) realised   d) know

28. a) makes   b) show
c) inculcate   d) indicates

29. a) smile   b) face
c) attitude   d) person

30. a) say   b) communicate
c) interest   d) indicate

31. a) attitude   b) character
c) feature   d) behaviour

32. a) imbibing   b) discussing
c) discern   d) describe

33. a) effectively b) importantly
c) successfully d) seriously

34. a) way   b) effort
c) idea   d) chances

35. a) happiness b) conflicts
c) sadness   d) pain

Directions : In Question No. 36-45, some parts of the given sentences have errors and some are correct. Find out which part of the sentence has an error and if a sentence is free from errors, your answer is (d) No error.

36. Josh and Jane (A) / are my (B) / family members (C) / No error (D)

a) A   b) B
c) C   d) D

37. Her friend did not see her (A) / for many years (B) / when she met her last night (C) / No error (D)
a) A   b) B
c) C   d) D

38. Harry could not (A) / go to the party (B) / for his father was not well (C) / No error (D)
a) A   b) B
c) C   d) D

39. There was a (A) / number of meetings (B) / which produced little of practical value (C) / No error (D)
a) A   b) B
c) C   d) D

40. Neither Mr. Sharma nor Mr. Gupta (A) / were able to give (B) / Suresh any advice (C) / No error (D)
a) A   b) B
c) C   d) D

41. Nina is (A) / our cousin (B) / sister (C) / No error (D)
a) A   b) B
c) C   d) D

42. The children sat (A) / at the shade of (B) / the mango tree (C) / No error (D)
a) A   b) B
c) C   d) D

43. If it will rain (A) / we shall (B) / not attend the football match (C) / No error (D)
a) A   b) B
c) C   d) D

44. We respect her (A) / as she is (B) / our Principal (C) / No error (D)
a) A   b) B
c) C   d) D

45. None of the rooms (A) / are available for occupation (B) / we were told by the manager (C) / No error (D)
a) A   b) B
c) C   d) D

Directions : In Question No. 46-50, for the given group of words, choose the correct word from the given alternative.

46. A building for lodging of soldiers
a) brigade   b) barrack
c) platoon   d) infantry

47. A place for improving one's health
a) club   b) pool
c) parlour   d) resort

48. A word which is no longer in use
a) obsolete   b) illegible
c) extinct   d) illegal

49. A person who is indifferent to pain and pleasure
a) omniscient   b) heretic
c) anarchist   d) stoic

50. A person who collects postage stamps
a) philatelist   b) epicure
c) novice   d) philanthropist

Each question carries 2 marks :

51. According to the New World Wealth report, released in February, 2017, Mumbai featured in the top ten in terms of billionaire population with how many billionaires ?
a) 28
b) 36
c) 46
d) 56

52. The two British diver who lead the rescue operation in rescuing the 13 boys with their coach in a Thailand cave were
a) John Volathen and James F Cahill
b) John Volanthen and Rick Stanton
c) James F Cahill and Rick Stanton
d) Frederick Dumas and James F Cahill

53. Which Indian firm played a very important role in the rescue of the 13 boys and their coach in a Thailand cave ?
a) Kiloskar
b) Mahindra
c) Tata
d) Reliance

54. Pakistan went to vote on the 25th of July 2018, when did the counting of vote starts ?
a) 25th July 2018
b) 27th July 2018
c) 26th July 2018
d) 28th July 2018

55. India's PM Narendra Modi attended the 10th BRICS Summit in which discussion on Trade War was one of the main agenda. Where was the Summit held ?
a) Moscow
b) Beijing
c) Johannesburg
d) Rio De Janeiro

56. Lunar eclipse is caused when
a) The sun the earth and the moon are in a line
b) The earth comes between the sun and the moon
c) The sun and the earth are on either side of the moon
d) The sun comes between the earth and the moon

57. Which is the hottest planet in the solar system ?
a) Jupiter
b) Mercury
c) Venus
d) Saturn

58. Supreme court in India was established in Calcutta in
a) 1771
b) 1774
c) 1775
d) 1776

59. The most drought-prone country in the world is
a) Australia
b) Egypt
c) Iraq
d) Mexico

60. Minimum age of the candidate for contesting Rajya Sabha election is
a) 25 years
b) 21 years
c) 30 years
d) 35 years

61. The maximum strength of the Legislative Assembly of a State is
a) 480
b) 500
c) 525
d) 548

62. Capital formation in an economy depends on
a) Total income
b) Total demand
c) Total savings
d) Total production

63. The measurement of poverty line is based on the criteria of
a) Their dwelling houses
b) The nature of employment
c) Caloric consumption
d) Level of education

64. The major source of revenue in India is through
a) Direct Tax
b) Indirect Tax
c) Internal Borrowing
d) External Borrowing

65. Which of the following is a super cooled liquid ?
a) Mercury
b) Bromine
c) Glass
d) Ice-cream

66. Vitamin which promotes wound healing is
a) Vitamin B   b) Vitamin A
c) Vitamin C   d) Vitamin D

67. The language used in writing the scientific names of animals is
a) French   b) Latin
c) German   d) Dutch

68. Tear gas used by the police to disperse the mob contains
a) Carbon dioxide
b) Chlorine
c) Ammonia
d) Hydrogen sulphide

69. The smallest living thing that can cause disease in the human body is
a) Flea   b) Bacteria
c) Protozoa   d) Virus

70. Which of the following is essentially required to digest the food in the stomach ?
a) Air   b) Water
c) Enzyme   d) Mineral

71. The game of chess is said to have originated in
a) China   b) Iran
c) India   d) Indonesia

72. Borlaug Award was instituted for recognising outstanding contribution in the field of
a) Agriculture   b) Ecology
c) Journalism   d) Medicine

73. Indian Air Force was established in the year
a) 1857   b) 1932
c) 1947   d) 1950

74. The calculator was developed by
a) Franc Boldwin
b) Jacards Loom
c) J Betty
d) Howard Aiken

75. Who is known as the father of computer ?
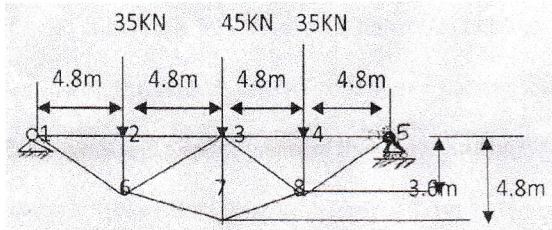a) Bill Gates
b) Charles Babbes
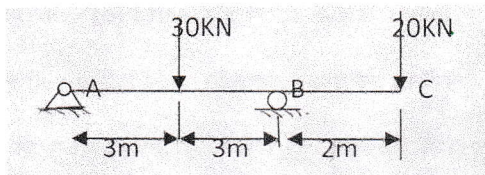c) Alan Euning
d) Johan Euring

Each question carries 2 marks :

76. Using the method of joints for the truss shown in figure below, the force P_{12} is


a) 57.5KN
b) -76.66KN compression
c) 95.83KN compression
d) -95.83KN tension

77. Using conjugate beam method for a beam in figure below, when EI is constant the deflection at point C is
a) -78.33/EI downward   b) 78.33/EI upward
c) 53.33/EI   d) 12.5/EI

78. A continous beam has a loading arrangement as shown in figure below if point B sinks by 0.25cm below the level of A and C, the value of I = 8200cm^4, E = 2047 t/cm^2 the B.M.diagram in tones-metre on simple span AB and BC due to applied load is given by
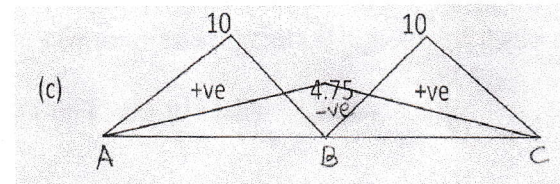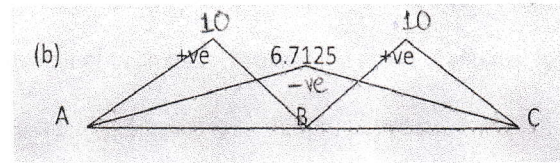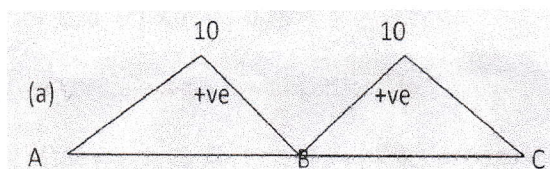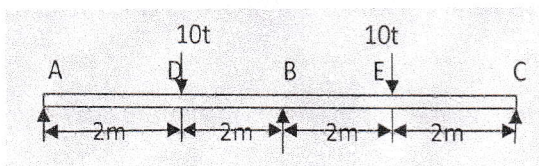
d) None of the above

79. Under the action of external loads, internal actions and stresses will develop, resulting in _____ element deformations and displacements of the whole structure.
a) internal discrete   b) internal buildup
c) forming   d) huge

80. In tall buildings where lift is present sufficient horizontal stiffness must be assured either by shear walls in both directions or by
a) onfill walls   b) solid core
c) stiff core   d) horizontal bracing

81. The moment distribution method in structural analysis can be treated as
a) force method
b) displacement method
c) flexibility method
d) none of the above

82. Estimate expected to be least accurate is
a) supplementary estimate
b) plinth area estimate
c) detailed estimate
d) revised estimate

83. The analysis of statically indeterminate structures by the unit load method is based on
a) force method concept
b) stiffness method
c) both the above
d) none of the above

84. Bar charts are considered suitable for
a) major projects
b) minor projects
c) large projects
d) all the above

85. The flexibility of an element can be defined as
a) flexural moment per unit rotation
b) rotation for unit moment
c) flexibility for unit translation
d) none of the above

86. Bars larger than _____ should not be bundled.
a) 22mm
b) 25mm
c) 28mm
d) 32mm

87. The wind pressure is considered uniform on a structure upto the height of
a) 20m
b) 30m
c) 40m
d) 50m

88. Partial safety factor for dead load, imposed load and wind load for limit state of collapse are respectively
a) 1.5,1.5,1.0
b) 1.5,1.2,1.0
c) 1.2,1.2,1.2
d) 1.2,1.2,1.5

89. The approximate ratio of strength of cement concrete at 3 months to that at 28 days of curing is
a) 1.15
b) 1.30
c) 1.0
d) 0.75

90. Workability of concrete is directly proportional to
a) grading of the aggregate
b) time of transit
c) aggregate cement ratio
d) none of the above

91. The behaviour of fresh concrete under the action of external forces is measured by
a) slump test
b) compacting factor test
c) vee bee test
d) flow test

92. The minimum compressive strength of High Strength Portland cement at the end of one day is
a) 3MPa
b) 10MPa
c) 13MPa
d) 23MPa

93. The tendency of segregation of aggregate in concrete can be reduced by
a) increase size of aggregate
b) increased in slump
c) reduced the height of drop of concrete
d) use coarser aggregate

94. When concrete is exposed at higher temperature the factor which is important for determining the structural behaviour is
a) amount of cement
b) amount of moisture
c) strength of mix
d) amount of aggregate

95. For concrete in general the used of crushed aggregate as compared to other aggregate may result in increase in compressive strength by
a) 1 to 5%
b) 5 to 10%
c) 10 to 15%
d) 10 to 20%

96. In R.C beam reinforcement consist of 16mm bars and coarse aggregate size used is 20mm. The horizontal distance between two parallel reinforcing bars should not be less than
a) 18mm
b) 25mm
c) 28mm
d) 32mm

97. If no compression steel is used to support shear reinforcement, two suspended bars is used of minimum diameter
a) 16mm
b) 12mm
c) 10mm
d) 8mm

98. The dimension symbol of $[ML^{-1}T^{-1}]$ is represent that of
a) dynamic viscosity
b) kinematic viscosity
c) shear stress
d) momentum

99. An ideal fluid is the one which is
a) compressible
b) incompressible
c) negligible surface tension
d) non viscous and in compressible

100. The vertical pressure in the case of vertical surfaces changes with the magnitude depending upon its location from the
a) base
b) free surface
c) centroid
d) bottom

101. Refraction correction
a) completely eliminates curvature correction
b) partially eliminates curvature correction
c) adds to the curvature correction
d) has no effect on curvature correction

102. Direct method of contouring is
a) a quick method
b) adopted for large surveys only
c) most accurate method
d) suitable for hilly terrains

103. A pipeline 60cm in diameter bifurcates into two branches 40cm and 30cm in diameter respectively, if the rate flow in the main pipe is 1.5 m^3/s, the mean velocity in the 30cm diameter pipe is 7.5m/s, the rate of flow in the 40cm pipe is
a) 0.53 m^3/s
b) 0.97 m^3/s
c) 0.63 m^3/s
d) 0.87 m^3/s

104. In the Venturimeter the conversion of the kinetic energy into pressure energy is performed by
a) diffuser
b) cone
c) bend
d) straight length

105. If 't' is the thickness of a thinner plate jointed by intermittent weld, minimum spacing recommended in tension and compression joints are respectively
a) 12 t and 16 t
b) 16 t and 12 t
c) 16 t and 20 t
d) 20 t and 16 t

106. The difference between the most probable value of a quantity and its observed value is
a) true error
b) weighted observation
c) conditional error
d) residual error

107. The allowable length of an offset depends upon the
a) degree of accuracy required
b) method of setting out the perpendiculars and nature of ground
c) scale of plotting
d) all the above

108. Size of a theodolite is specified by
a) the length of a telescope
b) the diameter of a vertical circle
c) diameter of a lower plate
d) diameter of the upper plate

109. Reduction of SO_2 in flue gas can be made by allowing the flue gas containing SO_2 to pass through
a) sodium hydroxide solution
b) ammonia solution
c) carbonate solution
d) potassium iodide solution

110. Soil grain properties are those properties which are dependent on the individual grains of the soil and are independent of the manner of soil
a) density
b) water content
c) density index
d) formation

111. In a grain size distribution curves with particle size in ascending order from the origin, the curve situated higher to the left indicate
a) fine grained soil
b) fine sand
c) medium sand
d) coarse sand

112. The colour of the soil sample begins to change below the
a) liquid limit
b) plastic limit
c) shrinkage limit
d) natural limit

113. When the liquidity index of the soil is less than zero the soil is likely to behave as
a) brittle solid
b) low plasticity
c) hard
d) mild consistency

114. In HRB classification of soil, higher the group index it indicate the soil is of
a) coarse type
b) fine type
c) low plastic
d) gravelly type

115. Among the clay mineral the one which is least active is
a) kaolinite
b) montmorillonite
c) illite
d) calcite

116. In soil compaction Sheep's foot roller is commonly employed in

a) gravelly soil
b) sandy soil
c) sandy silty soil
d) silty clayey soil

117. The negative pressure of water held above the water table results in attractive forces between the particles referred as
a) capillary pressure
b) soil suction
c) upward flow
d) inter granular attraction

118. The permeability is decrease in clay soil fabric of arrangement in
a) dispersion
b) partly dispersed
c) flocculation
d) composite

119. When the upward hydraulic gradient approaches unity it may lead to piping which usually begins near the
a) base of the dam
b) upstream side
c) downstream toe
d) upstream heel

120. Which of the following error is not eliminated by the method of repetition of horizontal angle measurement
a) error due to eccentricity of verniers
b) error due to displacement of station signals
c) error due to wrong adjustment of line of collimation and trunion axis
d) error due to inaccurate graduation

121. The angle between the prolongation of the preceding line and the forward line of the traverse is called
a) deflection angle
b) included angle
c) direct angle
d) none of the above

122. For a circumpolar star, declination must be
a) equal to colatitude
b) more than colatitude
c) less than colatitude
d) any of the above

123. Perpendicular offset from the junction of the transition curve and the circular curve to the

tangent is equal to
a) shift
b) two times the shift
c) three times the shift
d) four times the shift

124. Which of the following methods gives best estimates for the area of an irregular and curved boundary ?
a) Trapezoidal method
b) Simpson's method
c) Average ordinate method
d) Mid ordinate method

125. In the groundwater yield process the water retained by the soil particle is known as
a) pellicular water
b) follicular water
c) saturated water
d) submerged water

126. The deposition of alkali salts on the inside walls of the tube wells reduced the diameter of the pipe is known as
a) incrustation   b) cavitation
c) corrosion   d) piping failure

127. As per IS:1172-1963 the basic requirement of water in hotel per bed per capita per day in litres is
a) 80   b) 120
c) 135   d) 180

128. The method in which the census population of the city is expressed as the percentage population of the whole country is known as
a) proportionment
b) apportionment
c) indirect forecasting
d) prorata forecasting

129. In water works the pipe which retards the scale formation is
a) wrought iron pipes
b) copper and lead pipes
c) GI pipes
d) PVC pipes

130. In determination of head loss in pipes the formula $H_L = fLV^2/2gd$ with f as friction factor, L length of pipe, d diameter of pipe, V mean velocity of flow, g acceleration due to gravity ; this formula belong to

a) Darcy-Weisbach   b) Manning's
c) Hazen-William's   d) Kutter's

131. Any particle which does not alter its size, shape and weight while rising or settling in any fluid is known as
a) indiscrete particle
b) discrete particle
c) resilient particle
d) impulsive particle

132. In some sedimentation tank designs the decanting channels are provided to
a) to collect sediment
b) surface impurities
c) collect raw water
d) collect clear water

133. In plain sedimentation tank of 3m depth, the settlement of silt particle of size 0.06mm require about
a) 5 hours   b) 10 hours
c) 24 hours   d) 36 hours

134. During the process of filtration when the organic impurities form a layer on top of sand bed known as
a) scum bed
b) screed skin
c) residual bed
d) dirty skin

135. Chloroamines are very much useful in water treatment if there is the present of
a) hypochloride
b) iodide
c) phenol
d) carbonic acid

136. Chlorine demand in sewage is the measure of the amount of _____ present in sewage.
a) organic matter
b) pathogens
c) non pathogens
d) in organic matter

137. Retaining wall when not attached to any adjacent structure can _____ to a considerable degree beyond structural impairment.
a) overturn   b) collapse
c) yield   d) slide

138. In bearing capacity evaluation the failure surfaces that extended above the foundation level was considered by
a) Terzaghi   b) Brinch-Hansen
c) I.S code   d) Meyerhof

139. A drum weighing 60N and holding 392N of water is to be raised from a well by means of wheel and axle. The axle is 100mm diameter and wheel 500mm diameter. A force of 120N has to be applied to the wheel the efficiency of the machine is
a) 75.4%   b) 65.4%
c) 40%   d) 50%

140. When the fluid is non homogeneous as the density changes from one point to another so that there exists a density gradient this is possible due to existence of
a) Buoyant force
b) Viscous force
c) Submerged force due to gravity
d) Body force due to gravity

141. The no slip condition implies that the velocity of fluid at a solid boundary must be the same as that
a) of fluid layer
b) of the boundary itself
c) when fluid is non viscous
d) of velocity gradient

142. The turbulence in which the mean square velocity fluctuation in three co ordinate directions are equal to each other is known as
a) isotropic turbulence
b) wall turbulence
c) free turbulence
d) isotropic orthogonal turbulence

143. A pipe when it rises above a hydraulic grade line develop a
a) positive pressure
b) negative pressure
c) zero pressure
d) no flow

144. In a void ratio versus effective pressure curve in consolidation theory the steepness of the curve indicate the
a) increase in stress
b) increase in void
c) decrease in void

d) breakdown in soil structure

145. Unconfined compression test is also frequently used to determine
a) sensivity of clay
b) thixotropy of clay
c) activity of clay
d) cohesion of clay

146. The stability number as determine by Taylor using friction circle and analytical method for slope stability is valid for cases having
a) seepage
b) no seepage
c) infinite slope
d) heterogeneous soil

147. A particle is projected inside a horizontal tunnel of 5m high with a velocity of 60m/sec its angle of projection
a) $8^0 03`$
b) $9^0 24`$
c) $9^0 30`$
d) $9^0 50`$

148. A wheel increase its speed from 45rpm to 90rpm in 30 seconds. Its angular acceleration is
a) 0.05π rad/sec^2
b) $.025\pi$ rad/sec^2
c) 0.5π rad/sec^2
d) 0.6π rad/sec^2

149. An elevator is required to lift a body of mass 65 kg. Find the acceleration of the elevator which could a pressure of 800N on the floor
a) 1.26m/s^2
b) 2.5m/s^2
c) 12.3m/s^2
d) 1.54m/s^2

150. Two pulleys of diameter 500mm and 1600mm are placed at 12m parallel to each other, the length of a belt for running them in open drive system is
a) 25.04m
b) 26.34m
c) 27.32m
d) 27.39m

151. The time in which the finished of an activity can be delayed without delaying the early start of the following activity is known as
a) positive slack
b) negative slack
c) total slack
d) free slack

152. When there are number of activities which are to be performed and there are number of alternate ways of doing them such a model is known as
a) allocation models
b) sequence model
c) network model
d) waiting line model

153. The traffic intensity or utilization factor is used in solving
a) double channel queuing model
b) multi channel queuing model
c) single channel queuing model
d) traffic waiting model

154. In highway financing and economics the study that is taking care directly of annual capacity cost of depreciation also is done by
a) Rate of Return method
b) Benefit Cost Ratio
c) Annual Cost Method
d) Icremental Annual Cost Method

155. The design of a road is 40kmph, the efficiency of the brake is 40%, the reaction time of the driver is 3 seconds the Stopping sight distance is
a) 16m
b) 33.6m
c) 45.6m
d) 49.6m

156. The method of rotation about the centre of the carriageway is related to provision of
a) Camber
b) Super elevation
c) Transition curve
d) Extra widening on curve

157. While designing the valley curve the best shape of the curve is provided by
a) Cubic parabola
b) Lemniscate
c) Spiral
d) Cycloidal

158. The ease or difficulty with which the aggregate particle will deteriorate under the action of traffic is measured by
a) Crushing test
b) Impact test
c) Abrasion test
d) Soundness test

159. When aggregate losses its bituminous coating in presence of moisture is known as

a) Hydrophilic
b) Hydrophobic
c) Hydroscopic
d) Hygroscopic

160. Determine the delta for a crop having base period 120 days, water depth for one irrigation 12 cm and successive irrigation interval of 12 days.
a) 120 cm
b) 10 cm
c) 14400 cm
d) 1440 cm

161. When the irrigation water is in abundance and cheap the commonly adopted flooding method is known as
a) wild flooding
b) border flooding
c) free flooding
d) nul flooding

162. The extraction of excess water from the root zone of crops to restore the condition conducive for normal growth of crops is known as
a) preventive measure
b) curative measure
c) obstruction to natural drainage
d) enhancement measure

163. A river which completely dries up in the arid zones before joining river or sea is termed as
a) non perennial
b) mature river
c) young river
d) virgin river

164. The type of fall which function satisfactorily either flumed or unflumed so long as it is not drowned is
a) inglis fall
b) glacis fall
c) notch fall
d) broad crested fall

165. A unit hydrograph developed on the basis of estimation of co efficient expressing various physical features of a catchment is known as
a) simple hydrograph
b) complex hydrograph
c) S hydrograph
d) Synthetic hydrograph

166. The energy dissipator provided when the

tail water depth is in excess of the sequent depth of hydraulic jump both measured with respect to the channel bed level is known as
a) sloping apron
b) roller bucket
c) skijump bucket
d) chute block

167. The most commonly used method for optimality test of transportation problems is
a) transportation model
b) north west corner method
c) least cost method
d) stepping stone method

168. When the speed of traffic flow decreases and becomes zero, the density attains a maximum value and
a) volume becomes maximum
b) volume becomes zero
c) density increases
d) density becomes maximum

169. The ratio between contact surface pressure to tyre inflation pressure is known as
a) Contact factor
b) Flexible factor
c) Rigidity factor
d) Contact ratio

170. The displacement or bulging of a paving material in the direction of loading due to surface course that is too soft to resist the horizontal pressure and having poor bond is known as
a) Ravelling
b) Slippage
c) Streaking
d) Shoving

171. Pandrol clip is used to fix the rail and the
a) Wooden sleeper
b) Concrete sleeper
c) Plate sleeper
d) Steel trough sleeper

172. When two different gauge are running together in a same track through a common rail, this type of track is known as
a) Gauntlet track
b) Crossover track
c) Gathering track
d) Converging track

173. The signals which are place at the platform of the station to facilitate arrival and de-

parture of train is done by providing
a) Semaphore signals
b) Calling on signals
c) Locational signals
d) Routing signals

174. To avoid damaging the inside edges of rails due to wheel of a train and to prevent the rubbing the inner edges of the wheel then it is done by providing
a) Tilting of rail
b) Adzing of rail
c) Coning of wheel
d) Treading of wheel

175. The most commonly adopted steel sleeper in Indian railway is
a) Plate sleeper
b) Pot sleeper
c) Wooden sleeper
d) CST-9 sleeper

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