



# PUNJAB TECHNICAL UNIVERSITY JALANDHAR

## ENTRANCE TEST FOR ENROLLMENT IN Ph.D. PROGRAMME

Max. Marks: 90

Time: 90 Mins.

### Important Instructions

- Fill all the information in various columns, in capital letters, with blue/black ball point pen.
- Use of calculators is not allowed.
- All questions are compulsory. No negative marking for wrong answers.
- Each question has only one right answer.
- Questions attempted with two or more options/answers will not be evaluated.

Stream (Engg./Arch./Pharm./Mgmt./App.Sci./Life Sci.)

ARCHITECTURE

Discipline / Branch

ARCHITECTURE

Father's Name

\_\_\_\_\_

Roll No.

Dated

\_\_\_\_\_

Signature of Candidate

\_\_\_\_\_

Signature of Invigilator

\_\_\_\_\_

1. Indian Institute of Management Bangalore is designed by
  - A. Louis Kahn
  - B. B V Doshi
  - C. A P Kanvinde
  - D. Anant Raje
2. Huge monoliths square on plan and tapering at the summit, erected in the Egyptian Architecture are known as
  - A. Pyramid
  - B. Sarcophagus
  - C. Obelisk
  - D. Pyramidion
3. This refers to the maximum water discharge from plumbing fixtures in terms of fixture units
  - A. Peak load
  - B. Maximum demand
  - C. Pressure
  - D. Pipe size
4. The literal meaning of Feng Shui is
  - A. House and Household
  - B. Wind and water
  - C. Efficiency of Design
  - D. Sensitivity towards Design
5. It is a device designed to prevent backflow of gases into the fixture
  - A. Check Valve
  - B. Soil Pipe
  - C. Grease Pipe
  - D. Trap

6. A general term for any vertical line of soil, waste and vent pipe
  - A. Branch
  - B. Stack
  - C. House Drain
  - D. Vent Pipe
  
7. The open space, where maximum surface material is hard surface or paved is
  - A. Agora
  - B. Garden
  - C. Park
  - D. Plaza
  
8. A turret or part of a building elevated above main building
  - A. Pinnacle
  - B. Groins
  - C. Thermae
  - D. Buttress
  
9. A valve used on pipe lines to prevent backflow of water
  - A. Gate valve
  - B. Check valve
  - C. Angel valve
  - D. Globe valve
  
10. It is a pipe which receives discharge of any fixture except water closets and conveys it to the soil pipe
  - A. Waste pipe
  - B. Wet vent
  - C. Dry vent
  - D. Individual vent
  
11. A mass masonry built against a wall to persist the pressure of arch or vault
  - A. Pinnacle
  - B. Groins
  - C. Thermae
  - D. Buttress
  
12. A pipe installed horizontally or vertically which receives the discharge of water closet.
  - A. Waste pipe
  - B. Soil branch
  - C. Soil pipe
  - D. Sewer line
  
13. The index of civilization, of an age, race, or people
  - A. House
  - B. Architecture
  - C. Civilization
  - D. Culture

14. Palatial public bath of imperial Rome raised on high platform
  - A. Aqueduct
  - B. Spa
  - C. Thermae
  - D. Romanarch
  
15. Part of plumbing system which maintains the atmospheric pressure inside the pipe
  - A. Trap
  - B. Vent
  - C. Siphonage
  - D. Branch
  
16. It is the most popular and generally specified pipe for drainage installation?
  - A. Cast Iron Pipe
  - B. Asbestos Pipe
  - C. Lead Pipe
  - D. Clay Pipe
  
17. Line of intersection of cross vault
  - A. Squinch
  - B. Groins
  - C. Vault
  - D. Buttress
  
18. Make no little plans; they have no magic to stir men's blood.
  - A. Robert Maillart
  - B. Robert Venturi
  - C. Daniel Burnham
  - D. Richard Neutra
  
19. "Less is More" Dictum was first used by
  - A. Ludwig Mies Van de Rohe
  - B. Le-Corbusier
  - C. Walter Gropius
  - D. F.L. Wright
  
20. Form follows function- that has been misunderstood. Form and function should be one, joined in a spiritual union
  - A. Frank Lloyd Wright
  - B. Walter Gropius
  - C. A. P. Kanvinde
  - D. Anant Raje
  
21. India International Centre, New Delhi was designed by
  - A. Charles Correa
  - B. Eero Saarinen
  - C. Frank Lloyd Wright
  - D. Joseph Allen Stein

22. "A house is a house" dictum is by
- A. Le Corbusier
  - B. Louis Sullivan
  - C. Louis Kahn
  - D. Uttam C. Jain
23. The house is a machine for living in
- A. Le Corbusier
  - B. Louis Sullivan
  - C. Louis Kahn
  - D. Walter Gropius
24. The Kyoto Protocol addressed the issue of
- A. Biodiversity
  - B. Green House Gases
  - C. Wet Lands
  - D. Water shed areas
25. An Intelligensia that develops new or experimental concepts especially in the arts.
- A. Anant Garde
  - B. Post Modernism
  - C. Neo- Impressionism
  - D. Neo- deconstructionism
26. Which of the following is not included in the UDPFI guidelines for urban Development.
- A. Perspective Plans
  - B. Development Plans
  - C. City development Plans
  - D. Annual Plans
27. The measurement of size and proportions of the human body is called
- A. Anthropometry
  - B. Cognitive behavioural Mapping
  - C. Universal Design
  - D. Ergonomics
28. Under which category, the percentage of land use decreases with an increase in city size.
- A. Residential
  - B. Commercial
  - C. Recreational
  - D. Transportation and Communication
29. Architectural Projects designed by Laurie Baker are generally characterised by
- P. Appropriate Technology
  - Q. Human scale
  - R. Interpretation of nine square model
  - S. Use of locally available Materials.
- (A) P, R, S (B) P, Q, S (C) Q, R, S (D) P, Q, R

30. The Predominant characteristics of spatial organisational principles found in the works of Le-Corbusier and Frank Lloyd are characterised respectively by
- A. Grid organization and Linear Planar organization
  - B. Centralized clustered organization and Grid organization
  - C. Radial organization and Grid – radial organization
  - D. Centralized organization and Multi grid organization
31. The difference between an axonometric projection and isometric projection of an object with respect to a picture plan is in terms of
- A. Height or Breadth of cross sectional views generated by the picture plane
  - B. Measurement in the angle of faces with respect to aspect ratio
  - C. Obliqueness in projection of faces of the project on the vertical plane
  - D. Foreshortened angular measurements in the three principal axes.
32. The botanical ( Scientific) name given to Gulmohar is
- A. Delonix regia
  - B. Cassia fistula
  - C. Ficus religiosa
  - D. Polyalthia longifolia
33. Plan of Mohenjodaro and Medieval Jaipur are based on
- A. Grid Pattern and Sectoral allocation of Zoning
  - B. Radial Pattern and grid allocation of zoning
  - C. Clustered pattern and segregated allocation of Zoning
  - D. Centralized pattern and composite allocation of zoning
34. The most appropriate criteria to be considered for delineating backward regions are
- P. Density of population
  - Q. Amount of Sales Tax collection
  - R. Infant Mortality
  - S. Per capita income and its distribution
- (A) P, R (B) R, S (C) P, S (D) P, Q
35. In Professional Practice, there are disputes among the Architects, clients and Contractors regarding the Building Construction and Contract, Then to resolve the issues the expert/ experts appointed for the same is/are termed as
- A. Arbitrator
  - B. Lawyer
  - C. Solicitor
  - D. Valuer
36. Two names associated with the planning of Paris and Philadelphia are respectively
- A. George Eugene Hausmann and William Penn
  - B. Patrick Geddes and Lucio Costa
  - C. Albert Perry & Oswald Spangler
  - D. Le Carbusier and John Friedman

37. Ecological Footprints corresponds to
- A. The land area required to preserve sufficient levels of oxygen for a community
  - B. The land area necessary to supply natural resources to a community and disposal of its wastes.
  - C. The land area required to take care of solid waste and sewerage of a community
  - D. The Land area per person, per year from which the forests are cut.
38. The dark brown organic compound formed in the soil due to partial or complete decomposition of vegetable matter is
- A. Loam
  - B. Texture
  - C. Humus
  - D. Mulch
39. The word Bionomics refers to
- A. Management of Land
  - B. Management of Project
  - C. Management of Fund
  - D. Management of Life
40. The following form is not associated with the trees
- A. Columnar
  - B. Weeping Type
  - C. Pyramidical
  - D. Undulating
41. Moss, Rock, water and Dry gardens refer to
- A. Mughal gardens
  - B. English gardens
  - C. Japanese gardens
  - D. Italian gardens
42. The resistance of water to the passage of light is a measure of
- A. Colour
  - B. Turbidity
  - C. Hardness
  - D. Portability
43. The Psychrometric chart concerns the behaviour of
- A. Mixture of air in atmosphere
  - B. Physical and thermal properties of moist air
  - C. Operative and outdoor temperature
  - D. People in their communities
44. The following names are associated with the Bauhaus movement.
- A. Louis Sullivan & Paolo Soleri
  - B. Paul Klee & Walter Gropius
  - C. Richard Neutra & Paul Rudolph
  - D. James Drew & Ralph Rapson

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45. In a Land use Map, identify the colour code associated with the residential buildings.

- A. Yellow
- B. Purple
- C. Blue
- D. Black

46. The Community comprising 120 hectares is having 60 % of the land put to residential plots and a population of 30600. Calculate the residential density.

- A. 375 pph
- B. 400 pph
- C. 425 pph
- D. 500 pph

47. What is this famous building used for?



- A. Theatre
- B. Worship place
- C. Sport arena
- D. Art museum

48. Where is this famous staircase located?



- A. The Opera House, Paris
- B. The Vatican, Rome
- C. Park Guell, Barcelona
- D. International court of justice, Hague

49. A clay-based unglazed ceramic of baked earth is called-
- A. Bracket
  - B. Arcade
  - C. Clerestory
  - D. Terracotta
50. What is a curved triangle of vaulting formed by the intersection of a dome with its supporting arches called?
- A. Pendentive
  - B. Cornice
  - C. Dome
  - D. Clerestory
51. An ornamental moulding around the wall of a room just below the ceiling.
- A. Façade
  - B. Ionic
  - C. Cornice
  - D. Pilaster
52. The most famous structure of Byzantine architecture and notable of its large dome.
- A. Basilica of Saint'Apollinare Nuovob
  - B. Church of San Vitalec
  - C. Hagia Irened
  - D. Hagia Sophia
53. Architect of TWA airport
- A. Alvar Aalto
  - B. Frank Lloyd wright
  - C. Mies van de Rohe
  - D. Eero Saarinen
54. Architect of the Chicago Tribune Tower.
- A. Raymond Hood
  - B. Mies van de Rohe
  - C. Frank Lloyd Wright
  - D. Erich Mendelson
55. Type of plan of the Byzantine churches.
- A. Circular
  - B. Cross-type
  - C. Rectangular
  - D. Centralized
56. A recess in a wall to contain a statue or other small items.
- A. Ambulatory
  - B. Niche
  - C. Exedra
  - D. Narthex



57. Organisations namely ISOLA, IFLA and ASLA are associated with:
- A. Environmental planning
  - B. Landscape architecture
  - C. Modular coordination
  - D. Urban Design
58. 'Inflorescence' in a tree-structure refers to
- A. Flowering character
  - B. Fragrance of the flowers
  - C. Spread characteristics of the branches
  - D. Depth of the root structure
59. The Columbian Exposition in North America is synonymous with
- A. City Beautiful Movement
  - B. Broad-acre City
  - C. City Beautiful Movement
  - D. Garden City
60. Match the architects/city planners from group I with the design movements in group II
- | <b>Group I</b>    | <b>Group II</b>              |
|-------------------|------------------------------|
| P. Vitruvius      | 1. Post Modernism            |
| Q. FL Wright      | 2 Broadacre city             |
| R. Robert Venturi | 3. Ekistics                  |
| S. C.A. Doxiadis  | 4. Ten books of Architecture |
- A. P-4, Q-2, R-1, S-3
  - B. P-3, Q-1, R-4 S-2
  - C. P-2, Q-3, R-1, S-4
  - D. P-1, Q-4, R-2, S-3
61. Which of the following is NOT a criterion for defining urban areas in India?
- A. Population size
  - B. Percentage of male working population engaged in non-agricultural pursuits
  - C. Population density
  - D. Percentage of pucca houses
62. The woody perennials, where the branches start from or very near from the ground
- A. Shrubs
  - B. Trees
  - C. Creepers
  - D. Ground covers
63. The essential difference between CPM and PERT is
- A. Critical path vs. Critical activity
  - B. Arrow notation vs. Precedence notation
  - C. Deterministic approach vs. Probabilistic approach
  - D. Project management vs. Network analysis

64. On the colour wheel, the combination of 'purple-yellow' or 'orange-blue' are best described as
- A. Complementary
  - B. Supplementary
  - C. Analogous
  - D. Monochromatic
65. GRIHA is a rating for green building given by
- A. The Energy Research Institute
  - B. Development Alternatives
  - C. Bureau Of Energy Efficiency
  - D. Ministry Of Power
66. 'Usonian' houses were designed by
- A. Mies van der Rohe
  - B. Alvar Alto
  - C. Frank Lyod Wright
  - D. Le Corbusier
67. The property of concrete measured by Slump test is
- A. Durability
  - B. Hardness
  - C. Strength
  - D. Workability
68. Development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs is termed by UNDP as
- A. Comprehensive development
  - B. Equitable development
  - C. Human development
  - D. Sustainable development
69. 'Flying buttress' is an architectural element of
- A. Indian architecture
  - B. Greek architecture
  - C. Gothic architecture
  - D. Byzantine architecture
70. Horizontal member of a shutter that subdivides a window is termed as
- A. Mullion
  - B. Transom
  - C. Reveal
  - D. Purlin
71. EIA stands for
- A. East India Association
  - B. Environmental Impact Audit
  - C. Environmental Impact In Asia
  - D. Environmental Impact Assessment

72. LEED is the internationally accepted rating for

- A. Green buildings
- B. Fire resistant buildings
- C. Intelligent buildings
- D. Tall buildings

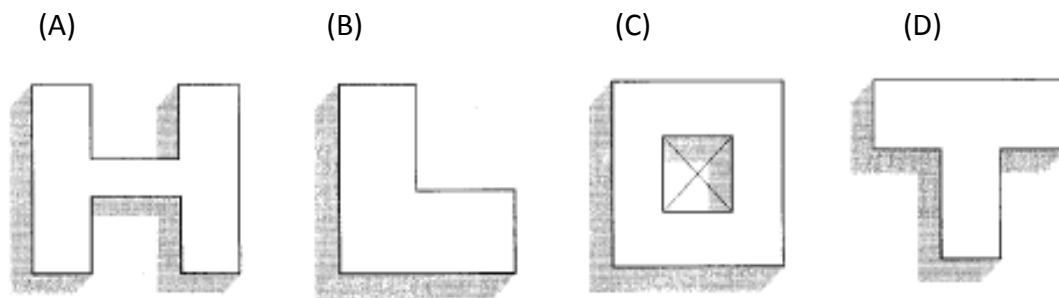
73. National Science Centre at Pragati Maidan, New Delhi, is designed by

- A. J.A. Stein
- B. Anant Raje
- C. Raj Rewal
- D. A.P. Kanvinde

74. Capital town of Gandhinagar has been designed by

- A. Norman Foster
- B. B.V. Doshi
- C. H.K.Mewada
- D. Le Corbusier

75. The most suitable earthquake resistant built plan form is:



76. Dandaka form of settlement layout is basically a

- A. Grid iron pattern
- B. Ring radial pattern
- C. Radial pattern
- D. Informal pattern

77. Which of the following is NOT a member of a steel truss?

- A. Gusset plate
- B. Wall plate
- C. Fish plate
- D. Anchor bolts

78. Which Japanese has been awarded the Pritzker prize in 2013?

- A. Wang Shu
- B. Toyo Ito
- C. Kazuyo Sejima
- D. Tadao Ando

79. Which among the following is not an Aga Khan Award recipient?
- A. Vidhan Bhawan, Bhopal
  - B. Petronas Tower, Kuala Lumpur
  - C. SOS Children's Village, Jordan
  - D. Museum of Islamic Arts, Doha
80. In urban planning, **Cohort** refers to:
- A. Age and sex classification of population
  - B. Contour level in slope analysis
  - C. Landuse classification of public and semi-public spaces
  - D. Soil layer classification
81. Rajiv Awas Yojna of Ministry of Housing, Government of India addresses housing for
- A. Middle income group
  - B. Low income group
  - C. High income group
  - D. Slum dwellers
82. Rose window is an iconic feature of
- A. Notre Dame, Paris
  - B. Hagia Sophia, Istanbul
  - C. St. Peter's, Rome
  - D. Victoria Memorial, Kolkata
83. Identify the odd one among the following
- A. Security deposit
  - B. Professional tax
  - C. Performance bank guarantee
  - D. Earnest money
84. In India, one of the slum improvement initiative is
- A. Special Residential Zone
  - B. Valmiki Ambedkar Malin Basti Awas Yojna
  - C. Indira Awas Yojna
  - D. Eco Housing
85. The planning document submitted for the selected cities under JNNURM is
- A. Master plan
  - B. Basic development plan
  - C. City development plan
  - D. Outline development plan
86. The appropriate material for flooring of an external ramp of a building would be
- A. Polished granite
  - B. Wax polished marble
  - C. Glazed ceramic tiles
  - D. Rough finish sandstone

87. Purity of colour is described by

- A. Hue
- B. Value
- C. Chroma
- D. Tone

88. The slab simply supported on all its edges with a ratio of longer side to shorter side greater or equal to 2 is designed as

- A. One way slab
- B. Two way slab
- C. Flat slab
- D. Coffered slab

89. Match the joints in group I to the corresponding figures in group II

Group I

P. Butt joint

Q. Rebated joint

R. Table joint

S. T&G joint

Group II



- A. P-3, Q-4, R-1, S-2
- B. P-4, Q-1, R-3, S-2
- C. P-3, Q-1, R-2, S-4
- D. P-3, Q-4, R-2, S-1

90. Consider the following features

- Length finely proportional to its width
- Statues as silhouettes against the sky above cornice lines
- Fountains signifying fine vintage points
- Series of different shapes connected by traditional narrow streets, column screens or arches

The element of urban design which comprises the above is

- A. Vista
- B. Piazza
- C. Rond point
- D. Bosque

**END OF QUESTION PAPER**