TNPSC
CES

Previous Year Paper
(Architectural Assistantship) Paper-I
27 May, 2023

Question Booklet No. :

CESARA/2023

Register Number

2023

Paper – I

ARCHITECTURAL ASSISTANTSHIP

(Diploma Standard)

Duration : Three Hours] **[Total Marks : 300**

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

IMPORTANT INSTRUCTIONS

1. You will be supplied with this question booklet 15 minutes prior to the commencement of the examination.
2. This question booklet contains **200** questions. Before answering the questions, you shall check whether all the questions are printed serially and ensure that there are no blank pages in the question booklet. **If any defect is noticed in the question booklet, it shall be reported to the invigilator within the first 10 minutes and get it replaced with a complete question booklet. If the defect is reported after the commencement of the examination, it will not be replaced.**
3. Answer **all** the questions. All the 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 shade the answers. Instructions regarding filling of answers etc., which are to be followed mandatorily, are provided in the answer sheet and in the memorandum of admission (Hall Ticket).
6. You shall write and shade your question booklet number in the space provided on page one of the answer sheet with **BLACK INK BALL POINT PEN.** If you do not shade correctly or fail to shade the question booklet number, your answer sheet will be invalidated.
7. Each question comprises of five responses (answers) : i.e. (A), (B), (C), (D) and (E). You have to select ONLY ONE correct answer from (A) or (B) or (C) or (D) and shade the same in your answer sheet. If you feel that there are more than one correct answer, shade the one which you consider the best. **If you do not know the answer, you have to mandatorily shade (E).** In any case, choose ONLY ONE answer for each question. If you shade more than one answer for a question, it will be treated as a wrong answer even if one of the given answers happens to be correct.
8. 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 room during the time of the examination. After the examination, 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.
9. **You should not make any marking in the question booklet except in the sheets before the last page of the question booklet, which can be used for rough work. This should be strictly adhered to.**
10. Failure to comply with any of the above instructions will render you liable for such action as the Commission may decide at their discretion.

SEAL

SPACE FOR ROUGH WORK

1. Fire load is expressed as

(A) k cal/m^2 (B) k cal/m^3

(C) g cal/m^2 (D) g cal/m^3

(E) Answer not known

2. The average time required by each lift in taking one full load of passengers from ground floor discharging them in various upper floors and coming back to ground floor for taking the fresh passengers for the next trip is

(A) total trip time (B) delay trip time

(C) car trip time (D) round trip time

(E) Answer not known

3. A power driven, inclined, continuous stairway used for raising or lowering passengers

(A) Elevators (B) Escalators

(C) Passenger lifts (D) Dumb waiters

(E) Answer not known

4. With respect to Air Conditioning system, VAV is

(A) Verband Air Volume (B) Variable Advanced Volume

(C) Variable Air Volume (D) Verband Air Variables

(E) Answer not known

5. Identify the refrigerant which is less ozone depleting?

(A) R-12 (B) R-12 A

(C) R-22 (D) R-410 A

(E) Answer not known

6. Identify the material which is not commonly used in electrical system

(A) Porcelain
(B) Glass
(C) Synthetic Resin
(D) Galvanised iron
(E) Answer not known

7. The amount of oxygen required for microbes to carry out the biological decomposition of dissolved solids or organic matter in sewage under aerobic conditions at standard temperature is known as the

(A) Total oxygen demand
(B) Chemical oxygen demand
(C) Biochemical oxygen demand
(D) Theoretical oxygen demand
(E) Answer not known

8. Pressure relief valve is provided to prevent

(A) the increase of pressure after certain safe limit
(B) back flow, when the pump is slopped
(C) the water flowing out of the suction pipe
(D) water flowing in the down stream
(E) Answer not known

9. The portion of rainfall which penetrated into the ground and is the part of ground water is called

(A) Percolation
(B) Run-off
(C) Transpiration
(D) Evaporation
(E) Answer not known

10. A pipe carrying sewage under ground is called as

(A) Sewage pipe
(B) Vent pipe
(C) Waste pipe
(D) Sewer
(E) Answer not known

11. Which of the following is not a personal error in levelling?

(A) Careless levelling of the instrument

(B) Entering wrong remark

(C) Faulty focusing arrangement

(D) Omitting the entry

(E) Answer not known

12. The vertical distance between two adjacent contour lines is called a

(A) Contour gradient

(B) Vertical equivalent

(C) Contour interval

(D) Level line

(E) Answer not known

13. The contour interval is inversely proportional to the

(A) steepness of the area

(B) extent of the area

(C) scale of the map

(D) mean sea level

(E) Answer not known

14. In theodolite, the line of collimation is also known as

(A) Axis
(B) Horizontal line
(C) Line of sight
(D) Bubble line
(E) Answer not known

15. The method of surveying using triangulation where no angular measurements are taken and only linear measurements are taken is known as

(A) Compass surveying
(B) Theodolite surveying
(C) Chain surveying
(D) Plane table surveying
(E) Answer not known

16. Which of the following is not an obstacle in chain surveying?

(A) Chaining free but vision obstructed
(B) Chaining obstructed but vision free
(C) Chaining and vision obstructed
(D) Chaining and vision free
(E) Answer not known

17. This process ascertains the fact that the point on the paper represents the station point on ground. It is carried out by means of plumbing fork and plumb bob

(A) Centering
(B) Levelling
(C) Orientation
(D) Deflection
(E) Answer not known

18. It is used to mark the positions of stations or terminal points on a survey line

(A) Pegs
(B) Pole
(C) Rod
(D) Arrow
(E) Answer not known

19. The net annual value of a property, which is obtained after deducting the amount of yearly repairs from the gross income, is termed as

(A) Book value
(B) Scrap value
(C) Rateable value
(D) Deferred value
(E) Answer not known

20. The quantities of different materials and number of different categories of labour required per unit of particular items of works are given in the

(A) Measurement Book
(B) Schedule of Rates
(C) Standard Data Book
(D) Lead Statement
(E) Answer not known

21. The gradual exhaustion of the usefulness of a property is termed as

(A) Sinking
(B) Depreciation
(C) Obsolescence
(D) Salvage
(E) Answer not known

22. The actual expenditure incurred in the construction of a school building which have a total length of main walls 140 m is Rs. 9.17 lakhs. What will be the approximate cost of a similar school building which will have 180 m length of main walls?

(A) 16.55 lakhs
(B) 15.91 lakhs
(C) 12.35 lakhs
(D) 11.79 lakhs
(E) Answer not known

23. A detailed specification form a part of the contract document and they are divided into three Groups, namely

(i) General provisions
(ii) Technical provisions
(iii) Standard specifications
(iv) Open provisions

Choose the correct answer from given above

(A) (i), (ii) and (iii)
(B) (ii), (iii) and (iv)
(C) (i), (ii) and (iv)
(D) (i), (iii) and (iv)
(E) Answer not known

24. For cement concrete (except for road or mass concrete), the size of coarse aggregate shall be

(A) 25 mm graded down to 10 mm
(B) 20 mm graded down to 5 mm
(C) 15 mm graded down to 2 mm
(D) 40 mm graded down to 5 mm
(E) Answer not known

25. The unit measurement for 10 cm or half brick walls is in

(A) cu.m
(B) sq.m
(C) 10 sq.m
(D) 10 cu.m
(E) Answer not known

26. What is the unit of measurement used for laying of pipelines?

(A) m (B) m^2

(C) m^3 (D) kg

(E) Answer not known

27. Technical sanction is given on _____ estimate.

(A) Approximate Estimate (B) Revised Estimate

(C) Supplementary Estimate (D) Detailed Estimate

(E) Answer not known

28. An estimate in addition to the original sanctioned estimate is called

(A) Total estimate (B) Additional estimate

(C) Supplementary estimate (D) Final estimate

(E) Answer not known

29. Plinth area shall be calculated including the following

(A) Area of porch other than cantilevered

(B) Area of loft

(C) Area of vertical sun breaker

(D) Balcony

(E) Answer not known

30. Size of a cycle as per Indian Standards is

(A) 2.00 m × 0.50 m
(B) 2 m × 1 m
(C) 1 m × 2 m
(D) 2 m × 3 m
(E) Answer not known

31. Which one of the following is not suitable to increase the lateral strength and stiffness of the soft storey of buildings?

(A) Steel bracing
(B) Shear walls
(C) Brick infills between columns
(D) Curtain walls
(E) Answer not known

32. The minimum ceiling height requirement for an education building in plain region is _____.

(A) 3.0 m
(B) 3.6 m
(C) 4.0 m
(D) 4.5 m
(E) Answer not known

33. _____ separate very large streets into parallel urban realms, buffering the commercial or residential street edges from the high speed throughway by means of multi-way operations and frontage roads, often with an above-average quality of landscaping.

(A) Parkways
(B) Pathways
(C) Boulevard
(D) Corridors
(E) Answer not known

34. GRIHA is an acronym for

(A) Green Rating for Integrated Habitat Assessment

(B) Green Rating for International Habitat Assessment

(C) Green Rating for Integrated Housing Assessment

(D) Green Rating for International Housing Assessment

(E) Answer not known

35. What is meant by 'GRUH' in Rural Housing?

(A) Group Rural Housing Finance Corporation Ltd.

(B) Grant Rural Housing Fund Committee Ltd.

(C) Gowda Rehabitation Health Fund Corporation Ltd.

(D) Gujarat Rural Housing Finance Corporation Ltd.

(E) Answer not known

36. Expand HUDCO :

(A) Home and Urban Development Committee

(B) Housing and Urban Development Commission

(C) Home and Urban Development Council

(D) Housing and Urban Development Corporation

(E) Answer not known

37. The V_7 concept given by architect Le Corbusier refers to

(A) Housing Typologies

(B) Water distribution planning

(C) Farm Design Principles

(D) Hierarchy of roads

(E) Answer not known

38. _____ command is used to place a text on a drawing.

(A) TEXT D
(B) DTEXT
(C) TETEXT
(D) OTEXT
(E) Answer not known

39. The command aliases for Break is

(A) BH
(B) B
(C) BR
(D) BA
(E) Answer not known

40. The command aliases "CO" refers to

(A) Coordinates
(B) Colour
(C) Copy
(D) Collide
(E) Answer not known

41. _____ command is used to draw polylines.

(A) PPLINE
(B) PLINE
(C) POLYL
(D) PLPLOY
(E) Answer not known

42. _____ can put hatch line or any pattern in selected area.

(A) CHATCH
(B) CREHATCH
(C) BHATCH
(D) FHATCH
(E) Answer not known

43. _____ command allows quick accurate entry of horizontal and vertical lines.

(A) OSNAP
(B) ORTHO
(C) ORIGN
(D) ORPAN
(E) Answer not known

44. The command aliases 'SC' means

(A) SCALE
(B) SCOORDINATE
(C) SAMPLE
(D) CLOSE
(E) Answer not known

45. _____ function is used to assign a value to the variable.

(A) GSET
(B) GQ
(C) SETQ
(D) SETG
(E) Answer not known

46. The function key shortcut F5 denotes

(A) Coords
(B) Isoplane Toggle
(C) Osnap off
(D) Polar off
(E) Answer not known

47. In a pin jointed plane frame all the loads will be assumed to act at

(A) The Centre of gravity of the member

(B) The joints of the member only

(C) Only the top of chord joints

(D) Any place on the member

(E) Answer not known

48. The bending stress along the Neutral axis is

(A) Maximum

(B) Minimum

(C) Zero

(D) One

(E) Answer not known

49. A steel I-Beam has over all depth 30 cm. If the Bending Stresses developed at the Top and Bottom of the Beam are 120 MPa and 30 MPa, then the depth of the Neutral Axis from the top of the Beam will be

(A) 18 cm

(B) 20 cm

(C) 24 cm

(D) 25 cm

(E) Answer not known

50. Find the ratios of moments of inertia, section moduli and radii of gyration of two squares sections having their area ratio as 4.

(A) 32, 16, 4

(B) 8, 4, 2

(C) 16, 8, 2

(D) 16, 8, 4

(E) Answer not known

51. The Bending Moment at Mid point of a cantilever of length 'L' carrying a concentrated load 'W' at the Free End is

(A) $\frac{WL}{4}$

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

(C) WL

(D) $2\,WL$

(E) Answer not known

52. Wrought iron is an example of _____ material.

(A) Ductile

(B) Brittle

(C) Malleable

(D) Elastic

(E) Answer not known

53. A force acting tangential to the surface of a body is

(A) Tensile force

(B) Compressive force

(C) Shear force

(D) Torsional force

(E) Answer not known

54. Strength equation for torsion is

(A) $\frac{\tau}{R} = \frac{T}{I_P}$

(B) $\frac{R}{\tau} = \frac{T}{I_P'}$

(C) $\frac{\tau}{R} = \frac{I_P}{T}$

(D) $\frac{\tau}{R} = \frac{C\theta}{l}$

(E) Answer not known

55. Three rivets of gross diameter 30 mm are provided to carry a total shear of 210 kN. Determine the stress developed in the rivets.

(A) 89.30 N/mm^2
(B) 99.03 N/mm^2
(C) 90 MPa
(D) 89 MPa
(E) Answer not known

56. An Inverted 'T' section is subjected to a shear force. The maximum shear stress will occurs at

(A) Top of the section
(B) Neutral Axis of the section
(C) Junction of web Flange
(D) None of above
(E) Answer not known

57. The combined effect of external forces acting on a body is called

(A) Stress
(B) Strain
(C) Load
(D) Tensile Stress
(E) Answer not known

58. A T-Section is used as a simply supported beam with uniformly distributed load. The maximum bending stress will occurs at the

(A) Top of the flange
(B) Centroid of the section
(C) Mid point of the web
(D) Extreme point of the web
(E) Answer not known

59. Which of the following mud wall construction is suitable for SEISMIC ZONES?

(A) COB
(B) ADOBE
(C) PISE
(D) WATTLE and DAUB
(E) Answer not known

60. Expand FRP :

(A) Glass Fibre Reinforced Plastic

(B) Carbon Fibre Reinforced Plastic

(C) Fibre Glass Reinforced Plastic

(D) Fibre Reinforced Plastic

(E) Answer not known

61. Which of the type of glass is a mixture of sodium silicate, calcium silicate and iron silicate?

(A) Soda Lime Glass

(B) Potash Lime Glass

(C) Potash Lead Glass

(D) Common Glass

(E) Answer not known

62. _____ is a mechanical treatment of steel where the metal is drawn through dies or specially shaped tools to prepare wires and rods.

(A) Forging

(B) Pressing

(C) Drawing

(D) Rolling

(E) Answer not known

63. A material which could be _____ is known as ductile material.

(A) Drawn into bars or thin wires

(B) Resumed to its normal shape after force application

(C) Made into sheets

(D) Changed to any desired shape

(E) Answer not known

64. Which of the following is not a property of cement concrete?

(A) High Compressive Strength

(B) High Tensile Strength

(C) Free from Corrosion

(D) Hardens with age

(E) Answer not known

65. _____ bricks as moulded to the shape of a gutter or channel and they are often glazed.

(A) Coping Bricks
(B) Paving Bricks
(C) Channel Bricks
(D) Hollow Bricks
(E) Answer not known

66. In this type of bond, the bricks are arranged with its length parallel to the face or front of a wall

(A) Header Bond
(B) Stretcher Bond
(C) Dutch Bond
(D) English Bond
(E) Answer not known

67. The crushing strength of a brick should not be less than _____ N/mm^2.

(A) 10 N/mm^2
(B) 8 N/mm^2
(C) 5 N/mm^2
(D) 3.5 N/mm^2
(E) Answer not known

68. In this type of stone construction, stones of irregular sizes are used

(A) Ashlar Masonry
(B) Rubble Masonry
(C) Random Rubble Masonry
(D) Polygonal Rubble
(E) Answer not known

69. A grove or thicket of trees in a garden or park is called

(A) Basketer
(B) Bosket
(C) Bemn
(D) Bema
(E) Answer not known

70. Who was the founder of Arcosanti?

(A) Paolo Soleri
(B) Peter Cook
(C) Renzo Piazo
(D) Robert Ventury
(E) Answer not known

71. A style that urged for a return to craftsmanship and which rebelled against industrialization

(A) Arts and Crafts Movement
(B) Art Nouveou
(C) Neo Classism
(D) De Stijl
(E) Answer not known

72. The recess on the wall of the Sanctuary of a mosque indicating the direction of prayer towards Mecca is called _____.

(A) Mehrab
(B) Madrassa
(C) Apse
(D) Mimbar
(E) Answer not known

73. Type of Brick Work used in Dome of Florence Cathedral

(A) Herring bone brick bonding

(B) French type brick bonding

(C) English type brick bonding

(D) Dutch type brick bonding

(E) Answer not known

74. The most spectacular structural achievement of the Gothic period which resulted in unifying space in a church was the _____.

(A) Lantern

(B) Double shell domes

(C) Flying Buttress

(D) Pendentive

(E) Answer not known

75. Which of the following architectural elements is considered a "hallmark" of Gothic Churches?

(A) Flying Buttresses

(B) Ambulatories

(C) NAVE

(D) TRANSEPT

(E) Answer not known

76. The system of construction of domes used during the Byzantine period is called as

(A) Pendentive System

(B) Squinch System

(C) Arcual System

(D) Vaulted System

(E) Answer not known

77. The main building on the Acropolis is

(A) The Parthenon
(B) The Erechtheion
(C) The temple of Athena Nike
(D) Epidarus
(E) Answer not known

78. The river that flows through Egypt is

(A) Nile
(B) Tigris
(C) Euphrates
(D) Mississippi
(E) Answer not known

79. Maximum value of effective slenderness ratio as per IS : 800 for a steel tension member in which a reversal of direct stress occurs due to loads other than wind or seismic forces, is _____.

(A) 100
(B) 180
(C) 250
(D) 350
(E) Answer not known

80. As per I.S. : 456-2000 codal provisions, in reinforced and plain concrete footings, the thickness at edge shall be not less than _____.

(A) 100 mm
(B) 150 mm
(C) 300 mm
(D) 200 mm
(E) Answer not known

81. The design shear strength of concrete depends upon

(A) Grade of concrete

(B) Grade of steel

(C) Quantity of steel

(D) Grade of concrete and percentage of tensile reinforcement

(E) Answer not known

82. If the neutral axis depth is less than the flange thickness while computing the flexural strength of flanged sections, then the flanged section can be considered as a rectangular section having a width equal to

(A) Width of rib

(B) Width of flange minus rib width

(C) Width of flange

(D) Width of slab

(E) Answer not known

83. The amount of reinforcement in the beam is equal to the proper requirement of reinforcement, then the section is called

(A) Balanced section

(B) Over reinforced section

(C) Under reinforced section

(D) Critical section

(E) Answer not known

84. What is the value of eccentricity (e) for no tensile stress for a circular section?

(A) $e \leq \frac{\text{diameter of the circular section}}{2}$

(B) $e \leq \frac{\text{diameter of the circular section}}{3}$

(C) $e \leq \frac{\text{diameter of the circular section}}{4}$

(D) $e \leq \frac{\text{diameter of the circular section}}{8}$

(E) Answer not known

85. Beams, columns, arches are example for

(A) One dimensional elements

(B) Two dimensional elements

(C) Three dimensional elements

(D) Dimensionless elements

(E) Answer not known

86. Carry over factor for a beam fixed at one end and simply supported at the other end is

(A) 1

(B) $\frac{1}{2}$

(C) $\frac{3}{4}$

(D) $\frac{4}{3}$

(E) Answer not known

87. A simply supported beam AB of span (l) carries a point load (w) at 'C' at a distance 'a' from left support 'A' and at a distance 'b' from right support 'B' such that $a < b$, then the maximum deflection will be occur

(A) At 'C'

(B) Between A and C

(C) Between C and B

(D) Anywhere between A and B

(E) Answer not known

88. A cantilever beam 3m long carries a point load of 20kN at a distance of 2m from fixed end, Taking $EI = 8 \times 10^{12}$ N–mm^2, then the maximum slope at the free end of beam is

(A) 0.002 radians

(B) 0.003 radians

(C) 0.004 radians

(D) 0.005 radians

(E) Answer not known

89. Flexural rigidity of a beam is denoted as

(A) EI

(B) MI

(C) GI

(D) ZI

(E) Answer not known

90. Select the incorrect statement in case of cast iron pipes

(A) The cost is moderate

(B) The pipes are difficult to join

(C) The breakage of these pipes are large

(D) The pipes are strong and durable

(E) Answer not known

91. Select the incorrect statement, In case of cement concrete water pipes

(A) Inside surface of pipes can be made smooth

(B) Maintenance cost is high

(C) Pipes are durable

(D) Pipes can be cast at site

(E) Answer not known

92. The science which deals with movement of the water on the ground, under the ground, evaporation from the land and water surfaces and transpiration from vegetation is known as

(A) History

(B) Geography

(C) Geology

(D) Hydrology

(E) Answer not known

93. Artificial rain is produced by spraying clouds with substances like

(A) Silver iodide

(B) Silver nitrate

(C) Silver chloride

(D) Silver phosphate

(E) Answer not known

94. The sewage treatment in septic tanks is due to:

(A) Aerobic decomposition

(B) Anaerobic decomposition

(C) Parasitic decomposition

(D) Both (A) and (B)

(E) Answer not known

95. 'Kyoto Protocol' discusses on

(A) Industry wastages

(B) Forest

(C) Climate change

(D) Mining

(E) Answer not known

96. Rate of filtration by Rapid sand filtration is _____ litres/m^2/hr.

(A) 2000 to 6000

(B) 800 to 1000

(C) 300 to 500

(D) 250 to 50

(E) Answer not known

97. Reflux valves are also known as

(A) Safety valves

(B) Check valves

(C) Washout valves

(D) Stop valves

(E) Answer not known

98. Pipe corrosion can be reduced by proper treatment given to water with

(A) Addition of calcium carbonate

(B) Removal of dissolved oxygen

(C) Addition of carbon dioxide

(D) Removal of sodium silicate

(E) Answer not known

99. Which treatment is conducted to remove floating objects

(A) Screening

(B) Sedimentation

(C) Disinfection

(D) Aeration

(E) Answer not known

100. The reverberation time can be calculated using the Sabin's equation

(A) $t = \frac{A}{0.16\ V}$

(B) $t = \frac{0.61A}{V}$

(C) $t = \frac{0.16V}{A}$

(D) $t = \frac{0.61V}{A}$

(E) Answer not known

101. It is a reflection of a sound wave back to its source in sufficient strength and with a sufficient time lag to be separately distinguished

(A) Echo

(B) Dead Spot

(C) Reverberation

(D) Sound Foci

(E) Answer not known

102. When the sound waves get reflected from a large uniform plane surface, the angle of incidence will be

(A) equal to angle of reflection

(B) greater than angle of reflection

(C) lesser than angle of reflection

(D) higher than angle of reflection

(E) Answer not known

103. As per the National Building Code, the travel distance on occupant has to travel to reach an exit when fire occurs, should not be beyond ———— for residential and institutional buildings.

(A) 39 m

(B) 22.5 m

(C) 40 m

(D) 37.5 m

(E) Answer not known

104. The recommended illuminance level for office buildings is

(A) 100 lux
(B) 150 lux
(C) 1200 lux
(D) 500 lux
(E) Answer not known

105. It is defined as the ratio of amount of water vapour present in the air to the amount of water vapour, if the air were saturated at the same temperature

(A) Relative Humidity
(B) Absolute Humidity
(C) Effective Temperature
(D) Absolute Temperature
(E) Answer not known

106. It plays a significant role in the comfort of people affected by a ventilation system

(A) Purity of air
(B) CO_2
(C) Volume of space
(D) Health of user
(E) Answer not known

107. It is defined as a process of removing or supplying air by natural or mechanical means to and from any space.

(A) Condensation
(B) Circulation
(C) Dissipation
(D) Ventilation
(E) Answer not known

108. The colour code of neutral wire of AC wiring is

(A) RED
(B) YELLOW
(C) GREEN
(D) BLACK
(E) Answer not known

109. Water requirements for Cinema, Concert Halls and Theatres is

(A) 20 litres as per seat per day (B) 25 litres as per seat per day

(C) 10 litres as per seat per day (D) 15 litres as per seat per day

(E) Answer not known

110. Find out the contour interval for a scale of 1 cm = 80 cm assuming a rule of thumb to be contour interval in metres $= \frac{25}{\text{no. of cm per km}}$

(A) 5 m (B) 2 m

(C) 2.5 m (D) 4 m

(E) Answer not known

111. In Land Survey Marking, an appropriate number of trees on either side of the line and within 50 links are marked by flat axe marks called

(A) Turas (B) Blazes

(C) Kites (D) Auxillary meander

(E) Answer not known

112. Vernier Scale was invented in the year

(A) 1931 (B) 1831

(C) 1731 (D) 1631

(E) Answer not known

113. Which of the following is not an instrumental error in levelling?

(A) Faulty focusing arrangement

(B) Rigid joints of the tripod

(C) Over-sensitive bubble tube

(D) Atmospheric refractions

(E) Answer not known

114. It is the instrument used for the measurement of slopes, taking cross-section, tracing contours setting grades and all rough levelling operations

(A) Hand level

(B) Abney Level

(C) Borel hand level

(D) Wye level

(E) Answer not known

115. The horizontal angle between the true meridian and magnetic meridian is called

(A) Dip

(B) Azimuth

(C) Declination

(D) Inclination

(E) Answer not known

116. The accuracy with which the instrument station can be established is known as the

(A) Strength of fix

(B) Strength of accuracy

(C) Strength of solution

(D) Strength of level

(E) Answer not known

117. In ————————, the bearing of a line is measured Eastward or Westward from North or South whichever is nearer.

(A) Whole circle bearing
(B) Quadrantal bearing
(C) True bearing
(D) Arbitrary bearing
(E) Answer not known

118. Which of the following is not an instrument required for plane table surveying?

(A) Alidade
(B) Plumbing fork
(C) Spirit level
(D) Ranging rod
(E) Answer not known

119. The main survey stations are located on the ground by

(A) Index sketches
(B) Reference sketches
(C) Rough sketches
(D) Line sketches
(E) Answer not known

120. The average height of the sea for all stages of the tides is known as

(A) Mean sea level
(B) Level line
(C) Level Surface
(D) Reduced level
(E) Answer not known

121. If A_1 and A_n are the first and last sectional areas, and $A_2, A_3 \ldots A_{n-1}$ are the areas of all other sections of a solid, what is the volume of the solid using trapezoidal rule?

(A) $V = \frac{d}{3}[(A_1 + A_n) + 2(A_2 + A_3 \ldots\ldots A_{n-1})]$

(B) $V = \frac{d}{2}[(A_1 + A_n) + (A_2 + A_3 \ldots\ldots A_{n-1})]$

(C) $V = \frac{d}{2}[(A_1 + A_n) + 2(A_2 + A_3 \ldots\ldots A_{n-1})]$

(D) $V = \frac{d}{2}[2(A_1 + A_n) + (A_2 + A_3 \ldots\ldots A_{n-1})]$

(E) Answer not known

122. An approximate cost for the roofing in the Building Total Cost is

(A) 10%
(B) 15%
(C) 20%
(D) 25%
(E) Answer not known

123. If A = Area of the base and L = Height of the pyramid, What is the volume of the pyramid?

(A) $\frac{A \times L}{2}$

(B) $\frac{A \times L}{3}$

(C) $\frac{A \times L}{4}$

(D) $\frac{2}{3} \times A \times L$

(E) Answer not known

124. An approximate estimate is worked out ———— the preparation of a detailed estimate of a work.

(A) After
(B) Before
(C) On
(D) No
(E) Answer not known

125. How many number of tiles (of size 200 × 200 × 20 mm) is required for 10 square metre flooring?

(A) 350 Nos. (B) 250 Nos.

(C) 150 Nos. (D) 100 Nos.

(E) Answer not known

126. As per IS1200, what is the recommended tolerances in linear dimensioning measurement for concrete work?

(A) 0.1 m (B) 0.01 m

(C) 0.005 m (D) 0.001 m

(E) Answer not known

127. The number of brick required for 1 m^3 of Brickwork in C.M. 1 : 4 is

(A) 1000 Nos. (B) 750 Nos.

(C) 500 Nos. (D) 250 Nos.

(E) Answer not known

128. In masonry works, no deduction is made for openings of area less than

(A) 0.5 m^2 (B) 0.1 m^2

(C) 0.01 m^2 (D) 1 m^2

(E) Answer not known

129. Revised estimate is recommended to accommodate the changes in the rate of items, if the sanctioned estimate exceeds by _____.

(A) 3%
(B) 5%
(C) 8%
(D) 10%
(E) Answer not known

130. A scheme aimed at increasing the growth rate of small and medium towns

(A) Integrated Development of Small and Medium towns
(B) Town and Country Planning Organization
(C) Town and Country Planning Act
(D) Housing and Urban Development Corporation
(E) Answer not known

131. Size of a car as per Indian Standards is

(A) 5.50 m × 2.50 m
(B) 5 m × 2 m
(C) 6 m × 3 m
(D) 6.50 m × 3.50 m
(E) Answer not known

132. An authoritative standard is known as

(A) Norm
(B) Law
(C) Regulation
(D) Bye-Law
(E) Answer not known

133. What is meant by "CMA"?

(A) Chennai Metropolitan Area
(B) Coastal Mesh Area
(C) Court Margin Area
(D) Cosmopolitan Metro Area
(E) Answer not known

134. A social programme aimed at assisting mentally retarded and rehabilitating alcoholics, drug addicts and helping restrict children.

(A) Urban Basic Services

(B) Environmental Improvement of Urban Slums

(C) Life Insurance Corporation of India

(D) Housing and Urban Development Corporation

(E) Answer not known

135. The buildings or premises NOT permitted in the commercial use zone

(A) Research, experimental and testing laboratories

(B) Entertainment centres

(C) Warehouses

(D) Industries not producing noxious or dangerous effluents

(E) Answer not known

136. The town plan of Gandhinagar is designed to accommodate a population of about

(A) 4,00,000 persons

(B) 6,00,000 persons

(C) 8,00,000 persons

(D) 10,00,000 persons

(E) Answer not known

137. The first ever SEZ in India was set up at _____.

(A) Mumbai

(B) Chennai

(C) Kandla

(D) Cochin

(E) Answer not known

138. Rent is the reward for the use of _____.

(A) Capital

(B) Labour

(C) Land

(D) Resource

(E) Answer not known

139. Which city is called as Pink City?

(A) Jaipur
(B) Jodhpur
(C) Delhi
(D) Agra
(E) Answer not known

140. The minimum width of a street if its length is not more than 120 metres is _____.

(A) 5 m
(B) 7 m
(C) 9 m
(D) 12 m
(E) Answer not known

141. An arterial road on which fast urban traffic is allowed to move speedily and safely is known as

(A) Free way
(B) Express way
(C) Bye-Pass Road
(D) Main Roads
(E) Answer not known

142. Text is defined by _____ in 3D S Max.

(A) Font and colour
(B) Font and height
(C) Font and weight
(D) Font and 0, 0
(E) Answer not known

143.  This symbol represents

(A) Roll Camera
(B) Orbit Camera
(C) Dolly Camera
(D) Zoom Extent
(E) Answer not known

144. The command aliases for LTSCALE is

(A) LT
(B) LTS
(C) LTE
(D) SCT
(E) Answer not known

145. _____ commands helps in easy selection of various parts of figure.

(A) QRTHO
(B) CIRCLE
(C) OSNAP
(D) OSWARD
(E) Answer not known

146. _____ allows to draw figure having two circles with shading in the area between them.

(A) SHA
(B) CIRSHA
(C) DSHA
(D) DONUT
(E) Answer not known

147. The measurement system which displays units as 15.5000 is _____.

(A) Scientific
(B) Decimal
(C) Engineering
(D) Architectural
(E) Answer not known

148. The two shortcut command to create multiple copies of objects in a pattern in Auto CAD command is :

(A) BR
(B) TR
(C) PR
(D) AR
(E) Answer not known

149. The term 'WCS' means

(A) World Coordinate Section
(B) World Coordinate System
(C) Web Coordinate System
(D) Web Coordinate Section
(E) Answer not known

150. In VPOINT, the value 0, –1, 0 means

(A) Rear view
(B) Top view
(C) Front view
(D) Right view
(E) Answer not known

151. _____ command allows to select the best location for viewing the 3D object.

(A) 3ARRAY
(B) 3DORBIT
(C) 3DVIEWER
(D) DVIEWED
(E) Answer not known

152. The command aliases "LI" implies

(A) LIST
(B) LINE
(C) LTSCALE
(D) LAYER
(E) Answer not known

153. Moment of Inertia of a circle about its XX-Axis

(A) $\frac{\pi}{4}r^4$ (B) $\frac{\pi}{64}r^4$

(C) $\frac{\pi}{4}r^2$ (D) $\frac{\pi}{64}r^3$

(E) Answer not known

154. A cantilever of span 4 metre with right end fixed carries an uniformly distributed load of 3 kN/m throughout its length. Determine the maximum bending moment at support.

(A) 12 kN/m (B) 24 kN/m

(C) 36 kN/m (D) 48 kN/m

(E) Answer not known

155. In a beam the point of contraflexure is a point where

(A) Shear force is maximum

(B) Shear force is zero

(C) Bending moment changes its sign

(D) Bending moment is maximum

(E) Answer not known

156. The number of equilibrium equations are

(A) 1 (B) 2

(C) 3 (D) 4

(E) Answer not known

157. The section modulus of a hollow circular section is

(A) $\frac{\pi}{64}\left(\frac{D^4 - d^4}{D}\right)$

(B) $\frac{\pi}{64}\left(\frac{D^3 - d^3}{D}\right)$

(C) $\frac{\pi}{32}\left(\frac{D^4 - d^4}{D}\right)$

(D) $\frac{\pi}{16}\left(D^4 - \frac{d^4}{D}\right)$

(E) Answer not known

158. When a rectangular bar is subjected to a tensile stress, then the volumetric stress is equal to

(A) $\varepsilon\left(1 - \frac{2}{M}\right)$

(B) $\varepsilon\left(1 + \frac{2}{M}\right)$

(C) $\varepsilon\left(2 - \frac{1}{M}\right)$

(D) $\varepsilon\left(2 + \frac{1}{M}\right)$

(E) Answer not known

159. The unit of Modulus of Elasticity is given by

(A) Cu/Pa

(B) M/kg

(C) Nm

(D) N/mm^2

(E) Answer not known

160. The type of spring in which the ground water comes to the surface under pressure is known as _____ spring.

(A) Well

(B) Tube

(C) Artesian

(D) Infiltration

(E) Answer not known

161. _____ is a groove provided on the underside of SILL, CORNICE and COPING so that rain water can be discharged clear of the wall surface.

(A) WEATHERING
(B) GROUTING
(C) THROATING
(D) SPALL
(E) Answer not known

162. _____ is the dislocation or loosening of some portion of the painted surface, resulting from poor adhesion.

(A) Crawling
(B) Fading
(C) Flaking
(D) Bloom
(E) Answer not known

163. The _____ component of a paint provides the opaque coating to hide the surface to be painted.

(A) Vehicle
(B) Drier
(C) Base
(D) Solvent
(E) Answer not known

164. Which of the following is not a material used for Damp Proof Courses?

(A) Bituminous Paint
(B) Plastic Sheet
(C) Metal Sheet
(D) Fabric Sheet
(E) Answer not known

165. Which of the following form of asphalt is prepared by dissolving asphalt in a volatile solvent?

(A) Asphaltic Cement
(B) Cut-Back Asphalt
(C) Mastic Asphalt
(D) Asphaltic Emulsion
(E) Answer not known

166. _____ is an Indian timber which is flexible, strong, durable, found in abundance in Assam and Bengal, used for scaffolding, thatch roof, rafters, etc.

(A) Bakul
(B) Babul
(C) Bamboo
(D) Bijasal
(E) Answer not known

167. The artificial cement is obtained by burning at a very high temperature a mixture of _____ and argillaceous mixture.

(A) Calcareous
(B) Igneous
(C) Siliceous
(D) Hydrolicious
(E) Answer not known

168. Cement concrete is a mixture of cement, sand, _____ and water when placed in the skeleton of forms and allowed to cure and harden.

(A) Pebbles or crushed rock
(B) Lime
(C) Silica
(D) Steel
(E) Answer not known

169. Poor Lime contains more than _____ of clay.

(A) 10%
(B) 20%
(C) 30%
(D) 40%
(E) Answer not known

170. Which of the following is not a physical classification of stone?

(A) Stratified Rocks

(B) Unstratified Rocks

(C) Foliated Rocks

(D) Calcareous Rocks

(E) Answer not known

171. The facade of Parthenon is proportioned using which proportioning system?

(A) Modular

(B) Golden Section

(C) Ken

(D) Classical System

(E) Answer not known

172. Piazza Del Campidoglio was designed by

(A) Michelangelo Buonarroti

(B) Christopher wren

(C) Indigo Jones

(D) Leonardo da Vinchi

(E) Answer not known

173. Fatehpur Sikri, India is an example for _____ organization.

(A) Linear

(B) Clustered

(C) Mono

(D) Fluid

(E) Answer not known

174. The North Indian Hindu Temple Architecture Style is called as

(A) Indo-Aryan Style
(B) Nagara Style
(C) Dravida Style
(D) Gupta Style
(E) Answer not known

175. In Buddhist Architecture, the Square halls with cells opening along the sides and rear, and usually with a verandah across the front are called

(A) Chaitya halls
(B) Vedika
(C) Buddhist School
(D) Viharas
(E) Answer not known

176. The double staircase accessed to climb the stupa is called

(A) SOPANA
(B) ARYAN
(C) TORANA
(D) ANDA
(E) Answer not known

177. The writing during the Harappan Civilization extended to the use of _____.

(A) Heiroglyphs
(B) Pictographic incriptions
(C) Cuneiforms
(D) Sanskrit
(E) Answer not known

178. The irregularly shaped open space serving as market, general meeting space and setting for political discussions in Rome is called as

(A) Forum
(B) Agora
(C) Basilica
(D) Thermae
(E) Answer not known

179. The cold bath of the Romans are termed as

(A) Frigidarium
(B) Caldarium
(C) Thermae
(D) Stabian Baths
(E) Answer not known

180. Which plan formed the basis of the Classical Greek Temple?

(A) Crete Plan
(B) Classical Plan
(C) Aegean Plan
(D) Megaron Plan
(E) Answer not known

181. The acropolis of Athens is an example of an ancient _____ citadel.

(A) Greek
(B) Roman
(C) Egyptian
(D) Hindu
(E) Answer not known

182. A RCC column is of size 250 mm × 250 mm. The effective length of column is 2.75 m. Find the slenderness ratio (λ)

(A) 0.09

(B) 0.11

(C) 11.0

(D) 90.9

(E) Answer not known

183. Which type of slab is required torsion reinforcement?

(A) One way slab

(B) Two way slab

(C) Stair Waist slab

(D) Sunken slab

(E) Answer not known

184. The maximum spacing permitted in R.C.C. slabs for Distribution reinforcement is

(A) 3 d (or) 300 mm which ever is smaller

(B) 5 d (or) 450 mm which ever is smaller

(C) 3 d (or) 300 mm which ever is greater

(D) 5 d (or) 450 mm which ever is greater

(E) Answer not known

185. The most widely used type of reinforcement is the high strength deformed bars with a specified yield strength of

(A) 250 N/mm²

(B) 415 N/mm²

(C) 500 N/mm²

(D) 550 N/mm²

(E) Answer not known

186. The limiting value of ratio between neutral axis to effective depth for beams reinforced with Fe500 bars is

(A) 0.53

(B) 0.48

(C) 0.46

(D) 0.42

(E) Answer not known

187. To avoid tension in base of Retaining wall, the resultant force lies within

(A) Middle sixth of the base

(B) Middle third of the base

(C) Middle eighth of the base

(D) Middle fourth of the base

(E) Answer not known

188. If one of the span of a continuous beam is subjected to a clockwise couple, then

(A) The span will be subjected to positive moment

(B) The span will be subjected to negative moment

(C) Entire span will be subjected to positive moment

(D) One part of the span is subjected to positive moment and the other part to negative moment

(E) Answer not known

189. A fixed beam carrying UDL of w per unit length over its entire span then the maximum deflection occur at its centre of beam is

(A) $\frac{5wl^4}{384EI}$

(B) $\frac{wl^4}{384EI}$

(C) $\frac{5wl^3}{384EI}$

(D) $\frac{wl^3}{384EI}$

(E) Answer not known

190. A simply supported beam of span 'l' is carrying a UDL of w per unit length. If the beam is propped at its mid point, then the maximum deflection occur at the distance of

(A) $0.27l$ from end supports

(B) $0.422l$ from end supports

(C) $0.33l$ from end supports

(D) $0.25l$ from end supports

(E) Answer not known

191. The water is said to be Neutral when the pH is

(A) 7 (B) ≥ 7

(C) ≤ 7 (D) 1

(E) Answer not known

192. The Rate of filtration in Rapid sand filters (Gravity type) is:

(A) 100 to 200 litres per hour m^2

(B) 500 to 800 litres per hour m^2

(C) 3000 to 6000 litres per hour m^2

(D) 7000 to 9000 litres per hour m^2

(E) Answer not known

193. The water which has both the characteristics i.e. of "wholesome water" and "palatable water" is known as

(A) Potable water

(B) Clear water

(C) Pure water

(D) Polluted water

(E) Answer not known

194. Rainfall is measured in

(A) Mm (Millimeter)

(B) Cm (Centemeter)

(C) M (Metre)

(D) Km (Kilometer)

(E) Answer not known

195. The average conditions of the atmosphere of a place or a region throughout the season is known as

(A) Weather

(B) Climate

(C) Micro climate

(D) Macro climate

(E) Answer not known

196. 0.2 ppm level of ozone present in the atmosphere will have

(A) No ill effects

(B) Nose and throat irritation

(C) Extreme fatigue after two hours

(D) Severe trouble with lungs

(E) Answer not known

197. The _____ shaped sewer section proved to be the boot when the discharge does not vary too much and the chanes of sewers running with low depth (less than half) are less.

(A) Rectangular

(B) Circular

(C) Basket handle

(D) Parabolic

(E) Answer not known

198. Average Domestic Water consumption for washing utensils purpose as per IS : 1172 – 1171 is

(A) 10 litres/day/person

(B) 15 litres/day/person

(C) 5 litres/day/person

(D) 20 litres/day/person

(E) Answer not known

199. The lower most level or surface of a sewer is known as

(A) Siphonage

(B) Anti-Siphonage

(C) Man-Hole

(D) Inverts

(E) Answer not known

200. pH value level of water to be used for domestic purposes as per Indian standards is

(A) 6.5 to 8

(B) 4.5 to 6

(C) 3.5 to 5

(D) 5.5 to 7

(E) Answer not known

SPACE FOR ROUGH WORK

SPACE FOR ROUGH WORK

SPACE FOR ROUGH WORK

SPACE FOR ROUGH WORK

SEAL