

PUNJAB PUBLIC SERVICE COMMISSION

Objective Type Test (November-2022) for Recruitment to the post of Building Inspector in the Department of Local Government, Government of Punjab

READ INSTRUCTIONS BEFORE FILLING ANY DETAILS OR ATTEMPTING TO ANSWER THE QUESTIONS.

Total Questions: 120
Time Allowed: 2 Hours

Candidate's Name _____

Father's Name _____

Date of Birth
DD MM YYYY

OMR Response Sheet No. _____

Roll No. _____

Candidate's Signature (Please sign in the box)

Question
Booklet Set

A

Booklet Series No.

INSTRUCTIONS

1. The candidate shall NOT open this booklet till the time told to do so by the Invigilation Staff. However, in the meantime, the candidate can read these instructions carefully and subsequently fill the appropriate columns given above in CAPITAL letters. The candidate may also fill the relevant boxes out of 1 to 9 of the Optical Mark Reader (OMR) response sheet, supplied separately.
2. Use only blue or black **ball point pen** to fill the relevant columns on this page as well as in OMR sheet. Use of Ink pen or any other pen is not allowed.
3. The candidate shall be liable for any adverse effect if the information given above is wrong or illegible or incomplete.
4. Each candidate is required to attempt 120 questions in 120 minutes, except for orthopedically/visually impaired candidates, who would be given 40 extra minutes, for marking correct responses on the OMR sheet.
5. The question paper booklet has 20 pages.
6. The candidates, when allowed to open the question paper booklet, must first check the entire booklet to confirm that the booklet has complete number of pages, the pages printed correctly and there are no blank pages. In case there is any such error in the question paper booklet then the candidate should IMMEDIATELY bring this fact to the notice of the Invigilation Staff and obtain a new booklet of the same series as given earlier.
7. The serial number of the new Question booklet if issued for some reason should be entered in the relevant column of the OMR. The Invigilation Staff must make necessary corrections in their record regarding the change in the serial no. of Question booklet.
8. The paper consists of total 480 Marks. Each question shall carry 4 marks. There are four options for each question and the candidate has to mark the MOST APPROPRIATE answer on the OMR response sheet.
9. There is negative marking (1 mark for each question) for answers wrongly answered by the candidate.
10. Use of Electronic/Manual Calculator is prohibited.
11. The candidate MUST READ INSTRUCTIONS BEHIND THE OMR SHEET before answering the questions and check that two carbon copies attached to the OMR sheet are intact.

1. Which of the following is a gateway in Dravidian temples?
 - a) Gopuram
 - b) Vimana
 - c) Antarala
 - d) Kund
2. Who designed the dome of Florence Cathedral?
 - a) Michelangelo
 - b) Antonio da Sangallo
 - c) Filippo Brunelleschi
 - d) F. L. Wright
3. What is the height of Qutab Minar?
 - a) 62 m
 - b) 92 m
 - c) 73 m
 - d) 83 m
4. Adhai din ka Jhompra Mosque is located in which Indian city?
 - a) Jaipur
 - b) Ajmer
 - c) Delhi
 - d) Fatehpur Sikri
5. Among the following monuments of ancient Greece, the only Octastyle Peripteral Temple with eight towering Doric columns lining both east and west facades is
 - a) Temple of Horus
 - b) Temple of Athena
 - c) Temple of Apollo
 - d) The Parthenon
6. The Golden Ratio refers to
 - a) $1:\sqrt{2}$
 - b) 1:1.618
 - c) 1:1
 - d) 16:9
7. Match the iconic architectural examples in Group-I with their predominant structural systems in Group-II

Group-I	Group-II
A. S. Maria del Fiore Cathedral, Florence	1. Shell
B. Notre Dame Cathedral, Paris	2. Suspended roof
C. Olympic Arena, Tokyo	3. Double-shell dome
D. Bahá'i Temple, Delhi	4. Flying buttress

Choose the correct answer

- a) A-1,B-2, C-4, D-3
 - b) A-4, B-1, C-2, D-3
 - c) A-3, B -4, C-2, D-1
 - d) A-4, B-3, C-2, D-1
8. 'Palazzo Farnese', the largest palace of the High Renaissance is located in which city?
- a) Rome
 - b) Florence
 - c) Milano
 - d) Prato
9. The Pagodas at Mahabalipuram had been constructed by which rulers?
- a) Cholas
 - b) Pallavas
 - c) Pandyas
 - d) Cheras
10. Typical features of Buddhist architecture are
- a) Mandapa,Chattri, Amalaka, Torana
 - b) Stambha, Torana, Vimana, Harmika
 - c) Vedika, Chattri, Torana, Harmika
 - d) Vedika, Stupa, Chaitya, Vimana
11. A Rock-cut style of architecture is represented by
- a) Shyama Rama temple, Bishnupur
 - b) Kailasa Temple, Ellora
 - c) Kandariya Mahadeva Temple, Khajuraho
 - d) Sanchi Stupa
12. Which of the following is an Element of design?
- a) Colour
 - b) Balance
 - c) Rhythm
 - d) Unity
13. Which command in AutoCAD changes the size and spacing of the dashes in a *Dashed Line*?
- a) LT Scale
 - b) Thickness
 - c) L Type
 - d) Elev

14. Which command in AutoCAD restores an erased drawing?
- a) CUI
 - b) UCS
 - c) OOPS
 - d) RAY
15. In a bird's eye perspective view of a cuboid, the maximum number of vanishing points is
- a) 2
 - b) 3
 - c) 6
 - d) 1
16. Which of the following does not come under the principles of architectural composition?
- a) Rhythm and Balance
 - b) Scale and Proportion
 - c) Pattern and Colour
 - d) Unity and harmony
17. In 3DS Max, smooth 3D surfaces, by blending a series of selected shape curves, can be created by
- a) Sweeping
 - b) Lofting
 - c) Filleting
 - d) Extruding
18. Which layer in AutoCAD is not printed?
- a) Layer 0
 - b) Def points
 - c) dim
 - d) Layer 1
19. The site plan to be sent along with the application for permit for plots up to 500 sq m in size shall be drawn on a scale of
- a) 1:100
 - b) 1:500
 - c) 1:1000
 - d) 1:50,000
20. A plot measuring 50 m x 100 m is allowed 40 % ground coverage and permissible FAR of 2, then the maximum number of floors that can be built are
- a) 4
 - b) 5
 - c) 6
 - d) 7

21. The full form of ECBC stands for
- Electrical Conduit in Building Construction
 - Energy Conservation Building Code
 - Electrical Credit in Building Code
 - Energy Credit in Building Construction
22. As per CPWD Guidelines and Space Standards for 'Barrier Free Built Environment' the minimum turning radius for a wheelchair is
- 900 mm
 - 1200 mm
 - 1500 mm
 - 1800 mm
23. Match the terms in Group-I with the related terms in Group-II

Group-I	Group-II
A. Acquisition	1. Ownership
B. Planning permission	2. Construction
C. Building plan sanction	3. Land
D. Mutation	4. Land use

Choose the correct Answer

- A-4, B-3, C-1, D-2
 - A-3, B-4, C-2, D-1
 - A-3 B-4, C-2, D-1
 - A-1, B-3, C-2, D-4
24. The winner of 2022 Pritker prize is
- Arata Isozaki
 - Francis Kere
 - B. V. Doshi
 - Norman Foster
25. Complementary colours in a Munsell pigment colour wheel refers to
- Colours in alternate positions
 - Colours opposite to one another
 - Colours adjacent to each other
 - A pair of secondary colours
26. Which of the following options represents the elements of architecture?
- Point
 - Line
 - Plane
 - All of the above

27. If a brick is cut in such a way that the width at one end becomes half that of full brick, while the width at the other end equals the full width, what is it called?
- Queen Closer
 - Half Bat
 - Three quarter Bat
 - King Closer
28. What is a groove provided on the underside of sill, cornice or coping for rainwater protection called?
- Weathering
 - Grooving
 - Throating
 - Corbelling
29. What is the horizontal distance between the face of the first and last riser called?
- Stairwell
 - Going
 - Skirting
 - Railing
30. How many links are there in a Revenue chain (used for surveying)?
- 10
 - 16
 - 100
 - 150
31. What is calculated using the formula: $\frac{\text{Original cost of the asset} - \text{Scrap Value}}{\text{life in years}}$?
- Sinking fund
 - Annual Depreciation
 - Capitalized Value
 - Standard rent
32. What are the mix proportions of M15 concrete?
- 1:2:4
 - 1:1.5:3
 - 1:3:6
 - 1:1:3
33. Which of the following processes is not used for corrosion resistance of cast iron?
- Painting
 - Epoxy coating
 - Quenching
 - Galvanizing

34. The main parts of Total Station are
- Theodolite, tripod, data collector
 - EDM, theodolite, GPS
 - EDM, theodolite, data collector
 - EDM, dumpy level, data collector
35. The term 'Toothing' is a construction technique used in
- Wood construction
 - Reinforces Cement concrete construction
 - Brick Masonry
 - Steel Construction
36. If Beam : Column :: Transom: X, which of the following options can replace 'X'?
- Ceiling
 - Sill
 - Mullion
 - Balustrade
37. The correct sequence of stages during firing/ burning of bricks is
- Cooling- Oxidation – Vitrification – Dehydration
 - Dehydration – Oxidation- Vitrification- Cooling
 - Oxidation – Dehydration- Cooling – Vitrification
 - Vitrification –Dehydration- Oxidation – Cooling
38. On a floor plan the dashed line that appears approximately 24" outside the exterior wall represents
- Side walk
 - Roof overhang
 - Plumbing drain lines
 - None of the above
39. The term 'Cold Joint' refers to the
- expansion joint in large span concrete members
 - Interface between an already setting concrete and a fresh batch of concrete
 - Structural crack arrested by embedding metal rods
 - Joining of two similar metals in vacuum
40. Good quality cement contains higher percentage of
- Tri-calcium silicate
 - Di-calcium silicate
 - Tri-calcium aluminate
 - Tetra calcium aluminosilicate
41. 'SWOT' analysis is used for examining a situation's inherent
- Strength, Wastefulness, Opportunity and Tactfulness
 - Sanction, Weakness, Ownership and Threat
 - Strength, Weakness, Opportunity and Threat
 - Support, Wastefulness, Ownership and Transparency

42. In case of residential apartments, the effective floor area available for use within an apartment, is known as
- Carpet Area
 - Built-up Area
 - Plinth Area
 - Super Built-up Area
43. GST rate for architectural consultancy fees in India is
- 5%
 - 12%
 - 18%
 - 24%
44. The arch in the buildings in which center of arch lies below the springing line is called
- Semi-circular arch
 - Ogee arch
 - Pointed arch
 - Segmental Arch
45. Which type of steel is used for making of piles or drills?
- Mild carbon steel
 - Dead steel
 - High carbon steel
 - Cast iron steel
46. Overhead Water Tank is provided at which location of the hydraulic zone?
- Lowermost
 - Topmost
 - Middle level
 - All of the above
47. Ultra-Violet disinfection is used at which stage of Sewage Treatment process?
- Primary
 - Secondary
 - Tertiary
 - All of the above
48. As per Energy Conservation Building Code, Solar Water Heating should be designed for at least _____ of design capacity?
- One-fifth
 - One-fourth
 - One-third
 - Half

49. Calculation of quantity of rainwater from rooftop is done using which of the following formula?
- Rooftop area x Quantity of Rainfall x Run-off coefficient
 - Rooftop area x Quantity of Rainfall ÷ Run-off coefficient
 - Rooftop area ÷ Quantity of Rainfall x Run-off coefficient
 - Rooftop area ÷ Quantity of Rainfall x 100
50. A Fluid-driven Piston is mounted in which type of vertical transportation system?
- Escalator
 - Travelator
 - Hydraulic Lift
 - None of the above
51. What does RTT in elevator design stand for?
- Recurrent Travel Time
 - Repeated Travel Time
 - Round Trip Time
 - Repeated Trip Time
52. Considering the fire safety of the building, the minimum open space around the building and the turning radius of approach road to building for fire tender is
- Minimum open space = 6 m and turning radius = 7.5 m.
 - Minimum open space = 9 m and turning radius = 9 m.
 - Minimum open space = 4.5 m and turning radius = 9 m.
 - Minimum open space = 6 m and turning radius = 9 m.
53. The Energy Performance Index (EPI) of the buildings is
- Annual energy consumption in kWh / Total built up area (in sq m)
 - Total built up area (in sq m) / Annual energy consumption in kWh
 - Monthly energy consumption in kWh / Total built up area (in sq m)
 - Daily energy consumption in kWh / Total built up area (in sq m)
54. Which one of the following is not a sewage treatment process?
- Duckweed pond system
 - Eutrophication
 - Activated Sludge Process
 - Water Stabilization Pond System
55. Associate the fire safety requirements for high-rise buildings in Group-I with corresponding standards of the NBC-2016 in Group-II

Group-I	Group-II
A. Minimum Refuge area	1. 12.5 sqm/person
B. Maximum Travel distance	2. 2.0 m

C. Maximum Occupant load	3. 0.3 sqm/person
D. Minimum Stair case width	4. 30.0 m

Choose the correct answer

- a) A-4, B-1, C-3, D-2
 - b) A-1, B-2, C-4, D-4
 - c) A-3, B- 4, C-1, D-2
 - d) A-4, B-2, C-1, D-3
56. The unit of 'Thermal Conductivity' of a material is
- a) W/(m-K)
 - b) W/(m² K)
 - c) m K/W
 - d) m² K/W
57. Solid waste disposal method in which solid organic wastes are subject to combustion is known as
- a) Incineration
 - b) Composting
 - c) Bio-methanation
 - d) Land fill
58. A 'Vegetated Swale' is provided to
- a) Phytoremediation
 - b) Slow, filter and infiltrate storm water runoff
 - c) Facilitate speedy surface runoff in water logged areas
 - d) Used for irrigation
59. Which of the following gives the highest sound absorption in a room?
- a) Rigid wall
 - b) Rough ceiling
 - c) Soft curtain
 - d) Open window
60. Room air conditioners and packaged units are examples of
- a) Direct expansion systems
 - b) Indirect expansion systems
 - c) Chilled water systems
 - d) Indirect contraction systems
61. In the two-pipe system for the drainage of buildings, the discharge from the waste pipe is disconnected from the drain by using _____
- a) Gully trap
 - b) Silt trap
 - c) Floor trap
 - d) Grease trap

62. Commonly used coagulant, is
- a) Chlorine
 - b) Alum
 - c) Lime
 - d) Bleaching powder
63. A geologic formation which contains water and transmits it from one point to another in quantities sufficient to permit economic development is called
- a) Aquifer
 - b) Alluvial Fans
 - c) Aquiclude
 - d) Albedo
64. What is the scientific name equivalent to thermal mass?
- a) Thermal capacitance
 - b) Thermal conductance
 - c) Thermal conductivity
 - d) Thermal energy
65. What is the ratio of Tensile or Compressive stress to its corresponding Strain called?
- a) Young's Modulus
 - b) Bulk Modulus
 - c) Shear Modulus
 - d) Lateral Modulus
66. Ponding, Sprinkling, Fogging, Wet covering are techniques for _____.
- a) Compaction
 - b) Mixing
 - c) Curing
 - d) Batching
67. Which structural member comprises of small wedge-shaped units?
- a) Arch
 - b) Beam
 - c) Column
 - d) Flooring
68. Purlins are placed in which direction in a Trussed Roof?
- a) In the direction of Ridge
 - b) Perpendicular to the Ridge
 - c) Inclined to the Ridge
 - d) None of the above

69. The spherical surface of geodesic dome comprises of
- Isosceles triangle of uniform size
 - Equilateral triangles of uniform size
 - Isosceles triangle of various sizes
 - Equilateral triangles of various sizes
70. The three moments equation is applicable only when
- There is no settlement of supports
 - There is no discontinuity such as hinges within the span
 - The beam is prismatic
 - The spans are equal
71. In a flat slab, the load is transferred through
- Beam action
 - Membrane action
 - Plate action
 - Vector action
72. The term 'Cover block' is used as a building construction component in
- Brick wall
 - Curtain wall
 - Steel truss
 - RC beam
73. For loose soil, the formula used to find the minimum depth of foundation is
- Rankine's formula
 - Hiley formula
 - Bernoulli's formula
 - Newtonian formula
74. A 'Cadastral map' shows the
- Boundaries of fields, plots, houses and other properties.
 - Contours, rivers, forests, settlements, etc.
 - Only administrative boundaries of village, Municipality, Tehsil, District etc.
 - None of the above
75. What is the wavelength of the visible part of Sunlight?
- 290-380 nm
 - 380-700 nm
 - 700-2300 nm
 - > 2300 nm
76. Which Climate Zone is the Coldest?
- Temperate
 - Polar
 - Hot-Dry
 - Tropical

77. Which diagram is used to understand the predominant direction of Wind in a region?
- a) Wind Shadow
 - b) Wind Chart
 - c) Funnel Graph
 - d) Wind Rose
78. The ratio of Indoor Illumination to Outdoor Illumination expressed in percentage is called _____.
- a) Daylight Factor
 - b) Glare Factor
 - c) Lux Factor
 - d) Reflection Factor
79. What does VSA in design of a shading device stand for?
- a) Variable Shadow Angle
 - b) Vertical Shadow Angle
 - c) Variable Southern Angle
 - d) Vertical Southern Angle
80. What does PEDA stand for?
- a) Passive Energy Design Analysis
 - b) Passive Energy Development Agency
 - c) Punjab Energy Development Agency
 - d) Punjab Energy Design Agency
81. The concentric circles in a solar chart represent
- a) Azimuth angle
 - b) Altitude angle
 - c) Horizontal shadow angle
 - d) Vertical shadow angle
82. To avoid the toxic and undesirable smell and gases from industrial zone, on which part of the city, industries shall be provided ?
- a) Northern side
 - b) Windward side
 - c) Southern side
 - d) Leeward side
83. The abrupt change or junction between two ecological zones is termed as
- a) Ecological niche
 - b) Ecosystem
 - c) Ecotype
 - d) Ecotone

84. Which characteristics dominated the town planning of Medieval European towns?
- a) Acropolis and Agora
 - b) Forum and Radial Symmetry
 - c) Castles and Meandering Streets
 - d) Grid Iron Street Pattern
85. Who is considered as the “Father of Modern Town Planning”?
- a) Le Corbusier
 - b) Patrick Geddes
 - c) Ebenezer Howard
 - d) Clarence Perry
86. Who gave the concept of “City of Tomorrow”?
- a) Le Corbusier
 - b) F. L. Wright
 - c) Clarence Perry
 - d) Ebenezer Howard
87. In which year was NITI Aayog constituted after replacing Planning Commission?
- a) 2005
 - b) 2011
 - c) 2015
 - d) 2020
88. What does CTBUH stand for?
- a) Council on Travel Behavior and Urban Housing
 - b) Council on Tall Buildings and Urban Habitat
 - c) Centre of Tall Buildings and Urban Housing
 - d) Committee on Travel Behavior and Urban Habitat
89. Which one of the following is Not a land use zone?
- a) Residential Zone
 - b) Commercial Zone
 - c) Industrial Zone
 - d) Heritage Zone
90. The concept ‘Sight Distance’ is considered in the design of
- a) Road intersection
 - b) Fenestration
 - c) Open kitchen
 - d) Auditorium
91. Which of the following is a solar dish collector device that concentrates the sunlight to reach high temperature?
- a) Parabolic mirror
 - b) Parabolic lens
 - c) Concave lens
 - d) Convex mirror

92. What is a semi-covered pavilion in a garden known as?
- a) Pergola
 - b) Topiary
 - c) Gazebo
 - d) Silhouette
93. What is a stepped water feature known as?
- a) Spout
 - b) Waterfall
 - c) Pond
 - d) Cascade
94. Landscaping using minimum use of water is called _____.
- a) Hardscaping
 - b) Xeriscaping
 - c) Origami
 - d) Bonsai
95. The Japanese art of growing miniature trees is known as _____.
- a) Kasan
 - b) Kirigami
 - c) Bonsai
 - d) Origami
96. What kind of paving material should be used for facilitating ground water recharge?
- a) Concrete solid pavers
 - b) Perforated Pavers
 - c) Ceramic Tiles
 - d) Granite stone
97. Which plant help in improving indoor air quality?
- a) Plumeria Rubra
 - b) Casia Fistula
 - c) Bisantha
 - d) Areca Palm
98. The concept of 'Dry Garden' is associated with _____.
- a) Japanese Garden
 - b) Chinese Garden
 - c) Mughal Garden
 - d) Egyptian Garden

99. The term 'Dripline' in landscaping is
- Tree rings
 - Vegetated drains
 - Outer circumference of canopy of tree
 - No irrigation
100. In landscaping, covering of soil with wooden chips refers to the term
- Mulching
 - Pruning
 - Xeriscaping
 - Phytoremediation
101. A worker has only ₹ 1 and ₹ 2 coins with her. If the total number of coins she has is 50 and the amount of money with her is ₹ 75, then the number of ₹ 1 and ₹ 2 coins are, respectively
- 15 and 35
 - 35 and 15
 - 30 and 20
 - 25 and 25
102. Joint family consists of seven members A, B, C, D, E, F and G, with three females. G is a widow and sister-in-law of D's father F. B and D are siblings and A is the daughter of B. C is the cousin of B. Who is E?
- Wife of F
 - Grandmother of A
 - Aunt of C
- Select the correct answer using the code given below.
- 1 and 2 only
 - 2 and 3 only
 - 1 and 3 only
 - 1, 2 and 3
103. A clock is started at noon. By 20 minutes past 6, the hour hand has turned through
- 170°
 - 182°
 - 185°
 - 190°
104. A train is running at the rate of 40 kmph. A man is also going in the same direction parallel to the train at the speed of 25 kmph. If the train crosses the man in 48 seconds, the length of the train is _____ metres.
- 100
 - 150
 - 200
 - None of these

105. The sum of two numbers is 30 and their product is 216. Then, one of the numbers must be
- a) 16
 - b) 22
 - c) 12
 - d) 24
106. There are two candidates Bhiku and Mhatre for an election. Bhiku gets 65 % of the total valid votes. If the total votes were 6,000, what is the number of valid votes that the other candidate Mhatre gets, if 25 % of the total votes were declared invalid?
- a) 1575
 - b) 1625
 - c) 1675
 - d) 1525
107. In a certain code language 'te da ka ni' means 'intelligence is in genes', 'se po lo ni' means, 'genes are not responsible' and 'ba da fu te' means 'intelligence is through experience'. What does 'ka' stand for in that code language?
- a) genes
 - b) through
 - c) intelligence
 - d) in
108. P, Q, R, S and T are sitting in a straight-line facing North. P sits next to S but not to T. Q is sitting next to R who sits on the extreme left corner. Who sits to the left of S if T does not sit next to Q?
- a) P
 - b) Q
 - c) R
 - d) T
109. If two dice are thrown, what is the probability that at least one of them shows a number greater than 3?
- a) 0.75
 - b) 0.80
 - c) 0.65
 - d) 0.85
110. A cattle trader sells two cows at the same price. He gains 10% in one deal and loses 10% in the other. What will be his final gain / loss after selling two cows?
- a) Loss by 1%
 - b) Gain by 1%
 - c) Loss by 2%
 - d) Neither gains nor loses

111. Rajatarangini is a Dynastic chronicle of the rulers of Kashmir which was written by

- a) Bilhana
- b) Banabhatta
- c) Kalhana
- d) Vakpati

112. The famous battle of Saragarhi was fought in

- a) 1895
- b) 1899
- c) 1897
- d) 1896

113. Consider the following statement :

- i. The people in Punjab sing :”Sundar Mundariye ho. Tera Kaun Vichara ho. Dulla Bhatti walla ho” during lohri.
- ii. Dulla Bhatti had raised a rebellion against the Mughals.

Which of the above statement is/are true ?

- a) Only 1
- b) Only 2
- c) Both 1 and 2
- d) Neither 1 nor 2

114. In regard to the reservation of women in the Panchayat, consider the following statements:

- 1. Not less than 1/3rd of the total seats should be reserved for women in all the tiers of Panchayat
- 2. Among the Chairpersons, the amendment states that 1/3rd seats should be reserved for women
- 3. Not less than 1/3rd posts in different Standing Committees of the Panchayat should be reserved for women

Which of the above statements are correct?

- a) 1 and 3 only
- b) 2 and 3 only
- c) 1 and 2 only
- d) 1,2 and 3

115. The term air quality index (AQI) is generally used for ascertaining the level of air pollution, and it is based on measurement of particulate matter (PM_{2.5} and PM₁₀), ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide emissions. What is the upper threshold value of AQI above which air quality is considered as unhealthy?

- a) The threshold value of AQI is 250
- b) The threshold value of AQI is 100
- c) The threshold value of AQI is 150
- d) The threshold value of AQI is 50

116. Select the correct pair

1. VPN : Virtual Private Network
 2. WEP : Wireless Equivalent Protocol
 3. WPA : WI-FI Protected Access
 4. Wi-Fi : Wireless Fidelity
- a) 1, 3 and 4
 - b) 2, 3 and 4
 - c) 2 and 3
 - d) 1 and 4

117. Which of the following is not an aerospace material?

- a) Plastic
- b) Silica
- c) Aluminium alloys
- d) Polymers

118. Which agreement was signed between India and Pakistan after Indo-Pakistani war of 1965?

- a) Tashkent Agreement
- b) Bangkok Agreement
- c) Panchsheel Agreement
- d) None of the above

119. Consider the following statements regarding FIFA world cup:

1. The 2022 FIFA World Cup, is the 22nd FIFA World Cup.
2. The 2022 FIFA World Cup is taking place in Qatar and is the second World Cup to be held in the Arab world.
3. There will be 32 participating teams in 2022 FIFA World Cup
4. The opening match was between Qatar and Ecuador at Al Bayt Stadium, Al Khor and Qatar lost the match 2–0.

Which of the above statements is correct

- a) 1, 2 and 3 only
- b) 2, 3 and 4 only
- c) 1, 3 and 4 only
- d) 1, 2, 3 and 4

120. Vikram-S, India's first privately developed rocket, which successfully lifted off from the spaceport in Sriharikota recently has been developed by

- a) Hindustan Aeronautics Limited
- b) Boeing India Private Limited
- c) Skyroot Aerospace Private Limited
- d) Lockheed Martin India Private Limited

Space for Rough work

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Candidate's Signature (Please sign in the box)

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1. The candidate shall NOT open this booklet till the time told to do so by the Invigilation Staff. However, in the meantime, the candidate can read these instructions carefully and subsequently fill the appropriate columns given above in CAPITAL letters. The candidate may also fill the relevant boxes out of 1 to 9 of the Optical Mark Reader (OMR) response sheet, supplied separately.
2. Use only blue or black **ball point pen** to fill the relevant columns on this page as well as in OMR sheet. Use of Ink pen or any other pen is not allowed.
3. The candidate shall be liable for any adverse effect if the information given above is wrong or illegible or incomplete.
4. Each candidate is required to attempt 120 questions in 120 minutes, except for orthopedically/visually impaired candidates, who would be given 40 extra minutes, for marking correct responses on the OMR sheet.
5. The question paper booklet has 20 pages.
6. The candidates, when allowed to open the question paper booklet, must first check the entire booklet to confirm that the booklet has complete number of pages, the pages printed correctly and there are no blank pages. In case there is any such error in the question paper booklet then the candidate should IMMEDIATELY bring this fact to the notice of the Invigilation Staff and obtain a new booklet of the same series as given earlier.
7. The serial number of the new Question booklet if issued for some reason should be entered in the relevant column of the OMR. The Invigilation Staff must make necessary corrections in their record regarding the change in the serial no. of Question booklet.
8. The paper consists of total 480 Marks. Each question shall carry 4 marks. There are four options for each question and the candidate has to mark the MOST APPROPRIATE answer on the OMR response sheet.
9. There is negative marking (1 mark for each question) for answers wrongly answered by the candidate.
10. Use of Electronic/Manual Calculator is prohibited.
11. The candidate **MUST READ INSTRUCTIONS BEHIND THE OMR SHEET** before answering the questions and check that two carbon copies attached to the OMR sheet are intact.

1. The term air quality index (AQI) is generally used for ascertaining the level of air pollution, and it is based on measurement of particulate matter (PM_{2.5} and PM₁₀), ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide emissions. What is the upper threshold value of AQI above which air quality is considered as unhealthy?
 - a) The threshold value of AQI is 250
 - b) The threshold value of AQI is 100
 - c) The threshold value of AQI is 150
 - d) The threshold value of AQI is 50

2. Select the correct pair
 1. VPN : Virtual Private Network
 2. WEP : Wireless Equivalent Protocol
 3. WPA : WI-FI Protected Access
 4. Wi-Fi : Wireless Fidelity
 - a) 1, 3 and 4
 - b) 2, 3 and 4
 - c) 2 and 3
 - d) 1 and 4

3. Which of the following is not an aerospace material?
 - a) Plastic
 - b) Silica
 - c) Aluminium alloys
 - d) Polymers

4. Which agreement was signed between India and Pakistan after Indo-Pakistani war of 1965?
 - a) Tashkent Agreement
 - b) Bangkok Agreement
 - c) Panchsheel Agreement
 - d) None of the above

5. Consider the following statements regarding FIFA world cup:
 1. The 2022 FIFA World Cup, is the 22nd FIFA World Cup.
 2. The 2022 FIFA World Cup is taking place in Qatar and is the second World Cup to be held in the Arab world.
 3. There will be 32 participating teams in 2022 FIFA World Cup
 4. The opening match was between Qatar and Ecuador at Al Bayt Stadium, Al Khor and Qatar lost the match 2–0.

Which of the above statements is correct

 - a) 1, 2 and 3 only
 - b) 2, 3 and 4 only
 - c) 1, 3 and 4 only
 - d) 1, 2, 3 and 4

6. Vikram-S, India's first privately developed rocket, which successfully lifted off from the spaceport in Sriharikota recently has been developed by
- Hindustan Aeronautics Limited
 - Boeing India Private Limited
 - Skyroot Aerospace Private Limited
 - Lockheed Martin India Private Limited
7. Which of the following is a gateway in Dravidian temples?
- Gopuram
 - Vimana
 - Antarala
 - Kund
8. Who designed the dome of Florence Cathedral?
- Michelangelo
 - Antonio da Sangallo
 - Filippo Brunelleschi
 - F. L. Wright
9. What is the height of Qutab Minar?
- 62 m
 - 92 m
 - 73 m
 - 83 m
10. Adhai din ka Jhompra Mosque is located in which Indian city?
- Jaipur
 - Ajmer
 - Delhi
 - Fatehpur Sikri
11. Among the following monuments of ancient Greece, the only Octastyle Peripteral Temple with eight towering Doric columns lining both east and west facades is
- Temple of Horus
 - Temple of Athena
 - Temple of Apollo
 - The Parthenon
12. The Golden Ratio refers to
- $1:\sqrt{2}$
 - 1:1.618
 - 1:1
 - 16:9

13. Match the iconic architectural examples in Group-I with their predominant structural systems in Group-II

Group-I	Group-II
A. S. Maria del Fiore Cathedral, Florence	1. Shell
B. Notre Dame Cathedral, Paris	2. Suspended roof
C. Olympic Arena, Tokyo	3. Double-shell dome
D. Bahá'i Temple, Delhi	4. Flying buttress

Choose the correct answer

- a) A-1, B-2, C-4, D-3
 - b) A-4, B-1, C-2, D-3
 - c) A-3, B -4, C-2, D-1
 - d) A-4, B-3, C-2, D-1
14. 'Palazzo Farnese', the largest palace of the High Renaissance is located in which city?
- a) Rome
 - b) Florence
 - c) Milano
 - d) Prato
15. The Pagodas at Mahabalipuram had been constructed by which rulers?
- a) Cholas
 - b) Pallavas
 - c) Pandyas
 - d) Cheras
16. Typical features of Buddhist architecture are
- a) Mandapa, Chattri, Amalaka, Torana
 - b) Stambha, Torana, Vimana, Harmika
 - c) Vedika, Chattri, Torana, Harmika
 - d) Vedika, Stupa, Chaitya, Vimana
17. A Rock-cut style of architecture is represented by
- a) Shyama Rama temple, Bishnupur
 - b) Kailasa Temple, Ellora
 - c) Kandariya Mahadeva Temple, Khajuraho
 - d) Sanchi Stupa
18. Which of the following is an Element of design?
- a) Colour
 - b) Balance
 - c) Rhythm
 - d) Unity

19. Which command in AutoCAD changes the size and spacing of the dashes in a *Dashed Line*?
- a) LT Scale
 - b) Thickness
 - c) L Type
 - d) Elev
20. Which command in AutoCAD restores an erased drawing?
- a) CUI
 - b) UCS
 - c) OOPS
 - d) RAY
21. In a bird's eye perspective view of a cuboid, the maximum number of vanishing points is
- a) 2
 - b) 3
 - c) 6
 - d) 1
22. Which of the following does not come under the principles of architectural composition?
- a) Rhythm and Balance
 - b) Scale and Proportion
 - c) Pattern and Colour
 - d) Unity and harmony
23. In 3DS Max, smooth 3D surfaces, by blending a series of selected shape curves, can be created by
- a) Sweeping
 - b) Lofting
 - c) Filleting
 - d) Extruding
24. Which layer in AutoCAD is not printed?
- a) Layer 0
 - b) Def points
 - c) dim
 - d) Layer 1
25. The site plan to be sent along with the application for permit for plots up to 500 sq m in size shall be drawn on a scale of
- a) 1:100
 - b) 1:500
 - c) 1:1000
 - d) 1:50,000

26. A plot measuring 50 m x 100 m is allowed 40 % ground coverage and permissible FAR of 2, then the maximum number of floors that can be built are
- 4
 - 5
 - 6
 - 7
27. The full form of ECBC stands for
- Electrical Conduit in Building Construction
 - Energy Conservation Building Code
 - Electrical Credit in Building Code
 - Energy Credit in Building Construction
28. As per CPWD Guidelines and Space Standards for 'Barrier Free Built Environment' the minimum turning radius for a wheelchair is
- 900 mm
 - 1200 mm
 - 1500 mm
 - 1800 mm
29. Match the terms in Group-I with the related terms in Group-II

Group-I	Group-II
A. Acquisition	1. Ownership
B. Planning permission	2. Construction
C. Building plan sanction	3. Land
D. Mutation	4. Land use

Choose the correct Answer

- A-4, B-3, C-1, D-2
 - A-3, B-4, C-2, D-1
 - A-3 B-4, C-2, D-1
 - A-1, B-3, C-2, D-4
30. The winner of 2022 Pritker prize is
- Arata Isozaki
 - Francis Kere
 - B. V. Doshi
 - Norman Foster
31. Complementary colours in a Munsell pigment colour wheel refers to
- Colours in alternate positions
 - Colours opposite to one another
 - Colours adjacent to each other
 - A pair of secondary colours

32. Which of the following options represents the elements of architecture?
- Point
 - Line
 - Plane
 - All of the above
33. If a brick is cut in such a way that the width at one end becomes half that of full brick, while the width at the other end equals the full width, what is it called?
- Queen Closer
 - Half Bat
 - Three quarter Bat
 - King Closer
34. What is a groove provided on the underside of sill, cornice or coping for rainwater protection called?
- Weathering
 - Grooving
 - Throating
 - Corbelling
35. What is the horizontal distance between the face of the first and last riser called?
- Stairwell
 - Going
 - Skirting
 - Railing
36. How many links are there in a Revenue chain (used for surveying)?
- 10
 - 16
 - 100
 - 150
37. What is calculated using the formula: $\frac{\text{Original cost of the asset} - \text{Scrap Value}}{\text{life in years}}$?
- Sinking fund
 - Annual Depreciation
 - Capitalized Value
 - Standard rent
38. What are the mix proportions of M15 concrete?
- 1:2:4
 - 1:1.5:3
 - 1:3:6
 - 1:1:3

39. Which of the following processes is not used for corrosion resistance of cast iron?
- Painting
 - Epoxy coating
 - Quenching
 - Galvanizing
40. The main parts of Total Station are
- Theodolite, tripod, data collector
 - EDM, theodolite, GPS
 - EDM, theodolite, data collector
 - EDM, dumpy level, data collector
41. The term 'Toothing' is a construction technique used in
- Wood construction
 - Reinforces Cement concrete construction
 - Brick Masonry
 - Steel Construction
42. If Beam : Column :: Transom: X, which of the following options can replace 'X'?
- Ceiling
 - Sill
 - Mullion
 - Balustrade
43. The correct sequence of stages during firing/ burning of bricks is
- Cooling- Oxidation – Vitrification – Dehydration
 - Dehydration – Oxidation- Vitrification- Cooling
 - Oxidation – Dehydration- Cooling – Vitrification
 - Vitrification –Dehydration- Oxidation – Cooling
44. On a floor plan the dashed line that appears approximately 24" outside the exterior wall represents
- Side walk
 - Roof overhang
 - Plumbing drain lines
 - None of the above
45. The term 'Cold Joint' refers to the
- expansion joint in large span concrete members
 - Interface between an already setting concrete and a fresh batch of concrete
 - Structural crack arrested by embedding metal rods
 - Joining of two similar metals in vacuum
46. Good quality cement contains higher percentage of
- Tri-calcium silicate
 - Di-calcium silicate
 - Tri-calcium aluminate
 - Tetra calcium aluminosilicate

47. 'SWOT' analysis is used for examining a situation's inherent
- a) Strength, Wastefulness, Opportunity and Tactfulness
 - b) Sanction, Weakness, Ownership and Threat
 - c) Strength, Weakness, Opportunity and Threat
 - d) Support, Wastefulness, Ownership and Transparency
48. In case of residential apartments, the effective floor area available for use within an apartment, is known as
- a) Carpet Area
 - b) Built-up Area
 - c) Plinth Area
 - d) Super Built-up Area
49. GST rate for architectural consultancy fees in India is
- a) 5%
 - b) 12%
 - c) 18%
 - d) 24%
50. The arch in the buildings in which center of arch lies below the springing line is called
- a) Semi-circular arch
 - b) Ogee arch
 - c) Pointed arch
 - d) Segmental Arch
51. Which type of steel is used for making of piles or drills?
- a) Mild carbon steel
 - b) Dead steel
 - c) High carbon steel
 - d) Cast iron steel
52. Overhead Water Tank is provided at which location of the hydraulic zone?
- a) Lowermost
 - b) Topmost
 - c) Middle level
 - d) All of the above
53. Ultra-Violet disinfection is used at which stage of Sewage Treatment process?
- a) Primary
 - b) Secondary
 - c) Tertiary
 - d) All of the above

54. As per Energy Conservation Building Code, Solar Water Heating should be designed for at least _____ of design capacity?
- a) One-fifth
 - b) One-fourth
 - c) One-third
 - d) Half
55. Calculation of quantity of rainwater from rooftop is done using which of the following formula?
- a) Rooftop area x Quantity of Rainfall x Run-off coefficient
 - b) Rooftop area x Quantity of Rainfall ÷ Run-off coefficient
 - c) Rooftop area ÷ Quantity of Rainfall x Run-off coefficient
 - d) Rooftop area ÷ Quantity of Rainfall x 100
56. A Fluid-driven Piston is mounted in which type of vertical transportation system?
- a) Escalator
 - b) Travelator
 - c) Hydraulic Lift
 - d) None of the above
57. What does RTT in elevator design stand for?
- a) Recurrent Travel Time
 - b) Repeated Travel Time
 - c) Round Trip Time
 - d) Repeated Trip Time
58. Considering the fire safety of the building, the minimum open space around the building and the turning radius of approach road to building for fire tender is
- a) Minimum open space = 6 m and turning radius = 7.5 m.
 - b) Minimum open space = 9 m and turning radius = 9 m.
 - c) Minimum open space = 4.5 m and turning radius = 9 m.
 - d) Minimum open space = 6 m and turning radius = 9 m.
59. The Energy Performance Index (EPI) of the buildings is
- a) Annual energy consumption in kWh / Total built up area (in sq m)
 - b) Total built up area (in sq m) / Annual energy consumption in kWh
 - c) Monthly energy consumption in kWh / Total built up area (in sq m)
 - d) Daily energy consumption in kWh / Total built up area (in sq m)
60. Which one of the following is not a sewage treatment process?
- a) Duckweed pond system
 - b) Eutrophication
 - c) Activated Sludge Process
 - d) Water Stabilization Pond System

61. Associate the fire safety requirements for high-rise buildings in Group-I with corresponding standards of the NBC-2016 in Group-II

Group-I	Group-II
A. Minimum Refuge area	1. 12.5 sqm/person
B. Maximum Travel distance	2. 2.0 m
C. Maximum Occupant load	3. 0.3 sqm/person
D. Minimum Stair case width	4. 30.0 m

Choose the correct answer

- a) A-4, B-1, C-3, D-2
 - b) A-1, B-2, C-4, D-4
 - c) A-3, B- 4, C-1, D-2
 - d) A-4, B-2, C-1, D-3
62. The unit of 'Thermal Conductivity' of a material is
- a) W/(m-K)
 - b) W/(m² K)
 - c) m K/W
 - d) m² K/W
63. Solid waste disposal method in which solid organic wastes are subject to combustion is known as
- a) Incineration
 - b) Composting
 - c) Bio-methanation
 - d) Land fill
64. A 'Vegetated Swale' is provided to
- a) Phytoremediation
 - b) Slow, filter and infiltrate storm water runoff
 - c) Facilitate speedy surface runoff in water logged areas
 - d) Used for irrigation
65. Which of the following gives the highest sound absorption in a room?
- a) Rigid wall
 - b) Rough ceiling
 - c) Soft curtain
 - d) Open window
66. Room air conditioners and packaged units are examples of
- a) Direct expansion systems
 - b) Indirect expansion systems
 - c) Chilled water systems
 - d) Indirect contraction systems

67. In the two-pipe system for the drainage of buildings, the discharge from the waste pipe is disconnected from the drain by using _____
- a) Gully trap
 - b) Silt trap
 - c) Floor trap
 - d) Grease trap
68. Commonly used coagulant, is
- a) Chlorine
 - b) Alum
 - c) Lime
 - d) Bleaching powder
69. A geologic formation which contains water and transmits it from one point to another in quantities sufficient to permit economic development is called
- a) Aquifer
 - b) Alluvial Fans
 - c) Aquiclude
 - d) Albedo
70. What is the scientific name equivalent to thermal mass?
- a) Thermal capacitance
 - b) Thermal conductance
 - c) Thermal conductivity
 - d) Thermal energy
71. What is the ratio of Tensile or Compressive stress to its corresponding Strain called?
- a) Young's Modulus
 - b) Bulk Modulus
 - c) Shear Modulus
 - d) Lateral Modulus
72. Ponding, Sprinkling, Fogging, Wet covering are techniques for _____.
- a) Compaction
 - b) Mixing
 - c) Curing
 - d) Batching
73. Which structural member comprises of small wedge-shaped units?
- a) Arch
 - b) Beam
 - c) Column
 - d) Flooring

74. Purlins are placed in which direction in a Trussed Roof?
- a) In the direction of Ridge
 - b) Perpendicular to the Ridge
 - c) Inclined to the Ridge
 - d) None of the above
75. The spherical surface of geodesic dome comprises of
- a) Isosceles triangle of uniform size
 - b) Equilateral triangles of uniform size
 - c) Isosceles triangle of various sizes
 - d) Equilateral triangles of various sizes
76. The three moments equation is applicable only when
- a) There is no settlement of supports
 - b) There is no discontinuity such as hinges within the span
 - c) The beam is prismatic
 - d) The spans are equal
77. In a flat slab, the load is transferred through
- a) Beam action
 - b) Membrane action
 - c) Plate action
 - d) Vector action
78. The term 'Cover block' is used as a building construction component in
- a) Brick wall
 - b) Curtain wall
 - c) Steel truss
 - d) RC beam
79. For loose soil, the formula used to find the minimum depth of foundation is
- a) Rankine's formula
 - b) Hiley formula
 - c) Bernoulli's formula
 - d) Newtonian formula
80. A 'Cadastral map' shows the
- a) Boundaries of fields, plots, houses and other properties.
 - b) Contours, rivers, forests, settlements, etc.
 - c) Only administrative boundaries of village, Municipality, Tehsil, District etc.
 - d) None of the above
81. What is the wavelength of the visible part of Sunlight?
- a) 290-380 nm
 - b) 380-700 nm
 - c) 700-2300 nm
 - d) > 2300 nm

82. Which Climate Zone is the Coldest?
- a) Temperate
 - b) Polar
 - c) Hot-Dry
 - d) Tropical
83. Which diagram is used to understand the predominant direction of Wind in a region?
- a) Wind Shadow
 - b) Wind Chart
 - c) Funnel Graph
 - d) Wind Rose
84. The ratio of Indoor Illumination to Outdoor Illumination expressed in percentage is called _____.
- a) Daylight Factor
 - b) Glare Factor
 - c) Lux Factor
 - d) Reflection Factor
85. What does VSA in design of a shading device stand for?
- a) Variable Shadow Angle
 - b) Vertical Shadow Angle
 - c) Variable Southern Angle
 - d) Vertical Southern Angle
86. What does PEDDA stand for?
- a) Passive Energy Design Analysis
 - b) Passive Energy Development Agency
 - c) Punjab Energy Development Agency
 - d) Punjab Energy Design Agency
87. The concentric circles in a solar chart represent
- a) Azimuth angle
 - b) Altitude angle
 - c) Horizontal shadow angle
 - d) Vertical shadow angle
88. To avoid the toxic and undesirable smell and gases from industrial zone, on which part of the city, industries shall be provided ?
- a) Northern side
 - b) Windward side
 - c) Southern side
 - d) Leeward side

89. The abrupt change or junction between two ecological zones is termed as
- a) Ecological niche
 - b) Ecosystem
 - c) Ecotype
 - d) Ecotone
90. Which characteristics dominated the town planning of Medieval European towns?
- a) Acropolis and Agora
 - b) Forum and Radial Symmetry
 - c) Castles and Meandering Streets
 - d) Grid Iron Street Pattern
91. Who is considered as the “Father of Modern Town Planning”?
- a) Le Corbusier
 - b) Patrick Geddes
 - c) Ebenezer Howard
 - d) Clarence Perry
92. Who gave the concept of “City of Tomorrow”?
- a) Le Corbusier
 - b) F. L. Wright
 - c) Clarence Perry
 - d) Ebenezer Howard
93. In which year was NITI Aayog constituted after replacing Planning Commission?
- a) 2005
 - b) 2011
 - c) 2015
 - d) 2020
94. What does CTBUH stand for?
- a) Council on Travel Behavior and Urban Housing
 - b) Council on Tall Buildings and Urban Habitat
 - c) Centre of Tall Buildings and Urban Housing
 - d) Committee on Travel Behavior and Urban Habitat
95. Which one of the following is Not a land use zone?
- a) Residential Zone
 - b) Commercial Zone
 - c) Industrial Zone
 - d) Heritage Zone
96. The concept ‘Sight Distance’ is considered in the design of
- a) Road intersection
 - b) Fenestration
 - c) Open kitchen
 - d) Auditorium

97. Which of the following is a solar dish collector device that concentrates the sunlight to reach high temperature?
- a) Parabolic mirror
 - b) Parabolic lens
 - c) Concave lens
 - d) Convex mirror
98. What is a semi-covered pavilion in a garden known as?
- a) Pergola
 - b) Topiary
 - c) Gazebo
 - d) Silhouette
99. What is a stepped water feature known as?
- a) Spout
 - b) Waterfall
 - c) Pond
 - d) Cascade
100. Landscaping using minimum use of water is called _____.
- a) Hardscaping
 - b) Xeriscaping
 - c) Origami
 - d) Bonsai
101. The Japanese art of growing miniature trees is known as _____.
- a) Kasan
 - b) Kirigami
 - c) Bonsai
 - d) Origami
102. What kind of paving material should be used for facilitating ground water recharge?
- a) Concrete solid pavers
 - b) Perforated Pavers
 - c) Ceramic Tiles
 - d) Granite stone
103. Which plant help in improving indoor air quality?
- a) Plumeria Rubra
 - b) Casia Fistula
 - c) Bisantha
 - d) Areca Palm

104. The concept of 'Dry Garden' is associated with
- Japanese Garden
 - Chinese Garden
 - Mughal Garden
 - Egyptian Garden
105. The term 'Dripline' in landscaping is
- Tree rings
 - Vegetated drains
 - Outer circumference of canopy of tree
 - No irrigation
106. In landscaping, covering of soil with wooden chips refers to the term
- Mulching
 - Pruning
 - Xeriscaping
 - Phytoremediation
107. A worker has only ₹ 1 and ₹ 2 coins with her. If the total number of coins she has is 50 and the amount of money with her is ₹ 75, then the number of ₹ 1 and ₹ 2 coins are, respectively
- 15 and 35
 - 35 and 15
 - 30 and 20
 - 25 and 25
108. Joint family consists of seven members A, B, C, D, E, F and G, with three females. G is a widow and sister-in-law of D's father F. B and D are siblings and A is the daughter of B. C is the cousin of B. Who is E?
- Wife of F
 - Grandmother of A
 - Aunt of C
- Select the correct answer using the code given below.
- 1 and 2 only
 - 2 and 3 only
 - 1 and 3 only
 - 1, 2 and 3
109. A clock is started at noon. By 20 minutes past 6, the hour hand has turned through
- 170°
 - 182°
 - 185°
 - 190°

110. A train is running at the rate of 40 kmph. A man is also going in the same direction parallel to the train at the speed of 25 kmph. If the train crosses the man in 48 seconds, the length of the train is _____ metres.
- a) 100
 - b) 150
 - c) 200
 - d) None of these
111. The sum of two numbers is 30 and their product is 216. Then, one of the numbers must be
- a) 16
 - b) 22
 - c) 12
 - d) 24
112. There are two candidates Bhiku and Mhatre for an election. Bhiku gets 65 % of the total valid votes. If the total votes were 6,000, what is the number of valid votes that the other candidate Mhatre gets, if 25 % of the total votes were declared invalid?
- a) 1575
 - b) 1625
 - c) 1675
 - d) 1525
113. In a certain code language 'te da ka ni' means 'intelligence is in genes', 'se po lo ni' means, 'genes are not responsible' and 'ba da fu te' means 'intelligence is through experience'. What does 'ka' stand for in that code language?
- a) genes
 - b) through
 - c) intelligence
 - d) in
114. P, Q, R, S and T are sitting in a straight-line facing North. P sits next to S but not to T. Q is sitting next to R who sits on the extreme left corner. Who sits to the left of S if T does not sit next to Q?
- a) P
 - b) Q
 - c) R
 - d) T
115. If two dice are thrown, what is the probability that at least one of them shows a number greater than 3?
- a) 0.75
 - b) 0.80
 - c) 0.65
 - d) 0.85

116. A cattle trader sells two cows at the same price. He gains 10% in one deal and loses 10% in the other. What will be his final gain / loss after selling two cows?

- a) Loss by 1%
- b) Gain by 1%
- c) Loss by 2%
- d) Neither gains nor loses

117. Rajatarangini is a Dynastic chronicle of the rulers of Kashmir which was written by

- a) Bilhana
- b) Banabhatta
- c) Kalhana
- d) Vakpati

118. The famous battle of Saragarhi was fought in

- a) 1895
- b) 1899
- c) 1897
- d) 1896

119. Consider the following statement :

- i. The people in Punjab sing :”Sundar Mundariye ho. Tera Kaun Vichara ho. Dulla Bhatti walla ho” during lohri.
- ii. Dulla Bhatti had raised a rebellion against the Mughals.

Which of the above statement is/are true ?

- a) Only 1
- b) Only 2
- c) Both 1 and 2
- d) Neither 1 nor 2

120. In regard to the reservation of women in the Panchayat, consider the following statements:

- 1. Not less than $\frac{1}{3}^{\text{rd}}$ of the total seats should be reserved for women in all the tiers of Panchayat
- 2. Among the Chairpersons, the amendment states that $\frac{1}{3}^{\text{rd}}$ seats should be reserved for women
- 3. Not less than $\frac{1}{3}^{\text{rd}}$ posts in different Standing Committees of the Panchayat should be reserved for women

Which of the above statements are correct?

- a) 1 and 3 only
- b) 2 and 3 only
- c) 1 and 2 only
- d) 1,2 and 3

Space for Rough work

PUNJAB PUBLIC SERVICE COMMISSION

Objective Type Test (November-2022) for Recruitment to the post of Building Inspector in the Department of Local Government, Government of Punjab

READ INSTRUCTIONS BEFORE FILLING ANY DETAILS OR ATTEMPTING TO ANSWER THE QUESTIONS.

Total Questions: 120
Time Allowed: 2 Hours

Candidate's Name _____

Father's Name _____

Date of Birth
DD MM YYYY

OMR Response Sheet No. _____

Roll No. _____

Candidate's Signature (Please sign in the box)

Question
Booklet Set

C

Booklet Series No.

INSTRUCTIONS

1. The candidate shall NOT open this booklet till the time told to do so by the Invigilation Staff. However, in the meantime, the candidate can read these instructions carefully and subsequently fill the appropriate columns given above in CAPITAL letters. The candidate may also fill the relevant boxes out of 1 to 9 of the Optical Mark Reader (OMR) response sheet, supplied separately.
2. Use only blue or black **ball point pen** to fill the relevant columns on this page as well as in OMR sheet. Use of Ink pen or any other pen is not allowed.
3. The candidate shall be liable for any adverse effect if the information given above is wrong or illegible or incomplete.
4. Each candidate is required to attempt 120 questions in 120 minutes, except for orthopedically/visually impaired candidates, who would be given 40 extra minutes, for marking correct responses on the OMR sheet.
5. The question paper booklet has 20 pages.
6. The candidates, when allowed to open the question paper booklet, must first check the entire booklet to confirm that the booklet has complete number of pages, the pages printed correctly and there are no blank pages. In case there is any such error in the question paper booklet then the candidate should IMMEDIATELY bring this fact to the notice of the Invigilation Staff and obtain a new booklet of the same series as given earlier.
7. The serial number of the new Question booklet if issued for some reason should be entered in the relevant column of the OMR. The Invigilation Staff must make necessary corrections in their record regarding the change in the serial no. of Question booklet.
8. The paper consists of total 480 Marks. Each question shall carry 4 marks. There are four options for each question and the candidate has to mark the MOST APPROPRIATE answer on the OMR response sheet.
9. There is negative marking (1 mark for each question) for answers wrongly answered by the candidate.
10. Use of Electronic/Manual Calculator is prohibited.
11. The candidate MUST READ INSTRUCTIONS BEHIND THE OMR SHEET before answering the questions and check that two carbon copies attached to the OMR sheet are intact.

1. If two dice are thrown, what is the probability that at least one of them shows a number greater than 3?
 - a) 0.75
 - b) 0.80
 - c) 0.65
 - d) 0.85
2. A cattle trader sells two cows at the same price. He gains 10% in one deal and loses 10% in the other. What will be his final gain / loss after selling two cows?
 - a) Loss by 1%
 - b) Gain by 1%
 - c) Loss by 2%
 - d) Neither gains nor loses
3. Rajatarangini is a Dynastic chronicle of the rulers of Kashmir which was written by
 - a) Bilhana
 - b) Banabhatta
 - c) Kalhana
 - d) Vakpati
4. The famous battle of Saragarhi was fought in
 - a) 1895
 - b) 1899
 - c) 1897
 - d) 1896
5. Consider the following statement :
 - i. The people in Punjab sing :”Sundar Mundariye ho. Tera Kaun Vichara ho. Dulla Bhatti walla ho” during lohri.
 - ii. Dulla Bhatti had raised a rebellion against the Mughals.

Which of the above statement is/are true ?

 - a) Only 1
 - b) Only 2
 - c) Both 1 and 2
 - d) Neither 1 nor 2
6. In regard to the reservation of women in the Panchayat, consider the following statements:
 1. Not less than $\frac{1}{3}$ rd of the total seats should be reserved for women in all the tiers of Panchayat
 2. Among the Chairpersons, the amendment states that $\frac{1}{3}$ rd seats should be reserved for women
 3. Not less than $\frac{1}{3}$ rd posts in different Standing Committees of the Panchayat should be reserved for women

Which of the above statements are correct?

- a) 1 and 3 only
 - b) 2 and 3 only
 - c) 1 and 2 only
 - d) 1,2 and 3
7. The term air quality index (AQI) is generally used for ascertaining the level of air pollution, and it is based on measurement of particulate matter (PM_{2.5} and PM₁₀), ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide emissions. What is the upper threshold value of AQI above which air quality is considered as unhealthy?
- a) The threshold value of AQI is 250
 - b) The threshold value of AQI is 100
 - c) The threshold value of AQI is 150
 - d) The threshold value of AQI is 50
8. Select the correct pair
- 1. VPN : Virtual Private Network
 - 2. WEP : Wireless Equivalent Protocol
 - 3. WPA : WI-FI Protected Access
 - 4. Wi-Fi : Wireless Fidelity
- a) 1, 3 and 4
 - b) 2, 3 and 4
 - c) 2 and 3
 - d) 1 and 4
9. Which of the following is not an aerospace material?
- a) Plastic
 - b) Silica
 - c) Aluminium alloys
 - d) Polymers
10. Which agreement was signed between India and Pakistan after Indo-Pakistani war of 1965?
- a) Tashkent Agreement
 - b) Bangkok Agreement
 - c) Panchsheel Agreement
 - d) None of the above
11. Consider the following statements regarding FIFA world cup:
- 1. The 2022 FIFA World Cup, is the 22nd FIFA World Cup.
 - 2. The 2022 FIFA World Cup is taking place in Qatar and is the second World Cup to be held in the Arab world.
 - 3. There will be 32 participating teams in 2022 FIFA World Cup
 - 4. The opening match was between Qatar and Ecuador at Al Bayt Stadium, Al Khor and Qatar lost the match 2–0.

Which of the above statements is correct

- a) 1, 2 and 3 only
 - b) 2, 3 and 4 only
 - c) 1, 3 and 4 only
 - d) 1, 2, 3 and 4
12. Vikram-S, India's first privately developed rocket, which successfully lifted off from the spaceport in Sriharikota recently has been developed by
- a) Hindustan Aeronautics Limited
 - b) Boeing India Private Limited
 - c) Skyroot Aerospace Private Limited
 - d) Lockheed Martin India Private Limited
13. Which of the following is a gateway in Dravidian temples?
- a) Gopuram
 - b) Vimana
 - c) Antarala
 - d) Kund
14. Who designed the dome of Florence Cathedral?
- a) Michelangelo
 - b) Antonio da Sangallo
 - c) Filippo Brunelleschi
 - d) F. L. Wright
15. What is the height of Qutab Minar?
- a) 62 m
 - b) 92 m
 - c) 73 m
 - d) 83 m
16. Adhai din ka Jhompra Mosque is located in which Indian city?
- a) Jaipur
 - b) Ajmer
 - c) Delhi
 - d) Fatehpur Sikri
17. Among the following monuments of ancient Greece, the only Octastyle Peripteral Temple with eight towering Doric columns lining both east and west facades is
- a) Temple of Horus
 - b) Temple of Athena
 - c) Temple of Apollo
 - d) The Parthenon

18. The Golden Ratio refers to

- a) $1:\sqrt{2}$
- b) 1:1.618
- c) 1:1
- d) 16:9

19. Match the iconic architectural examples in Group-I with their predominant structural systems in Group-II

Group-I	Group-II
A. S. Maria del Fiore Cathedral, Florence	1. Shell
B. Notre Dame Cathedral, Paris	2. Suspended roof
C. Olympic Arena, Tokyo	3. Double-shell dome
D. Bahá'i Temple, Delhi	4. Flying buttress

Choose the correct answer

- a) A-1, B-2, C-4, D-3
 - b) A-4, B-1, C-2, D-3
 - c) A-3, B-4, C-2, D-1
 - d) A-4, B-3, C-2, D-1
20. 'Palazzo Farnese', the largest palace of the High Renaissance is located in which city?
- a) Rome
 - b) Florence
 - c) Milano
 - d) Prato
21. The Pagodas at Mahabalipuram had been constructed by which rulers?
- a) Cholas
 - b) Pallavas
 - c) Pandyas
 - d) Cheras
22. Typical features of Buddhist architecture are
- a) Mandapa, Chattri, Amalaka, Torana
 - b) Stambha, Torana, Vimana, Harmika
 - c) Vedika, Chattri, Torana, Harmika
 - d) Vedika, Stupa, Chaitya, Vimana
23. A Rock-cut style of architecture is represented by
- a) Shyama Rama temple, Bishnupur
 - b) Kailasa Temple, Ellora
 - c) Kandariya Mahadeva Temple, Khajuraho
 - d) Sanchi Stupa

24. Which of the following is an Element of design?
- a) Colour
 - b) Balance
 - c) Rhythm
 - d) Unity
25. Which command in AutoCAD changes the size and spacing of the dashes in a *Dashed Line*?
- a) LT Scale
 - b) Thickness
 - c) L Type
 - d) Elev
26. Which command in AutoCAD restores an erased drawing?
- a) CUI
 - b) UCS
 - c) OOPS
 - d) RAY
27. In a bird's eye perspective view of a cuboid, the maximum number of vanishing points is
- a) 2
 - b) 3
 - c) 6
 - d) 1
28. Which of the following does not come under the principles of architectural composition?
- a) Rhythm and Balance
 - b) Scale and Proportion
 - c) Pattern and Colour
 - d) Unity and harmony
29. In 3DS Max, smooth 3D surfaces, by blending a series of selected shape curves, can be created by
- a) Sweeping
 - b) Lofting
 - c) Filleting
 - d) Extruding
30. Which layer in AutoCAD is not printed?
- a) Layer 0
 - b) Def points
 - c) dim
 - d) Layer 1

31. The site plan to be sent along with the application for permit for plots up to 500 sq m in size shall be drawn on a scale of
- 1:100
 - 1:500
 - 1:1000
 - 1:50,000
32. A plot measuring 50 m x 100 m is allowed 40 % ground coverage and permissible FAR of 2, then the maximum number of floors that can be built are
- 4
 - 5
 - 6
 - 7
33. The full form of ECBC stands for
- Electrical Conduit in Building Construction
 - Energy Conservation Building Code
 - Electrical Credit in Building Code
 - Energy Credit in Building Construction
34. As per CPWD Guidelines and Space Standards for 'Barrier Free Built Environment' the minimum turning radius for a wheelchair is
- 900 mm
 - 1200 mm
 - 1500 mm
 - 1800 mm
35. Match the terms in Group-I with the related terms in Group-II

Group-I	Group-II
A. Acquisition	1. Ownership
B. Planning permission	2. Construction
C. Building plan sanction	3. Land
D. Mutation	4. Land use

Choose the correct Answer

- A-4, B-3, C-1, D-2
 - A-3, B-4, C-2, D-1
 - A-3 B-4, C-2, D-1
 - A-1, B-3, C-2, D-4
36. The winner of 2022 Pritker prize is
- Arata Isozaki
 - Francis Kere
 - B. V. Doshi
 - Norman Foster

37. Complementary colours in a Munsell pigment colour wheel refers to
- Colours in alternate positions
 - Colours opposite to one another
 - Colours adjacent to each other
 - A pair of secondary colours
38. Which of the following options represents the elements of architecture?
- Point
 - Line
 - Plane
 - All of the above
39. If a brick is cut in such a way that the width at one end becomes half that of full brick, while the width at the other end equals the full width, what is it called?
- Queen Closer
 - Half Bat
 - Three quarter Bat
 - King Closer
40. What is a groove provided on the underside of sill, cornice or coping for rainwater protection called?
- Weathering
 - Grooving
 - Throating
 - Corbelling
41. What is the horizontal distance between the face of the first and last riser called?
- Stairwell
 - Going
 - Skirting
 - Railing
42. How many links are there in a Revenue chain (used for surveying)?
- 10
 - 16
 - 100
 - 150
43. What is calculated using the formula: $\frac{\text{Original cost of the asset} - \text{Scrap Value}}{\text{life in years}}$?
- Sinking fund
 - Annual Depreciation
 - Capitalized Value
 - Standard rent

44. What are the mix proportions of M15 concrete?
- a) 1:2:4
 - b) 1:1.5:3
 - c) 1:3:6
 - d) 1:1:3
45. Which of the following processes is not used for corrosion resistance of cast iron?
- a) Painting
 - b) Epoxy coating
 - c) Quenching
 - d) Galvanizing
46. The main parts of Total Station are
- a) Theodolite, tripod, data collector
 - b) EDM, theodolite, GPS
 - c) EDM, theodolite, data collector
 - d) EDM, dumpy level, data collector
47. The term 'Toothing' is a construction technique used in
- a) Wood construction
 - b) Reinforces Cement concrete construction
 - c) Brick Masonry
 - d) Steel Construction
48. If Beam : Column :: Transom: X, which of the following options can replace 'X'?
- a) Ceiling
 - b) Sill
 - c) Mullion
 - d) Balustrade
49. The correct sequence of stages during firing/ burning of bricks is
- a) Cooling- Oxidation – Vitrification – Dehydration
 - b) Dehydration – Oxidation- Vitrification- Cooling
 - c) Oxidation – Dehydration- Cooling – Vitrification
 - d) Vitrification –Dehydration- Oxidation – Cooling
50. On a floor plan the dashed line that appears approximately 24" outside the exterior wall represents
- a) Side walk
 - b) Roof overhang
 - c) Plumbing drain lines
 - d) None of the above
51. The term 'Cold Joint' refers to the
- a) expansion joint in large span concrete members
 - b) Interface between an already setting concrete and a fresh batch of concrete
 - c) Structural crack arrested by embedding metal rods
 - d) Joining of two similar metals in vacuum

52. Good quality cement contains higher percentage of
- Tri-calcium silicate
 - Di-calcium silicate
 - Tri-calcium aluminate
 - Tetra calcium alumino ferrite
53. 'SWOT' analysis is used for examining a situation's inherent
- Strength, Wastefulness, Opportunity and Tactfulness
 - Sanction, Weakness, Ownership and Threat
 - Strength, Weakness, Opportunity and Threat
 - Support, Wastefulness, Ownership and Transparency
54. In case of residential apartments, the effective floor area available for use within an apartment, is known as
- Carpet Area
 - Built-up Area
 - Plinth Area
 - Super Built-up Area
55. GST rate for architectural consultancy fees in India is
- 5%
 - 12%
 - 18%
 - 24%
56. The arch in the buildings in which center of arch lies below the springing line is called
- Semi-circular arch
 - Ogee arch
 - Pointed arch
 - Segmental Arch
57. Which type of steel is used for making of piles or drills?
- Mild carbon steel
 - Dead steel
 - High carbon steel
 - Cast iron steel
58. Overhead Water Tank is provided at which location of the hydraulic zone?
- Lowermost
 - Topmost
 - Middle level
 - All of the above

59. Ultra-Violet disinfection is used at which stage of Sewage Treatment process?
- Primary
 - Secondary
 - Tertiary
 - All of the above
60. As per Energy Conservation Building Code, Solar Water Heating should be designed for at least _____ of design capacity?
- One-fifth
 - One-fourth
 - One-third
 - Half
61. Calculation of quantity of rainwater from rooftop is done using which of the following formula?
- Rooftop area x Quantity of Rainfall x Run-off coefficient
 - Rooftop area x Quantity of Rainfall ÷ Run-off coefficient
 - Rooftop area ÷ Quantity of Rainfall x Run-off coefficient
 - Rooftop area ÷ Quantity of Rainfall x 100
62. A Fluid-driven Piston is mounted in which type of vertical transportation system?
- Escalator
 - Travelator
 - Hydraulic Lift
 - None of the above
63. What does RTT in elevator design stand for?
- Recurrent Travel Time
 - Repeated Travel Time
 - Round Trip Time
 - Repeated Trip Time
64. Considering the fire safety of the building, the minimum open space around the building and the turning radius of approach road to building for fire tender is
- Minimum open space = 6 m and turning radius = 7.5 m.
 - Minimum open space = 9 m and turning radius = 9 m.
 - Minimum open space = 4.5 m and turning radius = 9 m.
 - Minimum open space = 6 m and turning radius = 9 m.
65. The Energy Performance Index (EPI) of the buildings is
- Annual energy consumption in kWh / Total built up area (in sq m)
 - Total built up area (in sq m) / Annual energy consumption in kWh
 - Monthly energy consumption in kWh / Total built up area (in sq m)
 - Daily energy consumption in kWh / Total built up area (in sq m)

66. Which one of the following is not a sewage treatment process?

- a) Duckweed pond system
- b) Eutrophication
- c) Activated Sludge Process
- d) Water Stabilization Pond System

67. Associate the fire safety requirements for high-rise buildings in Group-I with corresponding standards of the NBC-2016 in Group-II

Group-I	Group-II
A. Minimum Refuge area	1. 12.5 sqm/person
B. Maximum Travel distance	2. 2.0 m
C. Maximum Occupant load	3. 0.3 sqm/person
D. Minimum Stair case width	4. 30.0 m

Choose the correct answer

- a) A-4, B-1, C-3, D-2
- b) A-1, B-2, C-4, D-4
- c) A-3, B- 4, C-1, D-2
- d) A-4, B-2, C-1, D-3

68. The unit of 'Thermal Conductivity' of a material is

- a) W/(m-K)
- b) W/(m² K)
- c) m K/W
- d) m² K/W

69. Solid waste disposal method in which solid organic wastes are subject to combustion is known as

- a) Incineration
- b) Composting
- c) Bio-methanation
- d) Land fill

70. A 'Vegetated Swale' is provided to

- a) Phytoremediation
- b) Slow, filter and infiltrate storm water runoff
- c) Facilitate speedy surface runoff in water logged areas
- d) Used for irrigation

71. Which of the following gives the highest sound absorption in a room?

- a) Rigid wall
- b) Rough ceiling
- c) Soft curtain
- d) Open window

72. Room air conditioners and packaged units are examples of
- a) Direct expansion systems
 - b) Indirect expansion systems
 - c) Chilled water systems
 - d) Indirect contraction systems
73. In the two-pipe system for the drainage of buildings, the discharge from the waste pipe is disconnected from the drain by using _____
- a) Gully trap
 - b) Silt trap
 - c) Floor trap
 - d) Grease trap
74. Commonly used coagulant, is
- a) Chlorine
 - b) Alum
 - c) Lime
 - d) Bleaching powder
75. A geologic formation which contains water and transmits it from one point to another in quantities sufficient to permit economic development is called
- a) Aquifer
 - b) Alluvial Fans
 - c) Aquiclude
 - d) Albedo
76. What is the scientific name equivalent to thermal mass?
- a) Thermal capacitance
 - b) Thermal conductance
 - c) Thermal conductivity
 - d) Thermal energy
77. What is the ratio of Tensile or Compressive stress to its corresponding Strain called?
- a) Young's Modulus
 - b) Bulk Modulus
 - c) Shear Modulus
 - d) Lateral Modulus
78. Ponding, Sprinkling, Fogging, Wet covering are techniques for _____.
- a) Compaction
 - b) Mixing
 - c) Curing
 - d) Batching

79. Which structural member comprises of small wedge-shaped units?
- a) Arch
 - b) Beam
 - c) Column
 - d) Flooring
80. Purlins are placed in which direction in a Trussed Roof?
- a) In the direction of Ridge
 - b) Perpendicular to the Ridge
 - c) Inclined to the Ridge
 - d) None of the above
81. The spherical surface of geodesic dome comprises of
- a) Isosceles triangle of uniform size
 - b) Equilateral triangles of uniform size
 - c) Isosceles triangle of various sizes
 - d) Equilateral triangles of various sizes
82. The three moments equation is applicable only when
- a) There is no settlement of supports
 - b) There is no discontinuity such as hinges within the span
 - c) The beam is prismatic
 - d) The spans are equal
83. In a flat slab, the load is transferred through
- a) Beam action
 - b) Membrane action
 - c) Plate action
 - d) Vector action
84. The term 'Cover block' is used as a building construction component in
- a) Brick wall
 - b) Curtain wall
 - c) Steel truss
 - d) RC beam
85. For loose soil, the formula used to find the minimum depth of foundation is
- a) Rankine's formula
 - b) Hiley formula
 - c) Bernoulli's formula
 - d) Newtonian formula
86. A 'Cadastral map' shows the
- a) Boundaries of fields, plots, houses and other properties.
 - b) Contours, rivers, forests, settlements, etc.
 - c) Only administrative boundaries of village, Municipality, Tehsil, District etc.
 - d) None of the above

87. What is the wavelength of the visible part of Sunlight?
- a) 290-380 nm
 - b) 380-700 nm
 - c) 700-2300 nm
 - d) > 2300 nm
88. Which Climate Zone is the Coldest?
- a) Temperate
 - b) Polar
 - c) Hot-Dry
 - d) Tropical
89. Which diagram is used to understand the predominant direction of Wind in a region?
- a) Wind Shadow
 - b) Wind Chart
 - c) Funnel Graph
 - d) Wind Rose
90. The ratio of Indoor Illumination to Outdoor Illumination expressed in percentage is called _____.
- a) Daylight Factor
 - b) Glare Factor
 - c) Lux Factor
 - d) Reflection Factor
91. What does VSA in design of a shading device stand for?
- a) Variable Shadow Angle
 - b) Vertical Shadow Angle
 - c) Variable Southern Angle
 - d) Vertical Southern Angle
92. What does PEDDA stand for?
- a) Passive Energy Design Analysis
 - b) Passive Energy Development Agency
 - c) Punjab Energy Development Agency
 - d) Punjab Energy Design Agency
93. The concentric circles in a solar chart represent
- a) Azimuth angle
 - b) Altitude angle
 - c) Horizontal shadow angle
 - d) Vertical shadow angle
94. To avoid the toxic and undesirable smell and gases from industrial zone, on which part of the city, industries shall be provided ?
- a) Northern side
 - b) Windward side
 - c) Southern side
 - d) Leeward side

95. The abrupt change or junction between two ecological zones is termed as
- a) Ecological niche
 - b) Ecosystem
 - c) Ecotype
 - d) Ecotone
96. Which characteristics dominated the town planning of Medieval European towns?
- a) Acropolis and Agora
 - b) Forum and Radial Symmetry
 - c) Castles and Meandering Streets
 - d) Grid Iron Street Pattern
97. Who is considered as the “Father of Modern Town Planning”?
- a) Le Corbusier
 - b) Patrick Geddes
 - c) Ebenezer Howard
 - d) Clarence Perry
98. Who gave the concept of “City of Tomorrow”?
- a) Le Corbusier
 - b) F. L. Wright
 - c) Clarence Perry
 - d) Ebenezer Howard
99. In which year was NITI Aayog constituted after replacing Planning Commission?
- a) 2005
 - b) 2011
 - c) 2015
 - d) 2020
100. What does CTBUH stand for?
- a) Council on Travel Behavior and Urban Housing
 - b) Council on Tall Buildings and Urban Habitat
 - c) Centre of Tall Buildings and Urban Housing
 - d) Committee on Travel Behavior and Urban Habitat
101. Which one of the following is Not a land use zone?
- a) Residential Zone
 - b) Commercial Zone
 - c) Industrial Zone
 - d) Heritage Zone
102. The concept ‘Sight Distance’ is considered in the design of
- a) Road intersection
 - b) Fenestration
 - c) Open kitchen
 - d) Auditorium

103. Which of the following is a solar dish collector device that concentrates the sunlight to reach high temperature?
- a) Parabolic mirror
 - b) Parabolic lens
 - c) Concave lens
 - d) Convex mirror
104. What is a semi-covered pavilion in a garden known as?
- a) Pergola
 - b) Topiary
 - c) Gazebo
 - d) Silhouette
105. What is a stepped water feature known as?
- a) Spout
 - b) Waterfall
 - c) Pond
 - d) Cascade
106. Landscaping using minimum use of water is called _____.
- a) Hardscaping
 - b) Xeriscaping
 - c) Origami
 - d) Bonsai
107. The Japanese art of growing miniature trees is known as _____.
- a) Kasan
 - b) Kirigami
 - c) Bonsai
 - d) Origami
108. What kind of paving material should be used for facilitating ground water recharge?
- a) Concrete solid pavers
 - b) Perforated Pavers
 - c) Ceramic Tiles
 - d) Granite stone
109. Which plant help in improving indoor air quality?
- a) Plumeria Rubra
 - b) Casia Fistula
 - c) Bisantha
 - d) Areca Palm
110. The concept of 'Dry Garden' is associated with
- a) Japanese Garden
 - b) Chinese Garden
 - c) Mughal Garden
 - d) Egyptian Garden

111. The term 'Dripline' in landscaping is
- Tree rings
 - Vegetated drains
 - Outer circumference of canopy of tree
 - No irrigation
112. In landscaping, covering of soil with wooden chips refers to the term
- Mulching
 - Pruning
 - Xeriscaping
 - Phytoremediation
113. A worker has only ₹ 1 and ₹ 2 coins with her. If the total number of coins she has is 50 and the amount of money with her is ₹ 75, then the number of ₹ 1 and ₹ 2 coins are, respectively
- 15 and 35
 - 35 and 15
 - 30 and 20
 - 25 and 25
114. Joint family consists of seven members A, B, C, D, E, F and G, with three females. G is a widow and sister-in-law of D's father F. B and D are siblings and A is the daughter of B. C is the cousin of B. Who is E?
- Wife of F
 - Grandmother of A
 - Aunt of C
- Select the correct answer using the code given below.
- 1 and 2 only
 - 2 and 3 only
 - 1 and 3 only
 - 1, 2 and 3
115. A clock is started at noon. By 20 minutes past 6, the hour hand has turned through
- 170°
 - 182°
 - 185°
 - 190°
116. A train is running at the rate of 40 kmph. A man is also going in the same direction parallel to the train at the speed of 25 kmph. If the train crosses the man in 48 seconds, the length of the train is _____ metres.
- 100
 - 150
 - 200
 - None of these

117. The sum of two numbers is 30 and their product is 216. Then, one of the numbers must be
- a) 16
 - b) 22
 - c) 12
 - d) 24
118. There are two candidates Bhiku and Mhatre for an election. Bhiku gets 65 % of the total valid votes. If the total votes were 6,000, what is the number of valid votes that the other candidate Mhatre gets, if 25 % of the total votes were declared invalid?
- a) 1575
 - b) 1625
 - c) 1675
 - d) 1525
119. In a certain code language 'te da ka ni' means 'intelligence is in genes', 'se po lo ni' means, 'genes are not responsible' and 'ba da fu te' means 'intelligence is through experience'. What does 'ka' stand for in that code language?
- a) genes
 - b) through
 - c) intelligence
 - d) in
120. P, Q, R, S and T are sitting in a straight-line facing North. P sits next to S but not to T. Q is sitting next to R who sits on the extreme left corner. Who sits to the left of S if T does not sit next to Q?
- a) P
 - b) Q
 - c) R
 - d) T

Space for Rough work

PUNJAB PUBLIC SERVICE COMMISSION

Objective Type Test (November-2022) for Recruitment to the post of Building Inspector in the Department of Local Government, Government of Punjab

READ INSTRUCTIONS BEFORE FILLING ANY DETAILS OR ATTEMPTING TO ANSWER THE QUESTIONS.

Total Questions: 120
Time Allowed: 2 Hours

Candidate's Name _____

Father's Name _____

Date of Birth
DD MM YYYY

OMR Response Sheet No. _____

Roll No. _____

Candidate's Signature (Please sign in the box)

Question
Booklet Set

D

Booklet Series No.

INSTRUCTIONS

1. The candidate shall NOT open this booklet till the time told to do so by the Invigilation Staff. However, in the meantime, the candidate can read these instructions carefully and subsequently fill the appropriate columns given above in CAPITAL letters. The candidate may also fill the relevant boxes out of 1 to 9 of the Optical Mark Reader (OMR) response sheet, supplied separately.
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4. Each candidate is required to attempt 120 questions in 120 minutes, except for orthopedically/visually impaired candidates, who would be given 40 extra minutes, for marking correct responses on the OMR sheet.
5. The question paper booklet has 20 pages.
6. The candidates, when allowed to open the question paper booklet, must first check the entire booklet to confirm that the booklet has complete number of pages, the pages printed correctly and there are no blank pages. In case there is any such error in the question paper booklet then the candidate should IMMEDIATELY bring this fact to the notice of the Invigilation Staff and obtain a new booklet of the same series as given earlier.
7. The serial number of the new Question booklet if issued for some reason should be entered in the relevant column of the OMR. The Invigilation Staff must make necessary corrections in their record regarding the change in the serial no. of Question booklet.
8. The paper consists of total 480 Marks. Each question shall carry 4 marks. There are four options for each question and the candidate has to mark the MOST APPROPRIATE answer on the OMR response sheet.
9. There is negative marking (1 mark for each question) for answers wrongly answered by the candidate.
10. Use of Electronic/Manual Calculator is prohibited.
11. The candidate MUST READ INSTRUCTIONS BEHIND THE OMR SHEET before answering the questions and check that two carbon copies attached to the OMR sheet are intact.

1. A clock is started at noon. By 20 minutes past 6, the hour hand has turned through
 - a) 170
 - b) 182
 - c) 185
 - d) 190
2. A train is running at the rate of 40 kmph. A man is also going in the same direction parallel to the train at the speed of 25 kmph. If the train crosses the man in 48 seconds, the length of the train is _____ metres.
 - a) 100
 - b) 150
 - c) 200
 - d) None of these
3. The sum of two numbers is 30 and their product is 216. Then, one of the numbers must be
 - a) 16
 - b) 22
 - c) 12
 - d) 24
4. There are two candidates Bhiku and Mhatre for an election. Bhiku gets 65 % of the total valid votes. If the total votes were 6,000, what is the number of valid votes that the other candidate Mhatre gets, if 25 % of the total votes were declared invalid?
 - a) 1575
 - b) 1625
 - c) 1675
 - d) 1525
5. In a certain code language 'te da ka ni' means 'intelligence is in genes', 'se po lo ni' means, 'genes are not responsible' and 'ba da fu te' means 'intelligence is through experience'. What does 'ka' stand for in that code language?
 - a) genes
 - b) through
 - c) intelligence
 - d) in
6. P, Q, R, S and T are sitting in a straight-line facing North. P sits next to S but not to T. Q is sitting next to R who sits on the extreme left corner. Who sits to the left of S if T does not sit next to Q?
 - a) P
 - b) Q
 - c) R
 - d) T

7. If two dice are thrown, what is the probability that at least one of them shows a number greater than 3?
- 0.75
 - 0.80
 - 0.65
 - 0.85
8. A cattle trader sells two cows at the same price. He gains 10% in one deal and loses 10% in the other. What will be his final gain / loss after selling two cows?
- Loss by 1%
 - Gain by 1%
 - Loss by 2%
 - Neither gains nor loses
9. Rajatarangini is a Dynastic chronicle of the rulers of Kashmir which was written by
- Bilhana
 - Banabhatta
 - Kalhana
 - Vakpati
10. The famous battle of Saragarhi was fought in
- 1895
 - 1899
 - 1897
 - 1896
11. Consider the following statement :
- The people in Punjab sing :”Sundar Mundariye ho. Tera Kaun Vichara ho. Dulla Bhatti walla ho” during lohri.
 - Dulla Bhatti had raised a rebellion against the Mughals.
- Which of the above statement is/are true ?
- Only 1
 - Only 2
 - Both 1 and 2
 - Neither 1 nor 2
12. In regard to the reservation of women in the Panchayat, consider the following statements:
- Not less than $\frac{1}{3}$ rd of the total seats should be reserved for women in all the tiers of Panchayat
 - Among the Chairpersons, the amendment states that $\frac{1}{3}$ rd seats should be reserved for women
 - Not less than $\frac{1}{3}$ rd posts in different Standing Committees of the Panchayat should be reserved for women

Which of the above statements are correct?

- a) 1 and 3 only
- b) 2 and 3 only
- c) 1 and 2 only
- d) 1,2 and 3

13. The term air quality index (AQI) is generally used for ascertaining the level of air pollution, and it is based on measurement of particulate matter (PM_{2.5} and PM₁₀), ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide emissions. What is the upper threshold value of AQI above which air quality is considered as unhealthy?

- a) The threshold value of AQI is 250
- b) The threshold value of AQI is 100
- c) The threshold value of AQI is 150
- d) The threshold value of AQI is 50

14. Select the correct pair

- 1. VPN : Virtual Private Network
- 2. WEP : Wireless Equivalent Protocol
- 3. WPA : WI-FI Protected Access
- 4. Wi-Fi : Wireless Fidelity

- a) 1, 3 and 4
- b) 2, 3 and 4
- c) 2 and 3
- d) 1 and 4

15. Which of the following is not an aerospace material?

- a) Plastic
- b) Silica
- c) Aluminium alloys
- d) Polymers

16. Which agreement was signed between India and Pakistan after Indo-Pakistani war of 1965?

- a) Tashkent Agreement
- b) Bangkok Agreement
- c) Panchsheel Agreement
- d) None of the above

17. Consider the following statements regarding FIFA world cup:

- 1. The 2022 FIFA World Cup, is the 22nd FIFA World Cup.
- 2. The 2022 FIFA World Cup is taking place in Qatar and is the second World Cup to be held in the Arab world.
- 3. There will be 32 participating teams in 2022 FIFA World Cup
- 4. The opening match was between Qatar and Ecuador at Al Bayt Stadium, Al Khor and Qatar lost the match 2–0.

Which of the above statements is correct

- a) 1, 2 and 3 only
 - b) 2, 3 and 4 only
 - c) 1, 3 and 4 only
 - d) 1, 2, 3 and 4
18. Vikram-S, India's first privately developed rocket, which successfully lifted off from the spaceport in Sriharikota recently has been developed by
- a) Hindustan Aeronautics Limited
 - b) Boeing India Private Limited
 - c) Skyroot Aerospace Private Limited
 - d) Lockheed Martin India Private Limited
19. Which of the following is a gateway in Dravidian temples?
- a) Gopuram
 - b) Vimana
 - c) Antarala
 - d) Kund
20. Who designed the dome of Florence Cathedral?
- a) Michelangelo
 - b) Antonio da Sangallo
 - c) Filippo Brunelleschi
 - d) F. L. Wright
21. What is the height of Qutab Minar?
- a) 62 m
 - b) 92 m
 - c) 73 m
 - d) 83 m
22. Adhai din ka Jhompra Mosque is located in which Indian city?
- a) Jaipur
 - b) Ajmer
 - c) Delhi
 - d) Fatehpur Sikri
23. Among the following monuments of ancient Greece, the only Octastyle Peripteral Temple with eight towering Doric columns lining both east and west facades is
- a) Temple of Horus
 - b) Temple of Athena
 - c) Temple of Apollo
 - d) The Parthenon

24. The Golden Ratio refers to

- a) $1:\sqrt{2}$
- b) 1:1.618
- c) 1:1
- d) 16:9

25. Match the iconic architectural examples in Group-I with their predominant structural systems in Group-II

Group-I	Group-II
A. S. Maria del Fiore Cathedral, Florence	1. Shell
B. Notre Dame Cathedral, Paris	2. Suspended roof
C. Olympic Arena, Tokyo	3. Double-shell dome
D. Bahá'i Temple, Delhi	4. Flying buttress

Choose the correct answer

- a) A-1, B-2, C-4, D-3
- b) A-4, B-1, C-2, D-3
- c) A-3, B-4, C-2, D-1
- d) A-4, B-3, C-2, D-1

26. 'Palazzo Farnese', the largest palace of the High Renaissance is located in which city?

- a) Rome
- b) Florence
- c) Milano
- d) Prato

27. The Pagodas at Mahabalipuram had been constructed by which rulers?

- a) Cholas
- b) Pallavas
- c) Pandyas
- d) Cheras

28. Typical features of Buddhist architecture are

- a) Mandapa, Chattri, Amalaka, Torana
- b) Stambha, Torana, Vimana, Harmika
- c) Vedika, Chattri, Torana, Harmika
- d) Vedika, Stupa, Chaitya, Vimana

29. A Rock-cut style of architecture is represented by

- a) Shyama Rama temple, Bishnupur
- b) Kailasa Temple, Ellora
- c) Kandariya Mahadeva Temple, Khajuraho
- d) Sanchi Stupa

30. Which of the following is an Element of design?
- a) Colour
 - b) Balance
 - c) Rhythm
 - d) Unity
31. Which command in AutoCAD changes the size and spacing of the dashes in a *Dashed Line*?
- a) LT Scale
 - b) Thickness
 - c) L Type
 - d) Elev
32. Which command in AutoCAD restores an erased drawing?
- a) CUI
 - b) UCS
 - c) OOPS
 - d) RAY
33. In a bird's eye perspective view of a cuboid, the maximum number of vanishing points is
- a) 2
 - b) 3
 - c) 6
 - d) 1
34. Which of the following does not come under the principles of architectural composition?
- a) Rhythm and Balance
 - b) Scale and Proportion
 - c) Pattern and Colour
 - d) Unity and harmony
35. In 3DS Max, smooth 3D surfaces, by blending a series of selected shape curves, can be created by
- a) Sweeping
 - b) Lofting
 - c) Filletting
 - d) Extruding
36. Which layer in AutoCAD is not printed?
- a) Layer 0
 - b) Def points
 - c) dim
 - d) Layer 1

37. The site plan to be sent along with the application for permit for plots up to 500 sq m in size shall be drawn on a scale of
- 1:100
 - 1:500
 - 1:1000
 - 1:50,000
38. A plot measuring 50 m x 100 m is allowed 40 % ground coverage and permissible FAR of 2, then the maximum number of floors that can be built are
- 4
 - 5
 - 6
 - 7
39. The full form of ECBC stands for
- Electrical Conduit in Building Construction
 - Energy Conservation Building Code
 - Electrical Credit in Building Code
 - Energy Credit in Building Construction
40. As per CPWD Guidelines and Space Standards for 'Barrier Free Built Environment' the minimum turning radius for a wheelchair is
- 900 mm
 - 1200 mm
 - 1500 mm
 - 1800 mm
41. Match the terms in Group-I with the related terms in Group-II

Group-I	Group-II
A. Acquisition	1. Ownership
B. Planning permission	2. Construction
C. Building plan sanction	3. Land
D. Mutation	4. Land use

Choose the correct Answer

- A-4, B-3, C-1, D-2
 - A-3, B-4, C-2, D-1
 - A-3 B-4, C-2, D-1
 - A-1, B-3, C-2, D-4
42. The winner of 2022 Pritker prize is
- Arata Isozaki
 - Francis Kere
 - B. V. Doshi
 - Norman Foster

43. Complementary colours in a Munsell pigment colour wheel refers to
- Colours in alternate positions
 - Colours opposite to one another
 - Colours adjacent to each other
 - A pair of secondary colours
44. Which of the following options represents the elements of architecture?
- Point
 - Line
 - Plane
 - All of the above
45. If a brick is cut in such a way that the width at one end becomes half that of full brick, while the width at the other end equals the full width, what is it called?
- Queen Closer
 - Half Bat
 - Three quarter Bat
 - King Closer
46. What is a groove provided on the underside of sill, cornice or coping for rainwater protection called?
- Weathering
 - Grooving
 - Throating
 - Corbelling
47. What is the horizontal distance between the face of the first and last riser called?
- Stairwell
 - Going
 - Skirting
 - Railing
48. How many links are there in a Revenue chain (used for surveying)?
- 10
 - 16
 - 100
 - 150
49. What is calculated using the formula: $\frac{\text{Original cost of the asset} - \text{Scrap Value}}{\text{life in years}}$?
- Sinking fund
 - Annual Depreciation
 - Capitalized Value
 - Standard rent

50. What are the mix proportions of M15 concrete?
- a) 1:2:4
 - b) 1:1.5:3
 - c) 1:3:6
 - d) 1:1:3
51. Which of the following processes is not used for corrosion resistance of cast iron?
- a) Painting
 - b) Epoxy coating
 - c) Quenching
 - d) Galvanizing
52. The main parts of Total Station are
- a) Theodolite, tripod, data collector
 - b) EDM, theodolite, GPS
 - c) EDM, theodolite, data collector
 - d) EDM, dumpy level, data collector
53. The term 'Toothing' is a construction technique used in
- a) Wood construction
 - b) Reinforces Cement concrete construction
 - c) Brick Masonry
 - d) Steel Construction
54. If Beam : Column :: Transom: X, which of the following options can replace 'X'?
- a) Ceiling
 - b) Sill
 - c) Mullion
 - d) Balustrade
55. The correct sequence of stages during firing/ burning of bricks is
- a) Cooling- Oxidation – Vitrification – Dehydration
 - b) Dehydration – Oxidation- Vitrification- Cooling
 - c) Oxidation – Dehydration- Cooling – Vitrification
 - d) Vitrification –Dehydration- Oxidation – Cooling
56. On a floor plan the dashed line that appears approximately 24" outside the exterior wall represents
- a) Side walk
 - b) Roof overhang
 - c) Plumbing drain lines
 - d) None of the above
57. The term 'Cold Joint' refers to the
- a) expansion joint in large span concrete members
 - b) Interface between an already setting concrete and a fresh batch of concrete
 - c) Structural crack arrested by embedding metal rods
 - d) Joining of two similar metals in vacuum

58. Good quality cement contains higher percentage of
- Tri-calcium silicate
 - Di-calcium silicate
 - Tri-calcium aluminate
 - Tetra calcium alumino ferrite
59. 'SWOT' analysis is used for examining a situation's inherent
- Strength, Wastefulness, Opportunity and Tactfulness
 - Sanction, Weakness, Ownership and Threat
 - Strength, Weakness, Opportunity and Threat
 - Support, Wastefulness, Ownership and Transparency
60. In case of residential apartments, the effective floor area available for use within an apartment, is known as
- Carpet Area
 - Built-up Area
 - Plinth Area
 - Super Built-up Area
61. GST rate for architectural consultancy fees in India is
- 5%
 - 12%
 - 18%
 - 24%
62. The arch in the buildings in which center of arch lies below the springing line is called
- Semi-circular arch
 - Ogee arch
 - Pointed arch
 - Segmental Arch
63. Which type of steel is used for making of piles or drills?
- Mild carbon steel
 - Dead steel
 - High carbon steel
 - Cast iron steel
64. Overhead Water Tank is provided at which location of the hydraulic zone?
- Lowermost
 - Topmost
 - Middle level
 - All of the above

65. Ultra-Violet disinfection is used at which stage of Sewage Treatment process?
- Primary
 - Secondary
 - Tertiary
 - All of the above
66. As per Energy Conservation Building Code, Solar Water Heating should be designed for at least _____ of design capacity?
- One-fifth
 - One-fourth
 - One-third
 - Half
67. Calculation of quantity of rainwater from rooftop is done using which of the following formula?
- Rooftop area x Quantity of Rainfall x Run-off coefficient
 - Rooftop area x Quantity of Rainfall ÷ Run-off coefficient
 - Rooftop area ÷ Quantity of Rainfall x Run-off coefficient
 - Rooftop area ÷ Quantity of Rainfall x 100
68. A Fluid-driven Piston is mounted in which type of vertical transportation system?
- Escalator
 - Travelator
 - Hydraulic Lift
 - None of the above
69. What does RTT in elevator design stand for?
- Recurrent Travel Time
 - Repeated Travel Time
 - Round Trip Time
 - Repeated Trip Time
70. Considering the fire safety of the building, the minimum open space around the building and the turning radius of approach road to building for fire tender is
- Minimum open space = 6 m and turning radius = 7.5 m.
 - Minimum open space = 9 m and turning radius = 9 m.
 - Minimum open space = 4.5 m and turning radius = 9 m.
 - Minimum open space = 6 m and turning radius = 9 m.
71. The Energy Performance Index (EPI) of the buildings is
- Annual energy consumption in kWh / Total built up area (in sq m)
 - Total built up area (in sq m) / Annual energy consumption in kWh
 - Monthly energy consumption in kWh / Total built up area (in sq m)
 - Daily energy consumption in kWh / Total built up area (in sq m)

72. Which one of the following is not a sewage treatment process?

- a) Duckweed pond system
- b) Eutrophication
- c) Activated Sludge Process
- d) Water Stabilization Pond System

73. Associate the fire safety requirements for high-rise buildings in Group-I with corresponding standards of the NBC-2016 in Group-II

Group-I	Group-II
A. Minimum Refuge area	1. 12.5 sqm/person
B. Maximum Travel distance	2. 2.0 m
C. Maximum Occupant load	3. 0.3 sqm/person
D. Minimum Stair case width	4. 30.0 m

Choose the correct answer

- a) A-4, B-1, C-3, D-2
- b) A-1, B-2, C-4, D-4
- c) A-3, B- 4, C-1, D-2
- d) A-4, B-2, C-1, D-3

74. The unit of 'Thermal Conductivity' of a material is

- a) W/(m-K)
- b) W/(m² K)
- c) m K/W
- d) m² K/W

75. Solid waste disposal method in which solid organic wastes are subject to combustion is known as

- a) Incineration
- b) Composting
- c) Bio-methanation
- d) Land fill

76. A 'Vegetated Swale' is provided to

- a) Phytoremediation
- b) Slow, filter and infiltrate storm water runoff
- c) Facilitate speedy surface runoff in water logged areas
- d) Used for irrigation

77. Which of the following gives the highest sound absorption in a room?

- a) Rigid wall
- b) Rough ceiling
- c) Soft curtain
- d) Open window

78. Room air conditioners and packaged units are examples of
- a) Direct expansion systems
 - b) Indirect expansion systems
 - c) Chilled water systems
 - d) Indirect contraction systems
79. In the two-pipe system for the drainage of buildings, the discharge from the waste pipe is disconnected from the drain by using _____
- a) Gully trap
 - b) Silt trap
 - c) Floor trap
 - d) Grease trap
80. Commonly used coagulant, is
- a) Chlorine
 - b) Alum
 - c) Lime
 - d) Bleaching powder
81. A geologic formation which contains water and transmits it from one point to another in quantities sufficient to permit economic development is called
- a) Aquifer
 - b) Alluvial Fans
 - c) Aquiclude
 - d) Albedo
82. What is the scientific name equivalent to thermal mass?
- a) Thermal capacitance
 - b) Thermal conductance
 - c) Thermal conductivity
 - d) Thermal energy
83. What is the ratio of Tensile or Compressive stress to its corresponding Strain called?
- a) Young's Modulus
 - b) Bulk Modulus
 - c) Shear Modulus
 - d) Lateral Modulus
84. Ponding, Sprinkling, Fogging, Wet covering are techniques for _____.
- a) Compaction
 - b) Mixing
 - c) Curing
 - d) Batching

85. Which structural member comprises of small wedge-shaped units?
- a) Arch
 - b) Beam
 - c) Column
 - d) Flooring
86. Purlins are placed in which direction in a Trussed Roof?
- a) In the direction of Ridge
 - b) Perpendicular to the Ridge
 - c) Inclined to the Ridge
 - d) None of the above
87. The spherical surface of geodesic dome comprises of
- a) Isosceles triangle of uniform size
 - b) Equilateral triangles of uniform size
 - c) Isosceles triangle of various sizes
 - d) Equilateral triangles of various sizes
88. The three moments equation is applicable only when
- a) There is no settlement of supports
 - b) There is no discontinuity such as hinges within the span
 - c) The beam is prismatic
 - d) The spans are equal
89. In a flat slab, the load is transferred through
- a) Beam action
 - b) Membrane action
 - c) Plate action
 - d) Vector action
90. The term 'Cover block' is used as a building construction component in
- a) Brick wall
 - b) Curtain wall
 - c) Steel truss
 - d) RC beam
91. For loose soil, the formula used to find the minimum depth of foundation is
- a) Rankine's formula
 - b) Hiley formula
 - c) Bernoulli's formula
 - d) Newtonian formula
92. A 'Cadastral map' shows the
- a) Boundaries of fields, plots, houses and other properties.
 - b) Contours, rivers, forests, settlements, etc.
 - c) Only administrative boundaries of village, Municipality, Tehsil, District etc.
 - d) None of the above

93. What is the wavelength of the visible part of Sunlight?
- a) 290-380 nm
 - b) 380-700 nm
 - c) 700-2300 nm
 - d) > 2300 nm
94. Which Climate Zone is the Coldest?
- a) Temperate
 - b) Polar
 - c) Hot-Dry
 - d) Tropical
95. Which diagram is used to understand the predominant direction of Wind in a region?
- a) Wind Shadow
 - b) Wind Chart
 - c) Funnel Graph
 - d) Wind Rose
96. The ratio of Indoor Illumination to Outdoor Illumination expressed in percentage is called _____.
- a) Daylight Factor
 - b) Glare Factor
 - c) Lux Factor
 - d) Reflection Factor
97. What does VSA in design of a shading device stand for?
- a) Variable Shadow Angle
 - b) Vertical Shadow Angle
 - c) Variable Southern Angle
 - d) Vertical Southern Angle
98. What does PEDDA stand for?
- a) Passive Energy Design Analysis
 - b) Passive Energy Development Agency
 - c) Punjab Energy Development Agency
 - d) Punjab Energy Design Agency
99. The concentric circles in a solar chart represent
- a) Azimuth angle
 - b) Altitude angle
 - c) Horizontal shadow angle
 - d) Vertical shadow angle
100. To avoid the toxic and undesirable smell and gases from industrial zone, on which part of the city, industries shall be provided ?
- a) Northern side
 - b) Windward side
 - c) Southern side
 - d) Leeward side

101. The abrupt change or junction between two ecological zones is termed as
- a) Ecological niche
 - b) Ecosystem
 - c) Ecotype
 - d) Ecotone
102. Which characteristics dominated the town planning of Medieval European towns?
- a) Acropolis and Agora
 - b) Forum and Radial Symmetry
 - c) Castles and Meandering Streets
 - d) Grid Iron Street Pattern
103. Who is considered as the “Father of Modern Town Planning”?
- a) Le Corbusier
 - b) Patrick Geddes
 - c) Ebenezer Howard
 - d) Clarence Perry
104. Who gave the concept of “City of Tomorrow”?
- a) Le Corbusier
 - b) F. L. Wright
 - c) Clarence Perry
 - d) Ebenezer Howard
105. In which year was NITI Aayog constituted after replacing Planning Commission?
- a) 2005
 - b) 2011
 - c) 2015
 - d) 2020
106. What does CTBUH stand for?
- a) Council on Travel Behavior and Urban Housing
 - b) Council on Tall Buildings and Urban Habitat
 - c) Centre of Tall Buildings and Urban Housing
 - d) Committee on Travel Behavior and Urban Habitat
107. Which one of the following is Not a land use zone?
- a) Residential Zone
 - b) Commercial Zone
 - c) Industrial Zone
 - d) Heritage Zone
108. The concept ‘Sight Distance’ is considered in the design of
- a) Road intersection
 - b) Fenestration
 - c) Open kitchen
 - d) Auditorium

109. Which of the following is a solar dish collector device that concentrates the sunlight to reach high temperature?
- a) Parabolic mirror
 - b) Parabolic lens
 - c) Concave lens
 - d) Convex mirror
110. What is a semi-covered pavilion in a garden known as?
- a) Pergola
 - b) Topiary
 - c) Gazebo
 - d) Silhouette
111. What is a stepped water feature known as?
- a) Spout
 - b) Waterfall
 - c) Pond
 - d) Cascade
112. Landscaping using minimum use of water is called _____.
- a) Hardscaping
 - b) Xeriscaping
 - c) Origami
 - d) Bonsai
113. The Japanese art of growing miniature trees is known as _____.
- a) Kasan
 - b) Kirigami
 - c) Bonsai
 - d) Origami
114. What kind of paving material should be used for facilitating ground water recharge?
- a) Concrete solid pavers
 - b) Perforated Pavers
 - c) Ceramic Tiles
 - d) Granite stone
115. Which plant help in improving indoor air quality?
- a) Plumeria Rubra
 - b) Casia Fistula
 - c) Bisantha
 - d) Areca Palm
116. The concept of 'Dry Garden' is associated with
- a) Japanese Garden
 - b) Chinese Garden
 - c) Mughal Garden
 - d) Egyptian Garden

117. The term 'Dripline' in landscaping is
- a) Tree rings
 - b) Vegetated drains
 - c) Outer circumference of canopy of tree
 - d) No irrigation
118. In landscaping, covering of soil with wooden chips refers to the term
- a) Mulching
 - b) Pruning
 - c) Xeriscaping
 - d) Phytoremediation
119. A worker has only ₹ 1 and ₹ 2 coins with her. If the total number of coins she has is 50 and the amount of money with her is ₹ 75, then the number of ₹ 1 and ₹ 2 coins are, respectively
- a) 15 and 35
 - b) 35 and 15
 - c) 30 and 20
 - d) 25 and 25
120. Joint family consists of seven members A, B, C, D, E, F and G, with three females. G is a widow and sister-in-law of D's father F. B and D are siblings and A is the daughter of B. C is the cousin of B. Who is E?
1. Wife of F
 2. Grandmother of A
 3. Aunt of C
- Select the correct answer using the code given below.
- a) 1 and 2 only
 - b) 2 and 3 only
 - c) 1 and 3 only
 - d) 1, 2 and 3

Space for Rough work