ASSISTANT ENGINEER (CIVIL) IN FISHERIES DEPARTMENT

YEAR OF ADVT: 2021 DATE OF EXAM: 29-MARCH-2025

Booklet Serial No. 10361

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

SERIES : I

QUESTION BOOKLET

Subjects : General English, General Knowledge and Civil Engineering

Full Marks : 350 **Time Allowed : 2½ 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 Ballpoint Pen in the 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. 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 :

   Ⓐ Ⓑ Ⓒ Ⓓ

   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 :

   Ⓐ Ⓑ ● Ⓓ

   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* : 100)

Each question carries **2** marks

Directions **: In Q. Nos. 1–5, some of the sentences have errors and some have none. Find out which part of a sentence has an error, i.e., (A), (B) or (C). Mark (D) if the sentence has no error.**

1. The pupil respectfully asked (A) / the teacher if he (B) / could went in. (C) / No error (D)

2. The beggar thanks (A) / him a lot (B) / for the help. (C) / No error (D)

3. The War of Kalinga proved (A) / to be a turning point (B) / in the live of Ashoka, the Great. (C) / No error (D)

4. Democracy is a Government by the people (A) / off the people (B) / and for the people. (C) / No error (D)

5. Johny ran fast (A) / lest he should be (B) / late for the class. (C) / No error (D)

Directions **: In Q. Nos. 6–10, fill in the blanks with the correct answer from the given alternatives.**

6. This area is usually _____ with dacoits.
- (A) infest
- (B) infected
- (C) infested
- (D) infecting

7. The Chairman was _____ to my requests.
- (A) deaf
- (B) defy
- (C) dead
- (D) defied

8. This express train is _____ for Delhi.
- (A) bind
- (B) bound
- (C) bond
- (D) band

9. I am very _____ of ice cream.
- (A) find
- (B) found
- (C) fun
- (D) fond

10. A lovely daughter is _____ to the queen.
- (A) birth
- (B) borne
- (C) born
- (D) burn

***Directions* : In Q. Nos. 11–15, out of the four alternatives given, choose the one which best expresses the similar meaning of the given word.**

11. Heinous

(A) wicked

(B) negative

(C) curse

(D) gloomy

12. Ideology

(A) method

(B) expression

(C) concept

(D) doctrine

13. Intuition

(A) training

(B) instinct

(C) inborn

(D) hint

14. Indomitable

(A) unconquerable

(B) solitary

(C) unresponsive

(D) superior

15. Jest

(A) mock

(B) twitch

(C) fool

(D) joke

***Directions* : In Q. Nos. 16–20, out of the four alternatives given, choose the one which best expresses the opposite meaning of the given word.**

16. Great

(A) feat

(B) massive

(C) huge

(D) small

17. Innocent

(A) clean

(B) guilty

(C) criminal

(D) meek

18. Lenient

(A) strict

(B) harsh

(C) forgiving

(D) kind

19. Oral

(A) written

(B) mouth

(C) vocal

(D) hygienic

20. Permanent

(A) regular

(B) temporary

(C) secure

(D) change

***Directions* : In Q. Nos. 21–25, out of the four alternatives given, choose the one which best expresses the meaning of the underlined idiom.**

21. The infantry has always to bear the brunt of the enemy's attack.

(A) to bear witness
(B) to endure the joy
(C) to endure an attack
(D) to bear fruit

22. He was asked not to beat about the bush but to come to the point of what he wanted to say.

(A) to try to win favours
(B) to talk well
(C) to talk about relevant things
(D) to talk of irrelevant things

23. Many agreed that it does not become of such a person as Satish to blow his own trumpet.

(A) to play a tune
(B) to degrade oneself
(C) to praise oneself
(D) to appear surprised

24. Nilesh and Praveen have decided to bury the hatchet after a long dispute between them.

(A) to make peace
(B) to dig the ground
(C) to negotiate
(D) to make war

25. The items he imported from Dubai are selling like hot cakes.

(A) to have a good season
(B) to become as planned
(C) to have a very slow sale
(D) to have a very good sale

***Directions* : In Q. Nos. 26–30, out of the four alternatives given, choose the one which best expresses the meaning of the given group of words.**

26. Money in use in a particular area

(A) currency
(B) rupee
(C) capital
(D) cash

27. A large body of people playing various musical instruments

(A) melody
(B) harmony
(C) symphony
(D) orchestra

28. A form of government with a monarch as the supreme leader

(A) tyranny
(B) oligarchy
(C) monarchy
(D) monastery

29. A supporter of a policy of national independence

(A) militant
(B) rebel
(C) nationalist
(D) insurgent

30. A journey made by water or in space

(A) rotate
(B) orbit
(C) drive
(D) voyage

Directions **: In Q. Nos. 31–35, out of the four alternatives given, choose the one which will help improve the underlined portion of the given sentence.**

31. The movie had quite an effective on her.

(A) an effectually

(B) an effectual

(C) an effective

(D) an effect

32. Please elaborating your plan for this year.

(A) elaborate

(B) elaboration

(C) elaborating

(D) elaborateness

33. The disease smallpox has almost been eradicator.

(A) eradicating

(B) eradicated

(C) eradicator

(D) eradication

34. Saibal has got an extensive to finish writing his thesis.

(A) an extended

(B) an extensive

(C) an extenuation

(D) an extension

35. It is fashioning to have an iPad nowadays.

(A) fashion

(B) fashionable

(C) fashionably

(D) fashioning

Directions **: In Q. Nos. 36–40, change the voice into active or passive form depending on the given sentence by choosing the correct answer out of the four alternatives given.**

36. The daughter is cooking food.

(A) Food is being cooked by the daughter.

(B) The daughter is food cooking.

(C) The food is cooked by the daughter.

(D) The daughter is cooked food.

37. Nobody has opened this book so far.

(A) This book has so far been opened by anybody.

(B) This book have not been opened by anybody.

(C) Nobody so has far open this book.

(D) This book has not been opened so far by anybody.

38. Someone has broken the glass.

(A) Someone broke the glass.

(B) The glass is being broken by someone.

(C) Someone is breaking the glass.

(D) The glass has been broken by someone.

39. What have the party done about it?

(A) About it what did the party do?

(B) What has been done about it by the party?

(C) The party have done what about it?

(D) What party have done about it?

40. Players have elected her captain of the team.

(A) She has been elected captain of the team by the players.

(B) Players of the team had elected her as captain.

(C) Players of the team her as captain have elected.

(D) She captain of the team has been elected.

Directions **: In Q. Nos. 41–45, rearrange the parts labelled as PQRS in the correct order to form a complete sentence by choosing the correct alternative.**

41. Fruits come in

P. or dry and hard

Q. and succulent,

R. and can be juicy

S. all shapes and sizes

(A) SRPQ

(B) PQRS

(C) SPRQ

(D) SRQP

42. Tree roots stabilize

P. or washed away by heavy rain

Q. the soil and

R. prevent it from

S. being eroded by wind

(A) QRSP

(B) RQSP

(C) PQSR

(D) QPSR

43. There are more insects

P. there are human beings on earth

Q. small town than

R. the size of a

S. living inside an area

(A) SPQR

(B) SRQP

(C) PRQS

(D) RQSP

44. If you look

P. is made of frosted glass

Q. its skin looks

R. as though it

S. underneath a glass

(A) SRQP

(B) SQPR

(C) SQRP

(D) SPQR

45. Cats

P. and a furry coat helps to

Q. are warm-blooded,

R. like all other mammals,

S. insulate the body and keep them warm

(A) RPQS

(B) RQPS

(C) QRSP

(D) SRQP

***Directions* : In Q. Nos. 46–50, read the following passage carefully and answer the questions that follow by choosing the correct answer from the given alternatives.**

Thomas Jefferson was thirty-three when he drafted *The American Declaration of Independence*. Benjamin Franklin was twenty-six when he wrote *Poor Richard's Almanak*. Charles Dickens was twenty-four when he began *The Pickwick Papers* and twenty-five when he wrote *Oliver Twist*. McCormick was twenty-three when he invented the reaper. Newton was twenty-four when he formulated the law of gravitation.

On the other end of the scale : Verdi at eighty produced *Falstaff* and at eighty-five his *Ave Maria*. Goethe at eighty produced *Faust*. Tennyson at eighty wrote *Crossing the Bar*. Michelangelo completed his greatest work at eighty-seven. Titian at eighty-eight painted the memorable picture, *Battle of Lepanto*.

We are often tempted to excuse our failure to accomplish things of which we really are capable if only we tried. Actually, it is never too early or too late in life to begin a task and see it through to completion. There is no time like the present to begin to do something. One is never too young, never too old.

46. It is not true that people are often _____ of major accomplishments because of age.

(A) capable

(B) incapable

(C) early

(D) late

47. Great people are _____ by age.

(A) not restricted

(B) restricted

(C) not talented

(D) talented

48. It is never too early or too late to _____ a task.

(A) continue

(B) restart

(C) begin

(D) stop

49. The best time to start is the _____.

(A) future

(B) present

(C) past

(D) later

50. _____ often is just an excuse for our failure to start.

(A) Age

(B) Number

(C) Temptation

(D) Trial

PART—B : GENERAL KNOWLEDGE

(*Marks* : 50)

Each question carries **2** marks

51. The book titled, *Freedom in Exile* was authored by
(A) Nelson Mandela
(B) Dalai Lama
(C) Mahatma Gandhi
(D) Subhas Chandra Bose

52. When is the World Human Rights Day celebrated?
(A) 10th December
(B) 12th December
(C) 3rd December
(D) 20th December

53. Which of the following is the largest district in Meghalaya?
(A) East Khasi Hills
(B) West Jaintia Hills
(C) South Garo Hills
(D) West Khasi Hills

54. The Strait of Gibraltar separates which two countries?
(A) Russia and USA
(B) Morocco and Spain
(C) Australia and New Guinea
(D) Greenland and Iceland

55. Who was the first Indian to win the Nobel Prize?
(A) Rabindranath Tagore
(B) Jawaharlal Nehru
(C) Dadabhai Naoroji
(D) Aurobindo Ghosh

56. Who introduced the 'Doctrine of Subsidiary Alliance' in India?
(A) Lord Hastings
(B) Lord Cornwallis
(C) Lord Wellesley
(D) Lord Curzon

57. The popular newspaper, *Kesari* (1881) was founded by whom?
(A) Bipin Chandra Pal
(B) Lala Lajpat Rai
(C) Mahatma Gandhi
(D) Bal Gangadhar Tilak

58. Who was awarded 'Green Champion' of the year at the National Creators Award, 2024 in New Delhi?
(A) Maithili Thakur
(B) Pankti Pandey
(C) Aman Gupta
(D) Janhvi Singh

59. What is the SI unit of electric current?
(A) Ampere
(B) Volt
(C) Ohm
(D) Coulomb

60. Which among the following is known as a secondary pollutant in the atmosphere?
(A) Sulphur dioxide
(B) Carbon monoxide
(C) Ozone
(D) Nitrogen oxide

61. The 'Silent Valley National Park' is located in
(A) Odisha
(B) Kerala
(C) Chhattisgarh
(D) Tamil Nadu

62. The concept of 'Five-Year Plans' in the Indian Constitution is borrowed from
(A) USSR
(B) England
(C) United States
(D) Germany

63. The procedure of impeachment of the President of India is
(A) Judicial Procedure
(B) Legislative Procedure
(C) Executive Procedure
(D) Quasi-Judicial Procedure

64. Article 21A of the Indian Constitution provides the Right to
(A) Education
(B) Work
(C) Equality
(D) Privacy

65. In which year did India first participate in the Olympic Games?
(A) 1900
(B) 1923
(C) 1925
(D) 1924

66. The 'Pradhan Mantri Ujjwala Yojana' is related to
(A) skill imparting
(B) financial inclusion
(C) LPG connection
(D) electricity connection

67. Which is the largest river island in the world?
(A) Bhavani Island
(B) Agatti Island
(C) Srirangam Island
(D) Majuli Island

68. Sonagiri is a pilgrimage centre for
(A) Jains
(B) Muslims
(C) Sikhs
(D) Buddhists

69. 'Narcolepsy' is a disease related to
(A) compulsive stealing habit
(B) excessive sleeping disorder
(C) frequent attacks of epilepsy
(D) forgetting disorder

70. Who is considered as the 'Father of Indian Space Programme'?
(A) Dr. Satish Dhawan
(B) Dr. Homi J. Bhabha
(C) Dr. Vikram Ambalal Sarabhai
(D) Dr. Krishnaswamy Kasturirangan

71. Who is the author of the book titled, *Kerala : God's Own Country*?
(A) Jeet Thayil
(B) Shashi Tharoor
(C) Sudha Murty
(D) Thakazhi Sivasankara Pillai

72. Who remarked, "I am revolution and I destroyed the revolution"?
(A) Otto von Bismarck
(B) Adolf Hitler
(C) Benito Mussolini
(D) Napoleon Bonaparte

73. The famous 'Hundred Years' War' was fought between which two countries?
(A) England and Italy
(B) England and France
(C) England and Germany
(D) Germany and France

74. LAC (Line of Actual Control) is an effective border between India and
(A) China
(B) Pakistan
(C) Bhutan
(D) Sri Lanka

75. Which of the following is the smallest unit of data in a computer?
(A) Byte
(B) KB
(C) Bit
(D) Nibble

PART—C : CIVIL ENGINEERING

(*Marks* : 200)

Each question carries **2** marks

76. Preliminary project report for a road project must contain

(A) the detailed estimated cost along with the detailed construction drawings

(B) the several alternative project proposals that have been considered

(C) the detailed surface and sub-soil investigation report, conceptual design, traffic survey and approximate cost

(D) contract documents for inviting tender

77. The precise survey is

(A) reconnaissance survey

(B) final location survey

(C) preliminary survey

(D) economic survey

78. In rigid pavements, the course that can be omitted is

(A) subgrade

(B) base course

(C) base coat

(D) wearing course

79. In hilly road, the ruling gradient according to IRC is

(A) 1 in 30

(B) 1 in 20

(C) 1 in 15

(D) 1 in 12

80. Shear failure in a road pavement is known as

(A) settlement in the filling materials

(B) sliding of the slopes

(C) excessive wearing of the pavement

(D) weakness in the pavement

81. Rolling should be

(A) from center-to-edge

(B) from edge-to-center

(C) from edge-to-center with overlap of min of 30 cm

(D) from one edge to another edge with an overlap of one-half the width of roller

82. Which of the following methods is best for design of steel structure?

(A) Working stress method

(B) Earthquake load method

(C) Limit state method

(D) Ultimate load method

83. The bridges of national importance, located in industrial area and National Highways of big cities are designed for

(A) class A loading

(B) class AA loading

(C) class B loading

(D) None of the above

84. IRC class AA loading consists of

(A) tracked vehicle of 600 kN and wheel load of 400 kN

(B) tracked vehicle of 500 kN and wheel load of 300 kN

(C) tracked vehicle of 700 kN and wheel load of 400 kN

(D) None of the above

85. As per IRC, the maximum width of vehicle is

(A) 1·75 m

(B) 2·2 m

(C) 2·44 m

(D) 3·12 m

86. Hair-pin bend is introduced particularly when it becomes necessary to attain height without covering substantial horizontal distance and IRC permissible speed limit in such segment of the hill road is

(A) 30 km/hour

(B) 20 km/hour

(C) 40 km/hour

(D) None of the above

87. Which of the following is a disadvantage of steel?

(A) High durability

(B) Low strength per unit mass

(C) Fire and corrosion resistance

(D) High cost to size ratio

88. Which are the minimum percentages of chromium and nickel in stainless steel?

(A) 0·5%, 10·5%

(B) 10·5%, 0·5%

(C) 30%, 50%

(D) 2%, 20%

89. The extra width of pavement is provided on

(A) horizontal curve

(B) width of the pavement

(C) length of the pavement

(D) superelevation

90. Which of the following is a statically indeterminate structure?

(A) Simply supported beam

(B) Three-hinged arch

(C) Cantilever beam

(D) Two-hinged arch

91. Choose the incorrect option with respect to the desirable properties of road aggregates.

(A) Hard and durable

(B) Free from flaky and elongated shape

(C) Acceptable table shape and size

(D) All of the above

92. In order to decide the suitability of road stones for use in road construction, which of the following tests is carried out?

(A) Crushing test

(B) Abrasion test

(C) Impact test

(D) All of the above

93. Choose the incorrect option with respect to the properties of good bitumen mix design.

(A) Sufficient stability to satisfy the service requirements of the pavement

(B) Sufficient bitumen to ensure durable pavement by coating the aggregates and bonding them together

(C) Absence of any void space

(D) Sufficient workability while placing and compaction

94. Choose the correct combination with respect to design of flexible pavement from the following.

(A) Surface course, Base course, Sub-base course, Soil subgrade

(B) Surface course, Base course, Sub-base course, Soil top surface

(C) Surface course, Base course, Sub-base course, Base concrete course

(D) None of the above

95. Choose the correct statement.

(A) Prime coat is the first application of a low viscosity liquid bituminous material over an existing porous WBM base course.

(B) Prime coat is the application of bituminous materials over an existing pavement surface which is relatively impervious surface.

(C) Prime coat is the application of bituminous materials over an existing pavement to serve as thin wearing coat.

(D) None of the above

96. The maximum shear stress permitted in reinforced concrete members depends upon

(A) percentage of longitudinal tensile reinforcement

(B) grade of concrete

(C) shear reinforcement provided

(D) None of the above

97. Prestressed concrete means

(A) compressive stress induced in a concrete

(B) compressive stress induced in steel before loading

(C) tensile stress induced in steel before loading

(D) None of the above

98. When a structural member of a uniform section is subjected to a moment at one end only, then the moment required so as to rotate that end to produce a unit slope, is called

(A) stiffness of member

(B) capacity of member

(C) potential of member

(D) resistance of member

99. When bending occurs in any RCC beam, then

(A) tensile and shear stresses occur simultaneously on either side of the neutral axis

(B) tensile and compressive stresses occur simultaneously on either side of the neutral axis

(C) shear and compressive stresses occur simultaneously on either side of the neutral axis

(D) None of the above

100. Any structure that twists is resisting by

(A) bending moment

(B) shear force

(C) torsional moment

(D) None of the above

101. IS code recommended that the spacing of stirrups in RCC beams shall not exceed by a distance equal to

(A) effective depth of a beam

(B) lever arm of the resisting moment

(C) width of the beam

(D) None of the above

102. Weak column-strong beam refers to

(A) column failure occurs before beam failure

(B) beam failure before column failure

(C) column-beam fail simultaneously

(D) None of the above

103. Steel beam theory of doubly reinforcement beams assumed that

(A) tension is resisted by tension steel only

(B) stress in tension steel is equal to the stress in compression steel

(C) compression is resisted by compression steel only

(D) All of the above

104. Variation in column stiffness

(A) causes abrupt change in stiffness

(B) causes much earthquake forces in stiffer column section

(C) causes difficulty in maintaining monolithic of the column

(D) All of the above

105. The maximum diameter of a reinforcement bar in an RCC beam is limited to

(A) 28 mm

(B) one-eighth (1/8) of the least dimension of the beam

(C) 40 mm

(D) None of the above

106. For M15 (1 : 2 : 4) cement concrete, the permissible shear stress is

(A) 5 kg/cm^2

(B) 10 kg/cm^2

(C) 20 kg/cm^2

(D) None of the above

107. Reference standard of IS code for ductile detailing consideration is

(A) IS 456

(B) IS 1893

(C) IS 13920

(D) None of the above

108. Shear reinforcement in beams can be provided in the form of

(A) vertical stirrups

(B) inclined stirrups

(C) bend bars

(D) All of the above

109. For a rectangular homogeneous beam, the shear stress distribution is

(A) semi-circular in shape

(B) parabolic in shape

(C) triangular in shape

(D) rectangular in shape

110. The maximum shear stress for M20 concrete grade is

(A) 2·5 N/mm^2

(B) 2·8 N/mm^2

(C) 3·1 N/mm^2

(D) None of the above

111. When a number of columns is supported by beam and slab, then the foundation provided is known as

(A) spread footing

(B) strap and strip footing

(C) mat or raft footing

(D) None of the above

112. Load factor is defined as

(A) ultimate load/yield load

(B) yield load/safe load

(C) ultimate load/working load

(D) None of the above

113. Which of the following is true for displacement and slope of a point at a fixed support?

(A) Displacement is zero and slope is non-zero

(B) Displacement and slope are zero

(C) Displacement is non-zero and slope is zero

(D) None of the above

114. The ratio of the deflections of the free end of a cantilever due to an isolated load at $\frac{1}{3}$rd and $\frac{2}{3}$rd of the span is

(A) $\frac{1}{7}$

(B) $\frac{2}{7}$

(C) $\frac{3}{7}$

(D) $\frac{2}{5}$

115. For safety landing, aircraft should stop within

(A) 50% of the runway length

(B) 60% of the runway length

(C) 70% of the runway length

(D) 80% of the runway length

116. Choose the incorrect option with regards to site selection for a new airport.

(A) Class of airport

(B) Visibility of the airport site

(C) Runway orientation

(D) Acceptable soil foundation

117. The runway orientation is made in such a way that the landing and take-off directions are

(A) along the wind direction

(B) against the wind direction

(C) perpendicular to the wind direction

(D) None of the above

118. The depression and undulation on the runway are caused due to

(A) improper compaction of subgrade

(B) impact of heavy wheel load

(C) punching effect

(D) All of the above

119. Flexible pavement is having

(A) more thickness than rigid pavement

(B) less thickness than rigid pavement

(C) equal thickness with rigid pavement

(D) None of the above

120. Orifice meter is used to measure

(A) discharge

(B) average velocity

(C) pressure at a point

(D) None of the above

121. Notch is a device used for measuring

(A) rate of flow through pipes

(B) rate of flow through a small channel

(C) velocity through a tank

(D) velocity through an open long channel

122. The discharge through a rectangular channel notch is given by

(A) $Q = C_d \times L \times H^{5/2}$

(B) $Q = 2C_d \times L \times H^{1/2}$

(C) $Q = 1 \cdot 5C_d \times L \times H^{3/2}$

(D) $Q = 2/3C_d \times L \times H^{3/2}$

123. Water hammer in a pipe takes place when

(A) fluid flowing with high velocity

(B) fluid flowing with high pressure

(C) flowing fluid is brought to rest suddenly by closing the valve

(D) fluid flowing with varying velocity

124. Reservoir working table for calculation of potential electrical energy can be derived by using

(A) area capacity curve

(B) mass curve

(C) flow duration curve

(D) hydrograph

125. The flow of purified water supplied in big cities through pipes is treated as

(A) steady flow

(B) uniform flow

(C) non-uniform flow

(D) None of the above

126. Water flows at the rate of 100 m/min in a pipe of 30 cm dia. If the diameter is reduced to 15 cm, then the velocity of flow is

(A) 200 m/min

(B) 300 m/min

(C) 400 m/min

(D) 500 m/min

127. Pelton turbine is a

(A) mixed-flow turbine

(B) tangential-flow turbine

(C) wheel-flow turbine

(D) radial-flow turbine

128. Pelton turbine is generally used for

(A) low head

(B) medium head

(C) high head

(D) None of the above

129. Bernoulli's theorem has been derived under assumption that there is no external force acts on liquid, *except*

(A) atmospheric pressure

(B) force due to gravity

(C) wind pressure

(D) water pressure

130. Which of the following is a non-recording rain gauge?

(A) Tipping bucket-type rain gauge

(B) Symons rain gauge

(C) Stevens weighing rain gauge

(D) Floating-type rain gauge

131. A 70% index wetness means

(A) rain in excess of 30%

(B) rain deficiency of 30%

(C) rain deficiency of 70%

(D) rain in excess of 70%

132. The most commonly adopted method of irrigation for cereal crops is

(A) furrow

(B) sub-surface irrigation

(C) check flooding

(D) surface irrigation

133. The useful storage is the volume of water stored in a reservoir between

(A) minimum drawdown level and maximum pool level

(B) minimum drawdown level and full reservoir level

(C) crest level and maximum pool level

(D) minimum pool level and maximum pool level

134. To determine the reservoir storage capacity for a given uniform demand, which one of the following data is most useful?

(A) Unit hydrograph of the basin

(B) Stage discharge relation for stream at the reservoir

(C) Flow duration curve

(D) Mass curve of the flow volumes for several consecutive years

135. Line of collimation is

(A) same as the line of sight

(B) the line of joining the intersection of cross-hair and optical center of object glass

(C) geometric axis of the telescope

(D) the line parallel to the bubble tube axis

136. A plumb line is

(A) a vertical line

(B) a line parallel to the vertical line

(C) a line perpendicular to the level line

(D) None of the above

137. An instrument error in compass survey is because of

(A) inaccurate levelling

(B) variation in inclination

(C) no counterweight provision to counteract dip

(D) local attraction due to bare current carrying conductors

138. Which of the following is not under instrument errors (screenshot)?

(A) Sluggish needle

(B) Blunt pivot joint

(C) Inaccurate centering

(D) Plain sight not being vertical

139. *ABCD* is a square. Bearing of *AB* is 40°. Hence bearing of *DC* is

(A) 310°

(B) 220°

(C) 40°

(D) None of the above

140. *ABC* is an equilateral triangle. If bearing of *AB* is 150°, then the bearing of *AC* is

(A) 120°

(B) 210°

(C) 270°

(D) None of the above

141. A benchmark is

(A) a reference point

(B) the very first station

(C) the last station where the survey is closed

(D) point of known elevation

142. Axis of altitude level is

(A) parallel to the trunnion axis

(B) perpendicular to the vertical axis

(C) parallel to the line of collimation

(D) perpendicular to the plate level

143. A tensile test is performed on a round bar. After fracture, it has been found that the diameter remains approximately same at fracture. The material under test was

(A) mild steel

(B) copper

(C) cast iron

(D) aluminium

144. Limestone comes under the category of

(A) aqueous rock

(B) stratified rock

(C) sedimentary rock

(D) All of the above

145. Which of the following has the highest crushing strength?

(A) Limestone

(B) Granite

(C) Gneiss

(D) Laterite

146. A brick which is given a wedge-like shape to be used for construction of arch is called

(A) king closer

(B) cornice brick

(C) queen closer

(D) voussoir

147. The formation of whitish deposit on the bricks due to the presence of excess salts is called

(A) efflorescence

(B) disintegration

(C) warping

(D) floating

148. How many treads would be there in a dog-legged stair connecting two floors with a height of 3·6 m? [The rise of the tread is 15 cm.]

(A) 26

(B) 24

(C) 22

(D) None of the above

149. Coal tar is obtained by destructive distillation of

(A) petroleum

(B) wood

(C) coal

(D) bituminous shales

150. Which of the following cements is having highest 3 days compressive strength?

(A) Rapid hardening cement

(B) Supersulphated cement

(C) High alumina cement

(D) Ordinary Portland cement

151. One bag of cement (50 kg) is generally equivalent to

(A) 30 litres

(B) 35 litres

(C) 40 litres

(D) None of the above

152. Precipitation caused by lifting of an air mass due to the pressure difference is called

(A) cyclonic precipitation

(B) convective precipitation

(C) orographic precipitation

(D) None of the above

153. Gantt chart is drawn for

(A) time versus activities

(B) progress versus time

(C) activities versus activities

(D) None of the above

154. CPM network is

(A) event oriented

(B) activity oriented

(C) slack oriented

(D) float oriented

155. Float or slack time is

(A) the earliest time by which an activity may commence

(B) latest time by which an activity can be delayed without hampering the completion of the project

(C) latest allowable time-earliest expected

(D) time available-time required for an activity.

156. If the completion time of a particular project is 20 weeks and its earliest expected time is 22 weeks, then slack time for the project is

(A) 2 weeks

(B) −2 weeks

(C) 0

(D) None of the above

157. Select the incorrect statement.

(A) A critical path always begins at the very first event.

(B) A critical path always terminates at the last event.

(C) Critical activities control the project duration.

(D) A critical path is the one for which the free float is zero.

158. Standard proctor test is used to determine

(A) optimum moisture content

(B) void ratio

(C) coefficient of consolidation

(D) pavement thickness

159. Vane shear test is used for

(A) measurement of shear strength of cohesive soil of low shear strength

(B) measurement of void ratio of sandy solid

(C) measurement of bearing capacity of soils

(D) None of the above

160. The objective of shear test is being conducted to determine

(A) cohesion and angle of shearing resistance of the soil

(B) cohesion and bearing capacity of the soil foundation

(C) shearing resistance and uplift pressure of the soil

(D) None of the above

161. In a flow net

(A) flow lines and equipotential lines meet at right angle to one another

(B) quantity of water flowing through each flow channel is different

(C) larger the dimension of the field, smaller will be the hydraulic gradient

(D) different potential drops occur between two successive equipotential lines

162. The dimensions of length and breadth of the foundation column will depend on the

(A) uplift pressure of the soil beneath the foundation

(B) bearing capacity of the soil

(C) shearing strength of the soil

(D) None of the above

163. Isobar is a curve or contour connecting

(A) all points below the ground surface of unequal vertical earth pressure

(B) vertical earth pressure along the depth of the soil with respect from the ground surface

(C) all points below the ground surface of equal vertical earth pressure

(D) None of the above

164. The ratio of total weight of saturated soil to its total volume is

(A) saturated density

(B) submerged density

(C) wet density

(D) buoyant unit weight

165. Core cutter method is used

(A) to determine density of soil

(B) to obtain sample for direct shear test

(C) to determine bearing capacity of soil

(D) for compaction of soil

166. The water that contains substances which are undesirable or unfit for domestic use is called

(A) potable water

(B) contaminated water

(C) polluted water

(D) sewer water

167. As per IS 1172, the water consumption per head per day for domestic purposes for average condition is

(A) 100 litres

(B) 135 litres

(C) 200 litres

(D) None of the above

168. Turbidity in water is due to

(A) algae

(B) fungi

(C) organic salts

(D) fine particles of clay, silt and organic matter

169. The aeration of water is done for removal of

(A) colour

(B) turbidity

(C) hardness

(D) odour

170. The rate of an item of works depends on

(A) specifications of works

(B) specifications of materials

(C) proportion of concrete mix

(D) All of the above

171. The volume of coarse aggregate in m^3 that is required to make 100 m^3 of 1 : 2 : 4 concrete is

(A) 84

(B) 92

(C) 88

(D) 96

172. The number of standard modular bricks required to make 1 m^3 of masonry is

(A) 480

(B) 500

(C) 520

(D) 540

173. Which of the following is the most correct estimate?

(A) Plinth area estimate

(B) Cube rate estimate

(C) Analysis of rate

(D) Building cost index

174. Book value is

(A) the value of property at the end of the utility without dismantling

(B) the value of property at the end of the utility after dismantling

(C) the value of the property after necessary depreciation

(D) None of the above

175. If a piece of material neither expands nor contracts in volume when subjected to stresses, then the Poisson's ratio must be

(A) 0

(B) 0·25

(C) 0·33

(D) 0·5