2019
ARCHITECTURAL ASSISTANTSHIP
(Diploma Std.)

Time Allowed : 3 Hours]

[Maximum Marks : 300

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

IMPORTANT INSTRUCTIONS

1. The applicant will be supplied with Question Booklet 15 minutes before commencement of the examination.

2. This Question Booklet contains **200** questions. Prior to attempting to answer, the candidates are requested to check whether all the questions are there in series and ensure there are no blank pages in the question booklet. **In case any defect in the Question Paper is noticed, it shall be reported to the Invigilator within first 10 minutes and get it replaced with a complete Question Booklet. If any defect is noticed in the Question Booklet after the commencement of examination, it will not be replaced.**

3. Answer all questions. All questions carry equal marks.

4. You must write your Register Number in the space provided on the top right side of this page. Do not write anything else on the Question Booklet.

5. An answer sheet will be supplied to you, separately by the Room Invigilator to mark the answers.

6. You will also encode your Question Booklet Number with Blue or Black ink Ball point pen in the space provided on the side 2 of the Answer Sheet. If you do not encode properly or fail to encode the above information, action will be taken as per Commission's notification.

7. Each question comprises *four* responses (A), (B), (C) and (D). You are to select ONLY ONE correct response and mark in your Answer Sheet. In case you feel that there are more than one correct response, mark the response which you consider the best. In any case, choose ONLY ONE response for each question. Your total marks will depend on the number of correct responses marked by you in the Answer Sheet.

8. In the Answer Sheet there are **four** circles Ⓐ, Ⓑ, Ⓒ and Ⓓ against each question. To answer the questions you are to mark with Blue or Black ink Ball point pen ONLY ONE circle of your choice for each question. Select one response for each question in the Question Booklet and mark in the Answer Sheet. If you mark more than one answer for one question, the answer will be treated as wrong. *e.g.* If for any item, Ⓑ is the correct answer, you have to mark as follows :

Ⓐ ● Ⓒ Ⓓ

9. You should not remove or tear off any sheet from this Question Booklet. You are not allowed to take this Question Booklet and the Answer Sheet out of the Examination Hall during the time of examination. After the examination is concluded, you must hand over your Answer Sheet to the Invigilator. You are allowed to take the Question Booklet with you only after the Examination is over.

10. **Do not make any marking in the question booklet except in the sheet before the last page of the question booklet, which can be used for rough work. This should be strictly adhered.**

11. Applicants have to write and shade the total number of answer fields left blank on the boxes provided at side 2 of OMR Answer Sheet. An extra time of 5 minutes will be given to specify the number of answer fields left blank.

12. Failure to comply with any of the above instructions will render you liable to such action or penalty as the Commission may decide at their discretion.

SPACE FOR ROUGH WORK

1. When a cantilever is loaded at its free end, maximum compressive stress developed at
   - (A) Bottom fibre
   - (B) Top fibre
   - (C) Neutral Axis
   - (D) Centre of gravity

2. The centre of gravity of an equilateral triangle with each side is ——————— from any of three sides.
   - (A) $\dfrac{a\sqrt{3}}{2}$
   - (B) $\dfrac{a\sqrt{2}}{3}$
   - (C) $\dfrac{a}{2\sqrt{3}}$
   - (D) $\dfrac{a}{3\sqrt{2}}$

3. A framed structure is perfect, if the number of member are ——————— $(2j-3)$, where 'j' is the number of joints.
   - (A) Less than
   - (B) Equal to
   - (C) Greater than
   - (D) Either (A) or (C)

4. A redundant frame is also called ——————— frame.
   - (A) Perfect
   - (B) Imperfect
   - (C) Deficient
   - (D) None of these

5. If a Cantilever beam is subjected to a point load at its free end then the shear force under the point load
   - (A) Zero
   - (B) Less than the load
   - (C) Equal to the load
   - (D) More than the load

6. The point of contraflexture is a point where
   - (A) Shear force changes sign
   - (B) Bending moments changes sign
   - (C) Shear forces is Maximum
   - (D) Bending moment is maximum

7. When contours are equispaced, it indicates

   (A) steep slope   (B) gentle slope

   (C) ✓ uniform slope   (D) plane area

8. There is always a limiting value of load upto which strain totally disappears on the removal of load; the stress corresponding to this load is called

   (A) ✓ Elastic limit   (B) Unit stress

   (C) Yield stress   (D) Shear stress

9. When a cantilever beam is loaded at the free end, maximum compressive stress shall develop at

   (A) ✓ Bottom fibre   (B) Top fibre

   (C) Neutral axis   (D) Centre of gravity

10. The minimum cover over the reinforcement for concrete permanently under seen should be

    (A) 30 mm   (B) 45 mm

    (C) 50 mm   (D) ✓ 75 mm

11. White cement is prepared from raw materials. Which are free from oxides of iron, manganese or

    (A) Aluminium   (B) Silicon

    (C) Calcium   (D) ✓ Chromium

12. The compressive strength of mortar tested for quality of cement should not be less than ——————— kg/cm^2 at the end of 3 days.

    (A) 105   (B) 110

    (C) ✓ 115   (D) 120

13. For a good structural stone, the crushing strength should be greater than
    (A) 50 N/mm²   (B) 100 N/mm²
    (C) 150 N/mm²   (D) 500 N/mm²

14. A timber door formed by vertical boards which are secured by horizontal supports is known as
    (A) Ledged door   (B) Louvred door
    (C) Flush door   (D) Sash door

15. In this type of bond, bricks are laid on edge instead of bed
    (A) Ranking bond   (B) Dutch bond
    (C) Silverlock's bond   (D) Flemish bond

16. The bottom surface of a door or a window opening is known as
    (A) Corbel   (B) Sill
    (C) Soffit   (D) Lintel

17. Bamboo mat board is formed from bonded layers of mats, woven from mechanically or manually cut slivers of uniform size of
    (A) 8–16 mm wide × 0.8–1.2 mm thick
    (B) 20–25 mm wide × 0.2–0.5 mm thick
    (C) 15–20 mm wide × 0.5–0.8 mm thick
    (D) 25–30 mm wide × 1.5 – 2.0 mm thick

18. For solid walls at least ——————— brick thickness should be used if lot of dampness is expected.
    (A) One   (B) One and half
    (C) Half   (D) Two

19. The term 'Madrassa' is given to

    (A)   The Islamic tombs   ✓(B)   The Islamic schools

    (C)   Mosques   (D)   Name of a city

20. Who was first ruler of slave dynasty?

    (A)   Iltumish   ✓(B)   Qutb-ud-din Aibak

    (C)   Alauddin   (D)   Qozi-Fakhr-ud-Din

21. Diwan – i Khairat was a separate department of

    (A)   Public works   ✓(B)   Agriculture

    (C)   Religious system   (D)   Military

22. The Buddhist masonry structures were constructed using

    ✓(A)   Brick and stone

    (B)   Timber and metal

    (C)   Stone and metal

    (D)   Timber and brick

23. The hemispherical dome of stupa is raised over circular plinth called

    (A)   Pradakshina   (B)   Harmika

    ✓(C)   Medhi   (D)   Jagati

24. _____ are huge monoliths, square on plan and tapering to an electron – caped pyramidion at the summit, which was the sacred part.

    (A)   Pyramids   ✓(B)   Obelisks

    (C)   Pylons   (D)   Mastabas

25. The pyramid of Djoser at sakkara is an example of
   - (A) Bent pyramid
   - (B) Stepped pyramid
   - (C) True pyramid
   - (D) Funeral pyramid

26. Which one of the following is an example of French renaissance architecture?
   - (A) St. Peters
   - (B) Chateau dechambord
   - (C) Abbey church
   - (D) Hampton court palace

27. The villa capra is otherwise called as
   - (A) La Rotunda
   - (B) Villa Barbaro
   - (C) Villa poiana
   - (D) Villa Foscari

28. Who was called the father of Early Renaissance Architecture?
   - (A) Palladio
   - (B) Michelangelo
   - (C) Filippo Brunelleschi
   - (D) Christopher wren

29. The important characteristic of the dome of Florence cathedral is its
   - (A) Circular drum
   - (B) Double shell
   - (C) Height
   - (D) Interior decoration

30. St. Andrews University school, Scotland is an example for ————— organization.
   - (A) Clustered
   - (B) Linear
   - (C) Radial
   - (D) Parallel

31. The railings that enclose the square platform at the summit of stupa is called as
   - (A) Chatri
   - (B) Harmika
   - (C) Yashti
   - (D) Prathikshana patha

32. The Partial safety factor specified in IS 456–2000 code for a combination of Live, dead and wind load is

    (A)   1.0   (B) ✓ 1.20

    (C)   1.5   (D)   0.8

33. Due to more head room requirements the section preferred is

    (A)   Singly reinforced section   (B) ✓ Doubly reinforced section

    (C)   'T' beams   (D)   'L' beams

34. The flexural strength of concrete is expressed in

    (A) ✓ $0.7\sqrt{fck}$ (B) $0.6\sqrt{fck}$

    (C) $5000\sqrt{fck}$ (D) $4500\sqrt{fck}$

35. The maximum diameter of the reinforcing bars used in R.C.C. slab is

    (A) ✓ $\frac{1}{8}D$ (B) $\frac{1}{6}D$

    (C) $\frac{1}{4}D$ (D) $\frac{1}{2}D$

36. Is 456–2000 code refers the minimum diameter of bars used in column is

    (A)   10 mm   (B) ✓ 12 mm

    (C)   16 mm   (D)   25 mm

37. For explosive condition, severe and very severe, reduction of 5 mm nominal cover may be made, where concrete grade is

    (A)   M20 and above   (B)   M25 and above

    (C) ✓ M35 and above   (D)   M35 and below

38. A fixed beam of span 5 m carrying a point load 20 KN at a distance of 2 m from 'A' and 3 m from B. Taking $EI = 10 \times 10^3$ KN–m² then the Deflection under the load is

(A) 1.15 mm

(B) 1.15 cm

(C) 1.15 m

(D) 11.5 mm

39. The maximum deflection of a propped cantilever of span 'l' subjected to a UDL of ul per unit length will occur at a distance of

(A) 0.25 l from propped end

(B) 0.33 l from propped end

(C) 0.422 l from propped end

(D) 0.615 l from propped end

40. A simply supported beam of span 4 m carries a UDL of 2 KN/m over the entire span. Taking $EI = 80 \times 10^9$ N-mm² then the maximum deflection at centre of beam is

(A) 83.3 mm

(B) 83.3 cm

(C) 83.3 m

(D) 80.3 mm

41. A cantilever beam of 2 m long is subjected to a UDL of 5 KN/m over its entire length. Taking $EI = 2.5 \times 10^{12}$ N-mm² then the maximum slope at free end of beam is

(A) 0.00027 radians

(B) 0.0027 radians

(C) 0.027 radians

(D) 0.27 radians

42. The maximum slope of a cantilever carrying a point load at its free end is at the

(A) fixed end

(B) centre of span

(C) free end

(D) $\frac{1}{3}$ of span

43. The poisonous gas, which lead to the Bhopal tragic incidence MIC is abbreviated as

(A) Methyl ISO cyanide

(B) Methyl ISO cyanate

(C) Methyl ISO carbide

(D) Methyl ISO carbonate

44. An Odour intensity is expressed as

(A) Threshold odour number ✓   (B) Table odour number

(C) Threshold odour norm   (D) Table odour norm

45. The term which is used to indicate the water which is not chemically pure, but does not contain anything harmful to the human body

(A) Potable water   (B) Palatable water

(C) Wholesome water ✓   (D) Pure water

46. It is used to indicate the water which returns to the surface of earth in various forms like rain, snow etc.

(A) Evaporation   (B) Percolation

(C) Transpiration   (D) Precipitation ✓

47. The waste water discharged from Bathrooms and kitchen are called as

(A) Sullage ✓   (B) Sewage

(C) Night–soil   (D) Garbage

48. Air·valves are provided at the ———— of the water pipe.

(A) Summits ✓   (B) Base

(C) Top   (D) Foot

49. A device located at the bottom of the tank for the purpose of draining a tank for cleaning, maintenance etc. is know as

(A) Wash out valve ✓   (B) Gate valve

(C) Sluice valve   (D) Control valve

50. The Voltages in the range of 300 kv and 765 kv are called
   (A) High Voltage   (B) Extra High Voltage ✓
   (C) Ultra High Voltage   (D) Low Voltage

51. The Voltage stepped up by step up substation is reduced to 66 kV for secondary transmission using
   (A) Step up substation   (B) Secondary substation
   (C) Primary grid substation ✓   (D) Distribution substation

52. Which has highest audible sound
   (A) A shrill whistle ✓   (B) Whispering
   (C) Rustle of leaves   (D) Average Auditorium

53. The unit of frequency is
   (A) Hertz ✓   (B) Decibel
   (C) Pascal   (D) Newton

54. Recommended service illuminance in general lighting for interiors in Architectural offices is
   (A) 350 Lux   (B) 450 Lux ✓
   (C) 250 Lux   (D) 650 Lux

55. Water Requirements for Air conditioning (water cooled plants) systems is
   (A) 40 Litres per sq.mtr of area to be air conditioned
   (B) 50 Litres per sq.mtr of area to be air conditioned
   (C) 60 Litres per sq.mtr of area to be air conditioned
   (D) 70 Litres per sq.mtr of area to be air conditioned ✓

56. Enthalpy is
   (A) Sensible heat + latest heat
   (B) Sensible heat – latent heat
   (C) Only the sensible heat
   (D) Only the latent heat

57. NFPA is referred as
   (A) National Fire Protection Agency
   (B) National Federation Protection Agency
   (C) National Fire Protection Association
   (D) National Federation Protection Association

58. In Residential buildings, the fire Exits shall be so located that the travel distance on the floor shall not exceed
   (A) 30 m
   (B) 40 m
   (C) 50 m
   (D) 60 m

59. Identify the material which is used as Adsorbers in the process of Dehumidification.
   (A) Activated alumina
   (B) Solutions of ammonia
   (C) Solutions of calcium
   (D) Salts

60. Levelling deals with measurements in a
   (A) Horizontal plane
   (B) Vertical plane
   (C) Both Horizontal and Vertical plane
   (D) Angular plane

61. It is the type of surveying in which the curvature of the earth is considered.
   (A) Geodetic surveying
   (B) Astronomical surveying
   (C) City surveying
   (D) Plane surveying

62. In magnetic compass, the direction of lines are read by

(A) Magnetic needle   (B) Line of sight

(C) Graduated circle   (D) Compass box

63. It is one in which the line of sight can be reversed by revolving the telescope through 180° in the vertical plane

(A) Transit theodolite   (B) Non transit theodolite

(C) Plain theodolite   (D) Y-theodolite

64. The contour map shows the

(A) Cross Section of Area   (B) Topography of Area

(C) Longitudinal Section of Area   (D) View of an Area

65. The contour interval for a particular map is

(A) Kept constant   (B) Made variable

(C) Made irregular   (D) Keeps increasing

66. A closed contour, with lower values inwards represents

(A) A Depression   (B) A Hill

(C) An Overhanging cliff   (D) A Saddle

67. Contours of same levels cross or intersect each other on the map represents

(A) A Vertical cliff   (B) An Overhanging cliff

(C) A Hill   (D) A Hillock

68. The limiting length of offset depends upon

(A) Scale of plotting ✓

(B) Method of measurement

(C) Method of layout

(D) Lie of land

69. For, taking an oblique offset which makes an angle of 45° with the chain line, the instrument used is the

(A) Adjustable cross staff

(B) Open cross staff

(C) French cross staff ✓

(D) Optical cross staff

70. The method of computing the quantities of various items of work is called

(A) System ✓

(B) Grouping

(C) Taking off

(D) Billing

71. A revised estimate is a

(A) Detailed estimate ✓

(B) Rough estimate

(C) Final estimate

(D) Approximate estimate

72. The quantity of cement required for 1 m³ of cement concrete 1 : 4 : 8 is

(A) 267 kg

(B) 367 kg

(C) 467 kg

(D) 167 kg ✓

73. The quantity of cement required for 1 m³ of cement concrete 1 : 5 : 10 is

(A) 137 kg ✓

(B) 237 kg

(C) 337 kg

(D) 447 kg

74. The value of the property shown in the account book in that particular year is

- (A) Market value
- (B) Book value ✓
- (C) Scrap value
- (D) Salvage value

75. The method in which, the cost of a project is prepared by multiplying the cost per unit by the number of units is

- (A) Plinth area method
- (B) Carpet area method
- (C) Typical bay method
- (D) Service unit method ✓

76. Year's purchase is equal to

- (A) $\dfrac{\text{Capital value}}{\text{Net income}}$ ✓

- (B) $\dfrac{\text{Capital value}}{\text{Gross income}}$

- (C) $\dfrac{\text{Net income}}{\text{Capital value}}$

- (D) $\dfrac{\text{Gross income}}{\text{Capital value}}$

77. A series of offsets were taken from a chain line to a curved boundary line at a regular interval of 5 metres. The lengths of the offsets are 2 m, 1.6 m, 2.6 m, 2.2 m, 2.8 m, 3.8 m, 3.6 m, 3.4 m and 3.6 m. What is the area of the strip using Trapezoidal rule?

- (A) 110 m²
- (B) 112.78 m²
- (C) 114 m² ✓
- (D) 112.67 m²

78. The difference between the state of the environment after the action is taken and if no action is taken is called as

    (A) Action impact

    (B) Alternative state

    (C) Action - Reaction

    (D) Environmental impact ✓

79. An environmental impact may be ——————— or ———————.

    (A) Harmful, Not harmful

    (B) Direct, Indirect ✓

    (C) Cost effective, Non-cost effective

    (D) Ecological, Environmental

80. The Floor Area Ratio (FAR) is obtained by dividing

    (A) Total covered area on all floors by plot area ✓

    (B) Total covered area in the ground floor by plot area

    (C) Total covered area in the ground floor by total covered area on all floors

    (D) Total covered area on all floor by total covered area in the ground floor

81. The parking standards to be followed for a residential plot with plotted housing is

    (A) 2.0 Ecs/100 sqm plot area

    (B) 2.0 Ecs/100 sqm built up area

    (C) 2.0 Ecs/250-300 sqm plot area ✓

    (D) 2.0 Ecs/250-300 sqm floor area

82. The minimum width of staircase, minimum width of tread and maximum height of riser for residential buildings are

    (A) 1.5 m, 300 mm and 150 mm

    (B) 1.5 m, 250 mm and 190 mm

    (C) 1.0 m, 250 mm and 190 mm ✓

    (D) 1.0 m, 300 mm and 150 mm

83. The Town which is in worst stage where inhabitants prefer to shift is known as

(A) Metropolis   (B) Magalopolis

(C) Tyrannopolis   (D) Necropolis ✓

84. Meeting place for the population in urban area is known as

(A) Town centre ✓   (B) Urban centre

(C) City centre   (D) Civic centre

85. LIC Housing Finance Limited was established in the year

(A) 1989 ✓   (B) 1983

(C) 1985   (D) 1986

86. For a building of height upto 10.0 m the size of the ventilation shaft shall not be less than

(A) 1.2 m^2 ✓   (B) 1.5 m^2

(C) 2.4 m^2 (D) 2.8 m^2

87. Which of the following norms for differently abled within segregated toilets is INCORRECT?

(A) One special W.C. in a set of toilet shall be provided with wash basin near the entrance

(B) Minimum clear opening of door shall be 1.00 m ✓

(C) The W.C. seat shall be 500 mm from the floor

(D) The door shall swing out

88. ——————— function returns the second element.

(A) CADR ✓   (B) CADD

(C) CADF   (D) CADA

89. _____ command enables to draw objects by rotating entities against a line in 3D.

   (A) ✓ REVSURF   (B) REVLINE

   (C) ROLINE   (D) ROLEX

90. Filter Bit maps is used in rendering for

   (A) ✓ Smoothing or anti-aliasing

   (B) Rough texturing or Hardening

   (C) Lighting or illuminating

   (D) Darken or blacking

91. The function key shortcut F10 indicates

   (A) ✓ Polar toggle

   (B) Tablet

   (C) Help

   (D) Text Window

92. _____ eliminates the hidden lines from a 3D generated view.

   (A) HIV   (B) DIV

   (C) HDV   (D) ✓ HIDE

93. _____ command will tell you various coordinates, lengths etc of selected entity.

   (A) LOOP

   (B) LACT

   (C) LOOSE

   (D) ✓ LIST

94. The command aliases 'REC' means

    (A) Recreate

    (B) Rectangle ✓

    (C) Reclose

    (D) Record

95. The horizontal window at the bottom of AUTO CAD window is called the

    (A) Status bar

    (B) Command window ✓

    (C) Tool bar

    (D) None of the above

96. ──────── creates a dimension that starts from an extension line of a previously created dimension.

    (A) Baseline ✓

    (B) Continue

    (C) Linear

    (D) Extension

97. Name three different subject level used in 'EDIT MESH'

    (A) Vertex, face, edge ✓

    (B) Detach, collapse, delete

    (C) Collapse, mesh, detach
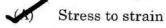
    (D) Face, vertex, delete

98. The ratio between the change in volume and original volume of the body is called
   (A)   Compressive strain
   (B)   Volumetric strain ✓
   (C)   Tensile strain
   (D)   Shear strain

99. A composite section, contains 4 different materials, the stresses in all the different material will be
   (A)   Zero
   (B)   Equal
   (C)   Different ✓
   (D)   In the ratio of their Area

100. Which of the following is a statically Indeterminate structure?
   (A)   A load supported on one member
   (B)   A load supported on two member
   (C)   A load supported on three member ✓
   (D)   Either (A) or (B)

101. In a Triangular section, the maximum shear stress occurs at
   (A)   Apex of the triangle
   (B)   Mid of the height ✓
   (C)   1/3 of the height
   (D)   Base of the triangle

102. If a forces acts on a body, it sets up some resistance to the deformation this resistance is known as
   (A)   Stress ✓
   (B)   Strain
   (C)   Elasticity
   (D)   Modulus of Elasticity

103. The BM at the centre of a simply supported beam carrying a uniformly distributed load is where W-uniformly distributed load l-span of the Beam
   (A) Wl
   (B) $\dfrac{Wl}{2}$
   (C) $\dfrac{Wl^2}{4}$
   (D) $\dfrac{Wl^2}{8}$ ✓

104. The value of Poisson's ratio for steel varies from

● (A)   0.20 to 0.25   ✓ (B)   0.25 to 0.35

(C)   0.35 to 0.40   (D)   0.40 to 0.50

105. For analyzing pin jointed frames by the method of sections, the section should be so chosen that it cuts

(A)   Only three member at a time

(B)   Any number of members but only two members with unknown forces

✓ (C)   Any number of members but only three members with unknown forces

(D)   Not more than one member

106. Modulus of elasticity is the ratio of

✓ (A)   Stress to strain

(B)   Stress to original length

(C)   Deformation to original length

(D)   All of above

107. Torque transmitted by a solid shaft of diameter (D), when subjected to a shear stress (τ) is equal to

(A) $\dfrac{\pi}{16}\tau D^2$ ✓ (B) $\dfrac{\pi}{16}\tau D^3$

(C) $\dfrac{\pi}{32}\tau D^2$ (D) $\dfrac{\pi}{32}\tau D^3$

108. In case of a circular section at the section modulus is given as

✓ (A) $\dfrac{\pi}{32}d^3$ (B) $\dfrac{\pi}{16}d^2$

(C) $\dfrac{\pi}{16}d^3$ (D) $\dfrac{\pi}{64}d^4$

109. Which of the following chemical should not be added to cement manufacturing?

   (A) SiO_2 (B) CaO

   (C) Al_2O_3 (D) ✓ MgO

110. The rocks that are formed by the cooling of magma are known as

   (A) ✓ Igneous rocks   (B)   Sedimentary rocks

   (C)   Metamorphic rocks   (D)   Silicious rocks

111. Which of the following is not a defect in steel?

   (A)   Cavities   (B)   Cold shortness

   (C)   Red shortness   (D) ✓ Solidification

112. Which of the following is not an application of Timber?

   (A)   Windows   (B)   Doors

   (C)   Furniture   (D) ✓ Hardware

113. A good timber should have ——————— fibres.

   (A)   Concentric   (B) ✓ Straight

   (C)   Angular   (D)   Twisted

114. ——————— are the pieces of timber which extend from eaves to the ridge.

   (A)   Batten   (B) ✓ Rafter

   (C)   Purlin   (D)   Joist

115. A brick moulded with a rounded angle is termed as a

   (A) ✓ Bullnose   (B)   Notch

   (C)   Niche   (D)   Quoin

116. Sealants can be applied in the temperature range of

    (A)   50°C – 100°C   (B)   100°C–150°C

    (C)   150°C–200°C   (D)   5°C–50°C

117. PVC pipes are totally Rust – Proof, Rot Proof termite Proof and

    (A)   Air proof   (B)   Noise proof

    (C)   Water proof   (D)   Odour proof

118. Plastic which become soft when heated and hard when cooled are called

    (A)   Thermosetting   (B)   Thermo-plastic

    (C)   Polymer plastic   (D)   Elastomers

119. Ideal characteristic of a good paint is that it should cover

    (A)   Maximum area of the surface with maximum quantity of paint

    (B)   Maximum area of the surface with minimum quantity of paint

    (C)   Minimum area of the surface with minimum quantity of paint

    (D)   Minimum area of the surface with maximum quantity of paint

120. Dark blue colour is rendered when ———————— is added to manufacture of glass.

    (A)   Cobalt oxide   (B)   Tinoxide

    (C)   Cuprous oxide   (D)   Manganese dioxide

121. The alloy of Brass consisting of 70% copper and 30% zinc is

    (A)   Delta metal   (B)   Cartridge Brass

    (C)   Low brass   (D)   Naval brass

122. The discovery of ———————— played an important role in Harappan urban development, particularly counteracting the effects of flooding.

(A) Fired brick   (B) Drainage system

(C) Great bath   (D) Wells

123. The useful buildings in the context of agora are termed as

(A) Stoa   (B) Mausoleum

(C) Epidarus   (D) Propylea

124. The three classical orders of the Greek are

(A) The ionic, doric and Corinthian

(B) The ionic, doric and composite

(C) The Tuscan, ionic and doric

(D) The Corinthian, composite and Tuscan

125. The Roman baths are also called as

(A) Thermac   (B) Basilica

(C) Forum   (D) Cavea

126. What is the maximum capacity of spectators that the colosseum could accommodate?

(A) 10,000   (B) 50,000

(C) 20,000   (D) 80,000

127. The Pyramids are built of

(A) Lime stone   (B) Brick

(C) Granite   (D) Timber

128. Relation in magnitude, quantity or degree between two or more similar things is called

   (A) Spire ●
   (B) Rath
   (C) Ratio ✓
   (D) Sill

129. The act or process of repeating formal elements or motifs in a design is

   (A) Ratio
   (B) Stoa
   (C) Repetition ✓
   (D) Quion

130. The study of measurement, size and proportion of human body is

   (A) Anthropology
   (B) Anthropometry ✓
   (C) Human science
   (D) Psychology

131. In Rankine's theory for active earth pressure, the frictional resistance between the retaining wall and the retained material is

   (A) accounted
   (B) neglected ✓
   (C) zero
   (D) taken in account in little amount

132. The amount of reinforcement in the beam is less then the proper requirement of reinforcement, then the section is called

   (A) balanced section
   (B) over reinforced section
   (C) under reinforced section ✓
   (D) critical section

133. In a singly reinforced beam, the depth of lever arm is

   (A) $\dfrac{d-n}{3}$
   (B) $\dfrac{2d-n}{3}$
   (C) $\dfrac{3d-n}{3}$ ✓
   (D) $\dfrac{4d-n}{3}$

134. The over all depth of slab is 300 mm or more then the shear strength factor 'K' is

   (A)   1.30   (B)   1.25

   (C)   1.05   (D) ✓ 1.0

135. In plain concrete footings, the thickness at the edge should be at least
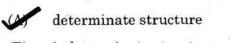
   (A)   100 mm   (B) ✓ 150 mm

   (C)   200 mm   (D)   250 mm

136. A bucket full of water, carried by a person in his hand, is an excellent example of an

   (A)   Axial load   (B)   Direct load

   (C) ✓ Eccentric load   (D)   Biaxial load

137. A column of length l is hinged at its both ends. Its equivalent length (le) will be equal to

   (A) ✓ $le = l$ (B) $le = 2l$

   (C) $le = 0.5l$ (D) $le = 0.707l$

138. Fixing moment over a simply supported end is

   (A) ✓ zero   (B)   positive

   (C)   negative   (D)   infinity

139. A three hinged arch is statically a

   (A) ✓ determinate structure

   (B)   indeterminate structure

   (C)   compressive member

   (D)   tension member

140. Identify, which does not come under the underground sources of water.

   (A) Infiltration galleries
   (B) Infiltration wells
   (C) Springs
   (D) Storage reservoirs

141. Presence of SO_2 gas in the atmosphere leads to ———— in Building materials.

   (A) Cracking
   (B) Reduction in tensile strength
   (C) Brittlement
   (D) Discoloration

142. Tannery wastes are used for the production of

   (A) Leather Boards
   (B) Cardboards
   (C) Hand made paper
   (D) Industrial wax

143. Activated carbon is added in raw water ———— any treatment takes place.

   (A) After
   (B) Before
   (C) Later
   (D) During

144. Disinfection of drinking water is done to remove

   (A) Colour
   (B) Odour
   (C) Turbidity
   (D) Bacteria

145. Skilled supervision for slow sand filters is

   (A) Required
   (B) Essential
   (C) Not Essential
   (D) Mostly Required

146. Identify the form in which surface sources of water available

   (A) Infiltration galleries
   (B) Wells
   (C) Springs
   (D) Streams

27

147. When the chlorine is added in water after all treatment, it is called as
   (A) Post–chlorination
   (B) Pre–chlorination
   (C) Dechlorination
   (D) Double chlorination

148. Turbidity level of water to be used for domestic purposes as per Indian standards is
   (A) 4 to 8 p.p.m.
   (B) 2 to 4 p.p.m.
   (C) 1 to 5 p.p.m.
   (D) 5 to 10 p.p.m.

149. Identify the suspended impurities in the given list below:
   (A) Algae
   (B) Sodium
   (C) Metal
   (D) Gases

150. Which one mentioned below is a underground source?
   (A) Wells
   (B) Rivers
   (C) Lakes
   (D) Imponded Reservoirs

151. Which one mentioned below is a surface source?
   (A) Springs
   (B) Wells
   (C) Infiltration Galleries
   (D) Lakes

152. Sources of water are
   (A) Surface Source and Underground Source
   (B) Main Source and Sub Main Source
   (C) Primary Source and Secondary Source
   (D) Continuous Source and Intermitent Source

153. In public halls and auditoriums, the sound persist even after the source of sound base ceased. This persistence of sound is known as

(A) Echo

(B) Reverberation

(C) Loudness

(D) Reflection

154. It is defined as the magnitude of luminance or light reflected from a surface

(A) Luminous intensity

(B) Illuminance

(C) Efficacy

(D) Luminous flux

155. It consist of mats or screens of split wire or glass wool

(A) Dry filters

(B) Spray washers

(C) Viscous filters

(D) Electric precipitators

156. The role of Fitters in Air conditioning system is

(A) To clean air

(B) To cool air in summer season

(C) To heat air in winter season

(D) To add moisture to the heated air

157. It is defined as the heat energy added or removed as a substance changes state while temperature remains constant.

(A) Dew point

(B) Enthalpy

(C) Latent heat

(D) Sensible heat

158. It is a depressed temperature measured on mercury in a glass thermometer with the sensing bulb.

(A) Dew point

(B) Dry bulb temperature

(C) Wet bulb temperature

(D) Sensible Heat

[Turn over

159. Which is the Instrument which registers the number of revolutions made by a wheel.

(A) Passometer   (B) Pedometer

(C) Odometer   (D) Speedometer

160. The principle of surveying is the survey work should be carried out from

(A) whole to part   (B) part to whole

(C) part to part   (D) whole to whole

161. The centre of gravity of a body is the point at which the whole

(A) volume of the body is assumed to concentrated

(B) area of the surface of the body is assumed to be concentrated

(C) weight of the body is assumed to be concentrated

(D) both (A) and (B)

162. Which of the following error is not an instrumental error in compass surveying?

(A) Bent Pivot   (B) Sluggish Needle

(C) Magnetic Changes   (D) Improper Balancing Weight

163. In chain surveying process, for a well conditioned triangle, no angle should be less than

(A) 10°   (B) 15°

(C) 20°   (D) 30°

164. Chain surveying is suitable for surveys of

(A) Small areas in open ground

(B) Small areas with crowded details

(C) Large areas in open ground

(D) Large areas with crowded details

165. For calculation of an area of a different shaped figure bounded by straight lines, the figure is generally converted into number of

(A) Squares   (B) Rectangles

(C) Triangles ✓   (D) Polygons

166. The theodolite in which the telescope can be revolved through a complete revolution in a vertical plane is known as a

(A) Non-transmit theodolite   (B) Tilting theodolite

(C) Transit theodolite ✓   (D) Transmit theodolite

167. In a closed traverse, the algebraic sum of departure and latitude must be equal to

(A) 90°   (B) 180°

(C) 0° ✓   (D) 210°

168. Fine adjustment in a theodolite is done by the

(A) Focusing stud   (B) Tangent screw ✓

(C) Clamp screw   (D) Transit screw

169. The process by which the positions of plane table board at various survey stations are kept parallel is known as

(A) Centering   (B) Levelling

(C) Orientation ✓   (D) Deflection

170. One link means the distance from

(A) Centre to centre of middle rings ✓

(B) Centre to centre of outer rings

(C) Centre to centre of inner rings

(D) Centre to centre of outer ring and middle ring

171. The unit of bending stress in a rectangular bean is

(A) mm^2 (B) mm^3

(C) N/mm^2 (D) N/m

172. An arch of 2.50 m span subtends at an angle of 80° at the centre. The thickness of arch is 30 cm and breath of wall is 40 cm. Calculate the quantity of arch masonry work.

(A) 3.52 μ.m.   (B) 0.082 μ.m.

(C) 0.352 μ.m.   (D) 0.82 μ.m.

173. Number of bricks required for 1 m³ brick work in C.M. 1 : 4 using 1st class bricks

(A) 750 Nos   (B) 746 Nos

(C) 300 Nos   (D) 500 Nos

174. What is the formula used for determining the area of parabola?

(A) Area = $\frac{2}{3}$ × base × height

(B) Area = $\frac{1}{3}$ × base × height

(C) Area = $\frac{1}{2}$ × base × height

(D) Area = $\frac{3}{2}$ × base × height

175. Advancement of money against any form of security of a property is

(A) Lease   (B) Mortgage

(C) Equity   (D) Annuity

176. The following perpendicular offsets were taken at 5 m intervals from a traverse line to an irregular boundary line 2.10 m, 3.15 m, 4.50 m, 3.6 m, 4.58 m, 7.85 m, 6.45 m, 4.65 m, 3.14 m. What is the area of the irregular boundary using Simpson's rule?

(A)   177.87 m²

(B)   187 m²

(C)   188.83 m²

(D)   185 m²

177. A narrow strip of land 60 m long is divided into 6 equal division of 10 m each and the width are measured at the mid point of each division as 3.0 m, 3.6 m, 4.2 m, 4.0 m, 3.8 m and 3.4 m. What is the area of the land using mid ordinate rule?

(A)   250 m²

(B)   220 m²

(C)   320 m²

(D)   200 m²

178. Volume of cement required for 1 m³ of cement mortar 1 : 3?

(A)   1 m³

(B)   0.33 m³

(C)   0.2 m³

(D)   0.5 m³

179. Which of the following are standard land use classifications?

(A)   Multistorey buildings, special buildings, simple residential

(B)   Residential, industrial, institutional and commercial

(C)   Neighbourhood, Totlot, township

(D)   Block development, Street development, Cul-de-sac

180. A typical land use plan consists of

(A)   A map with districts or zones and text about the plan

(B)   Plan of buildings and public facilities in the area

(C)   Street layouts with dimensions

(D)   Natural areas and the vegetation in them

[Turn over

181. The master plan of Gandhinagar was finalised and approved in

    (A) ✓ 1966   (B) 1968

    (C) 1969   (D) 1964

182. Le Corbusier got the idea of the Urban Design of Chandigarh from the

    (A) Camel Body   (B) ✓ Human Body

    (C) Frog Body   (D) Fish Body

183. Who is not eligible to prepare plans, designs and drawings for any type of buildings/ developments including multi-storied buildings, layout developments?

    (A) Architect Grade-I

    (B) Registered Engineer Grade-II

    (C) Architect Grade-II

    (D) ✓ Architect Grade-II and Registered Engineer Grade-II

184. The heritage buildings and precincts of National or historical importance and are listed as Grade-I buildings deserves

    (A) Intelligent conservation

    (B) Protection of unique features and attributes

    (C) Reconstruction of damaged parts

    (D) ✓ Careful preservation

185. No construction is allowed in case of sites located within the distance upto —————— in all directions from the protected monuments as notified under archaeological monuments and ancient sites remains act 2010.

    (A) ✓ 100 m

    (B) 150 m

    (C) 200 m

    (D) 300 m

186. The option 'TTR' means

    (A)   Total Record

    (B)   Tan Tan Radius

    (C)   Tan Tol Radius

    (D)   Titration Radius

187. —————— command allows to view objects in different shade mode.

    (A)   Colour mode

    (B)   Shadow mode

    (C)   Shade mode

    (D)   Super mode

188. —————— command create 3D objects out of 3D figure.

    (A)   EXTENSION   (B)   EXTRUDE

    (C)   UNION   (D)   UCS

189. In VPOINT, the value 0, 0, −1 indicate

    (A)   Rear view   (B)   Left view

    (C)   Right view   (D)   Bottom view

190. —————— cleans up the display by recalculating the drawing file data base and drawing the screen over.

    (A)   RETOOL   (B)   RECAL

    (C)   RECALL   (D)   REGEN

191. What type of region is provided in max software?

(A) Circular and plane

(B) Plane and volume

(C) Circular and fence ✓

(D) Rectangle and planer

192. How can you create a cylinder object in 3DS max?

(A) Curvature, height, rollout

(B) Centerpoint, radius, toruxing

(C) Centerpoint, radius, height ✓

(D) Radius, curvature, height

193. RGB stands

(A) Rendering Green Object

(B) Red Green Blue ✓

(C) Red Green Brown

(D) Red Green Box

194. The command aliases 'LA' implies

(A) Layout   (B) Later

(C) Layer ✓   (D) Last

195. The command aliases 'M' denotes

(A) Mirror   (B) Move ✓

(C) Mline   (D) Material

196. ——————— used to join two lines by a Taper.

    (A)   JOINL

    (B)   CHAMFER

    (C)   TAPER

    (D)   TAPJL

197. ——————— allows you to draw multiple copies of the object with a single command.

    (A)   MCLIP   (B)   MCOP

    (C)   ARRAY   (D)   BARROW

198. The command aliases 'SHA' denotes

    (A)   Shade mode

    (B)   Shape

    (C)   Shadow

    (D)   Scale

199. The command aliases for DIMRADIUS is

    (A)   DIMRA

    (B)   DRA

    (C)   RADD

    (D)   RADS

200. The command aliases for 3DFACE is

    (A)   3 DF   (B)   3 F

    (C)   3 FCE   (D)   FD

[Turn over

SEAL