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: √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

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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

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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

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21. The full form of ECBC stands for
    a) Electrical Conduit in Building Construction
    b) Energy Conservation Building Code
    c) Electrical Credit in Building Code
    d) 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
    a) 900 mm
    b) 1200 mm
    c) 1500 mm
    d) 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) A-4, B-3, C-1, D-2
    b) A-3, B-4, C-2, D-1
    c) A-3 B-4, C-2, D-1
    d) A-1, B-3, C-2, D-4

24. The winner of 2022 Pritker prize is
    a) Arata Isozaki
    b) Francis Kere
    c) B. V. Doshi
    d) Norman Foster

25. Complementary colours in a Munsell pigment colour wheel refers to
    a) Colours in alternate positions
    b) Colours opposite to one another
    c) Colours adjacent to each other
    d) A pair of secondary colours

26. Which of the following options represents the elements of architecture?
    a) Point
    b) Line
    c) Plane
    d) All of the above

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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?
    a) Queen Closer
    b) Half Bat
    c) Three quarter Bat
    d) King Closer

28. What is a groove provided on the underside of sill, cornice or coping for rainwater protection called?
    a) Weathering
    b) Grooving
    c) Throating
    d) Corbelling

29. What is the horizontal distance between the face of the first and last riser called?
    a) Stairwell
    b) Going
    c) Skirting
    d) Railing

30. How many links are there in a Revenue chain (used for surveying)?
    a) 10
    b) 16
    c) 100
    d) 150

31. What is calculated using the formula: $\frac{\text{(Original cost of the asset – Scrap Value)}}{\text{life in years}}$?
    a) Sinking fund
    b) Annual Depreciation
    c) Capitalized Value
    d) Standard rent

32. 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

33. Which of the following processes is not used for corrosion resistance of cast iron?
    a) Painting
    b) Epoxy coating
    c) Quenching
    d) Galvanizing

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34. 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

35. The term 'Toothing' is a construction technique used in
    a) Wood construction
    b) Reinforces Cement concrete construction
    c) Brick Masonry
    d) Steel Construction

36. If Beam : Column :: Transom: X, which of the following options can replace'X'?
    a) Ceiling
    b) Sill
    c) Mullion
    d) Balustrade

37. 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

38. 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

39. 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 vaccum

40. Good quality cement contains higher percentage of
    a) Tri-calcium silicate
    b) Di-calcium silicate
    c) Tri-calcium aluminate
    d) Tetra calcium alumino ferrite

41. '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

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42. 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

43. GST rate for architectural consultancy fees in India is
    a) 5%
    b) 12%
    c) 18%
    d) 24%

44. 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

45. 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

46. Overhead Water Tank is provided at which location of the hydraulic zone?
    a) Lowermost
    b) Topmost
    c) Middle level
    d) All of the above

47. Ultra-Violet disinfection is used at which stage of Sewage Treatment process?
    a) Primary
    b) Secondary
    c) Tertiary
    d) All of the above

48. 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

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49. 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

50. 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

51. What does RTT in elevator design stand for?
    a) Recurrent Travel Time
    b) Repeated Travel Time
    c) Round Trip Time
    d) 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
    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.

53. 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)

54. 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

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

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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/(m^2 K)
c) m K/W
d) m^2 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

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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) Alluvival 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

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69. 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

70. 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

71. In a flat slab, the load is transferred through
    a) Beam action
    b) Membrane action
    c) Plate action
    d) Vector action

72. The term 'Cover block' is used as a building construction component in
    a) Brick wall
    b) Curtain wall
    c) Steel truss
    d) RC beam

73. 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

74. 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

75. 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

76. Which Climate Zone is the Coldest?
    a) Temperate
    b) Polar
    c) Hot-Dry
    d) Tropical

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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

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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

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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

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99. The term 'Dripline' in landscaping is
    a) Tree rings
    b) Vegetated drains
    c) Outer circumference of canopy of tree
    d) No irrigation

100. In landscaping, covering of soil with wooden chips refers to the term
    a) Mulching
    b) Pruning
    c) Xeriscaping
    d) 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
    a) 15 and 35
    b) 35 and 15
    c) 30 and 20
    d) 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?

    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

103. A clock is started at noon. By 20 minutes past 6, the hour hand has turned through
    a) 170^0
    b) 182^0
    c) 185^0
    d) 190^0

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.
    a) 100
    b) 150
    c) 200
    d) None of these

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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

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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

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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 (PM2.5 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

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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

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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
B
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.

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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 (PM2.5 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

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6. 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

7. Which of the following is a gateway in Dravidian temples?
   a) Gopuram
   b) Vimana
   c) Antarala
   d) Kund

8. Who designed the dome of Florence Cathedral?
   a) Michelangelo
   b) Antonio da Sangallo
   c) Filippo Brunelleschi
   d) F. L. Wright

9. What is the height of Qutab Minar?
   a) 62 m
   b) 92 m
   c) 73 m
   d) 83 m

10. Adhai din ka Jhompra Mosque is located in which Indian city?
   a) Jaipur
   b) Ajmer
   c) Delhi
   d) 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
   a) Temple of Horus
   b) Temple of Athena
   c) Temple of Apollo
   d) The Parthenon

12. The Golden Ratio refers to
   a) 1: √2
   b) 1:1.618
   c) 1:1
   d) 16:9

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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

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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

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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
    a) 4
    b) 5
    c) 6
    d) 7

27. The full form of ECBC stands for
    a) Electrical Conduit in Building Construction
    b) Energy Conservation Building Code
    c) Electrical Credit in Building Code
    d) 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
    a) 900 mm
    b) 1200 mm
    c) 1500 mm
    d) 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) A-4, B-3, C-1, D-2
    b) A-3, B-4, C-2, D-1
    c) A-3 B-4, C-2, D-1
    d) A-1, B-3, C-2, D-4

30. The winner of 2022 Pritker prize is
    a) Arata Isozaki
    b) Francis Kere
    c) B. V. Doshi
    d) Norman Foster

31. Complementary colours in a Munsell pigment colour wheel refers to
    a) Colours in alternate positions
    b) Colours opposite to one another
    c) Colours adjacent to each other
    d) A pair of secondary colours

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32. Which of the following options represents the elements of architecture?
    a) Point
    b) Line
    c) Plane
    d) 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?
    a) Queen Closer
    b) Half Bat
    c) Three quarter Bat
    d) King Closer

34. What is a groove provided on the underside of sill, cornice or coping for rainwater protection called?
    a) Weathering
    b) Grooving
    c) Throating
    d) Corbelling

35. What is the horizontal distance between the face of the first and last riser called?
    a) Stairwell
    b) Going
    c) Skirting
    d) Railing

36. How many links are there in a Revenue chain (used for surveying)?
    a) 10
    b) 16
    c) 100
    d) 150

37. What is calculated using the formula: $\frac{\text{(Original cost of the asset – Scrap Value)}}{\text{life in years}}$?
    a) Sinking fund
    b) Annual Depreciation
    c) Capitalized Value
    d) Standard rent

38. 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

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39. Which of the following processes is not used for corrosion resistance of cast iron?
    a) Painting
    b) Epoxy coating
    c) Quenching
    d) Galvanizing

40. 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

41. The term 'Toothing' is a construction technique used in
    a) Wood construction
    b) Reinforces Cement concrete construction
    c) Brick Masonry
    d) Steel Construction

42. If Beam : Column :: Transom: X, which of the following options can replace'X'?
    a) Ceiling
    b) Sill
    c) Mullion
    d) Balustrade

43. 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

44. 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

45. 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 vaccum

46. Good quality cement contains higher percentage of
    a) Tri-calcium silicate
    b) Di-calcium silicate
    c) Tri-calcium aluminate
    d) Tetra calcium alumino ferrite

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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

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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

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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/(m^2 K)
c) m K/W
d) m^2 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

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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) Alluvival 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

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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

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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 PEDA 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

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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

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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

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104. The concept of 'Dry Garden' is associated with
   a) Japanese Garden
   b) Chinese Garden
   c) Mughal Garden
   d) Egyptian Garden

105. The term 'Dripline' in landscaping is
   a) Tree rings
   b) Vegetated drains
   c) Outer circumference of canopy of tree
   d) No irrigation

106. In landscaping, covering of soil with wooden chips refers to the term
   a) Mulching
   b) Pruning
   c) Xeriscaping
   d) 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
   a) 15 and 35
   b) 35 and 15
   c) 30 and 20
   d) 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?

   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

109. A clock is started at noon. By 20 minutes past 6, the hour hand has turned through
   a) 170^0
   b) 182^0
   c) 185^0
   d) 190^0

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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

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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 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

*****

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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 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

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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 (PM2.5 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.

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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

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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

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18. The Golden Ratio refers to

a) 1: √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

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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

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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
    a) 1:100
    b) 1:500
    c) 1:1000
    d) 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
    a) 4
    b) 5
    c) 6
    d) 7

33. The full form of ECBC stands for
    a) Electrical Conduit in Building Construction
    b) Energy Conservation Building Code
    c) Electrical Credit in Building Code
    d) 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
    a) 900 mm
    b) 1200 mm
    c) 1500 mm
    d) 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) A-4, B-3, C-1, D-2
    b) A-3, B-4, C-2, D-1
    c) A-3 B-4, C-2, D-1
    d) A-1, B-3, C-2, D-4

36. The winner of 2022 Pritker prize is
    a) Arata Isozaki
    b) Francis Kere
    c) B. V. Doshi
    d) Norman Foster

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37. Complementary colours in a Munsell pigment colour wheel refers to
    a) Colours in alternate positions
    b) Colours opposite to one another
    c) Colours adjacent to each other
    d) A pair of secondary colours

38. Which of the following options represents the elements of architecture?
    a) Point
    b) Line
    c) Plane
    d) 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?
    a) Queen Closer
    b) Half Bat
    c) Three quarter Bat
    d) King Closer

40. What is a groove provided on the underside of sill, cornice or coping for rainwater protection called?
    a) Weathering
    b) Grooving
    c) Throating
    d) Corbelling

41. What is the horizontal distance between the face of the first and last riser called?
    a) Stairwell
    b) Going
    c) Skirting
    d) Railing

42. How many links are there in a Revenue chain (used for surveying)?
    a) 10
    b) 16
    c) 100
    d) 150

43. What is calculated using the formula: $\frac{\text{(Original cost of the asset – Scrap Value)}}{\text{life in years}}$?
    a) Sinking fund
    b) Annual Depreciation
    c) Capitalized Value
    d) Standard rent

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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 vaccum

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52. Good quality cement contains higher percentage of
    a) Tri-calcium silicate
    b) Di-calcium silicate
    c) Tri-calcium aluminate
    d) Tetra calcium alumino ferrite

53. '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

54. 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

55. GST rate for architectural consultancy fees in India is
    a) 5%
    b) 12%
    c) 18%
    d) 24%

56. 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

57. 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

58. Overhead Water Tank is provided at which location of the hydraulic zone?
    a) Lowermost
    b) Topmost
    c) Middle level
    d) All of the above

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59. Ultra-Violet disinfection is used at which stage of Sewage Treatment process?
    a) Primary
    b) Secondary
    c) Tertiary
    d) All of the above

60. 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

61. 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

62. 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

63. What does RTT in elevator design stand for?
    a) Recurrent Travel Time
    b) Repeated Travel Time
    c) Round Trip Time
    d) 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
    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.

65. 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)

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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/(m^2 K)
    c) m K/W
    d) m^2 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

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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) Alluvival 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

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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

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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 PEDA 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

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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

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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

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111. The term 'Dripline' in landscaping is
   a) Tree rings
   b) Vegetated drains
   c) Outer circumference of canopy of tree
   d) No irrigation

112. In landscaping, covering of soil with wooden chips refers to the term
   a) Mulching
   b) Pruning
   c) Xeriscaping
   d) 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
   a) 15 and 35
   b) 35 and 15
   c) 30 and 20
   d) 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?

   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

115. A clock is started at noon. By 20 minutes past 6, the hour hand has turned through
   a) 170^0
   b) 182^0
   c) 185^0
   d) 190^0

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.
   a) 100
   b) 150
   c) 200
   d) None of these

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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

*****

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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.
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.

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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

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7. 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

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

9. Rajatarangini is a Dynastic chronicle of the rulers of Kashmir which was written by
   a) Bilhana
   b) Banabhatta
   c) Kalhana
   d) Vakpati

10. The famous battle of Saragarhi was fought in
   a) 1895
   b) 1899
   c) 1897
   d) 1896

11. 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

12. 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

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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 (PM2.5 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.

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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

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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

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24. The Golden Ratio refers to

a) 1: √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

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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) Filleting
    d) Extruding

36. Which layer in AutoCAD is not printed?
    a) Layer 0
    b) Def points
    c) dim
    d) Layer 1

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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
    a) 1:100
    b) 1:500
    c) 1:1000
    d) 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
    a) 4
    b) 5
    c) 6
    d) 7

39. The full form of ECBC stands for
    a) Electrical Conduit in Building Construction
    b) Energy Conservation Building Code
    c) Electrical Credit in Building Code
    d) 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
    a) 900 mm
    b) 1200 mm
    c) 1500 mm
    d) 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) A-4, B-3, C-1, D-2
    b) A-3, B-4, C-2, D-1
    c) A-3 B-4, C-2, D-1
    d) A-1, B-3, C-2, D-4

42. The winner of 2022 Pritker prize is
    a) Arata Isozaki
    b) Francis Kere
    c) B. V. Doshi
    d) Norman Foster

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43. Complementary colours in a Munsell pigment colour wheel refers to
    a) Colours in alternate positions
    b) Colours opposite to one another
    c) Colours adjacent to each other
    d) A pair of secondary colours

44. Which of the following options represents the elements of architecture?
    a) Point
    b) Line
    c) Plane
    d) 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?
    a) Queen Closer
    b) Half Bat
    c) Three quarter Bat
    d) King Closer

46. What is a groove provided on the underside of sill, cornice or coping for rainwater protection called?
    a) Weathering
    b) Grooving
    c) Throating
    d) Corbelling

47. What is the horizontal distance between the face of the first and last riser called?
    a) Stairwell
    b) Going
    c) Skirting
    d) Railing

48. How many links are there in a Revenue chain (used for surveying)?
    a) 10
    b) 16
    c) 100
    d) 150

49. What is calculated using the formula: $\frac{\text{(Original cost of the asset – Scrap Value)}}{\text{life in years}}$?
    a) Sinking fund
    b) Annual Depreciation
    c) Capitalized Value
    d) Standard rent

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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 vaccum

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58. Good quality cement contains higher percentage of
    a) Tri-calcium silicate
    b) Di-calcium silicate
    c) Tri-calcium aluminate
    d) Tetra calcium alumino ferrite

59. '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

60. 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

61. GST rate for architectural consultancy fees in India is
    a) 5%
    b) 12%
    c) 18%
    d) 24%

62. 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

63. 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

64. Overhead Water Tank is provided at which location of the hydraulic zone?
    a) Lowermost
    b) Topmost
    c) Middle level
    d) All of the above

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65. Ultra-Violet disinfection is used at which stage of Sewage Treatment process?
    a) Primary
    b) Secondary
    c) Tertiary
    d) All of the above

66. 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

67. 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

68. 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

69. What does RTT in elevator design stand for?
    a) Recurrent Travel Time
    b) Repeated Travel Time
    c) Round Trip Time
    d) 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
    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.

71. 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)

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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/(m^2 K)
    c) m K/W
    d) m^2 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

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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) Alluvival 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

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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

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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 PEDA 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

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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

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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

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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

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