



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

Q 1 : Marble used as a building material in Buildings belongs to the category of

- (A) Sedimentary Rocks
- (B) Dolomite
- (C) Metamorphic Rocks
- (D) Igneous Rocks

Q 2: Indian Institute of Management Ahmedabad is designed by

- (A) Louis Kahn
- (B) B V Doshi
- (C) A P Kanvinde
- (D) Anant Raje

Q 3: Retention amount is required to be deposited by a tenderer

- (A) Before acquiring a tender document
- (B) During the submission of the tender document
- (C) After the contract is awarded
- (D) Before getting the payment against the running bill.

Q 4: The 73rd and 74th Constitutional Amendments pertains to:

- (A) Abolishing the Urban Land Ceiling Act.
- (B) Providing restricted role to local courts to settle rural disputes.
- (C) Providing more responsibility to municipal and local bodies for planning and development.
- (D) Providing right to information for the general public.

Q 5: The famous Zen gardens of Japan are

- (A) Formal gardens
- (B) Informal gardens
- (C) Water Gardens
- (D) Dry Gardens

- Q 6: The World famous hanging gardens were built on
(A) Flood Plains of Tigris
(B) Flood Plains of Euphrates
(C) The slopes of Median hills
(D) The coast line of Persian gulf
- Q 7: Brasilia, the capital of Brazil is designed by
(A) Paolo Soleri
(B) Frank Lloyd Wright
(C) Le Corbusier
(D) Lucio Costa
- Q 8: Which Plan form is the most suitable for the building located in the Earthquake zone
(A) Rectangular
(B) L Shaped
(C) Circular
(D) Square
- Q 9: Microclimate refers to
(A) Tropical Climate
(B) Temperate Climate
(C) Climate created in a limited area
(D) Growth of Microorganisms due to climate
- Q 10 : Water Harvesting is
(A) A new method of water purification
(B) A device used for quick flow of storm water runoff into rivers
(C) Device to redirect storm water run-off into under ground aquifers
(D) Collection of water from the Agriculture fields.
- Q 11: Bahai Temple in Delhi is a
(A) Shell Structure
(B) Tent structure
(C) Pneumatic structure
(D) Tensile Structure
- Q 12: Mill owners' Association Building in Ahmedabad is designed by
(A) Charles Correa
(B) Louis Kahn
(C) Le-Corbusier
(D) Uttam C. Jain
- Q 13: The Value of run-off coefficient $Q = CIA$ for a completely impervious surface, for which there is a total run-off is
(A) 0 (B) 10%
(C) 1% (D) 1
- Q 14: A Contour line is
(A) An imaginary line connecting points of equal elevation on ground
(B) The line identifying the edges of the highway
(C) The lines identifying the edges of rivers and lakes
(D) An imaginary line connecting the ridges and hill tops.
- Q 15: The Famous Dilwara temple at Mount Abu is an example of
(A) Buddhist temple
(B) Hindu Temple
(C) Jain Temple
(D) Dravidian Temple
- Q 16: The Development that meets the need of the present generation without compromising the needs of the future generation is
(A) Balanced Development
(B) Economic Development

PUNJAB TECHNICAL UNIVERSITY, JALANDHAR

- (C) Equitable and Social Development
- (D) Sustainable Development

Q 17: Weep Hole refers to

- (A) Holes in retaining wall to allow water to drain out
- (B) Holes made in timber to take out moisture
- (C) Internal Anatomical pipe in the Humans to connect the throat and Ear
- (D) Rain water pipes connecting the upper terrace with the lower ones and then ground

Q 18 : The structural Device Pendentives is used in

- (A) Making a vault on a long passage
- (B) Making a dome on a square plan
- (C) Decorating the corners of the room
- (D) Closing the end of the vault

Q 19 : Urushringa is the design component used for one of the following temples.

- (A) Buddhist temple
- (B) Khajuraho
- (C) Dravidian
- (D) Deccan

Q 20: The Hall of Nations in Pragati Maidan of New Delhi is essentially a three dimensional space frame with the basic unit of

- (A) A spheroid
- (B) A Decahedron
- (C) A tetrahedron
- (D) An Octahedron

Q 21: The Neo-classical movement in the 18th century began as a reaction against

- (A) Baroque style
- (B) Renaissance style
- (C) Gothic style
- (D) Romanesque style

Q 22: The essential components of Buddhist Stupa Architecture are

- (A) Ratha, Vimana, Harmika
- (B) Antrala, Vimana, Shikhara
- (C) Torana, Ratha, Stambha
- (D) Vedika, Pradakshina, Harmika

Q 23: For Natural Light, Day Light Factor is defined as the sum of

- (A) Sky Component, External reflected component, Internal reflected component
- (B) Sky Component, reflected component, Absorption component
- (C) Outdoor component, Indoor component, Reflected component
- (D) Azimuth component, Altitude component, sky component

Q 24: Match the following Architectural styles

- | | |
|--------------|--------------------|
| (P) Greek | (1) Hypostyle Hall |
| (Q) Roman | (2) Chaitya Hall |
| (R) Buddhist | (3) Parthenon |
| (S) Egyptian | (4) Triumphal Arch |

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

Q 25 : The Kyoto protocol address the issue of

- (A) Bio-Diversity
- (B) Water Harvesting
- (C) Wetlands
- (D) Green House gases

PUNJAB TECHNICAL UNIVERSITY, JALANDHAR

- Q 26: 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
- Q 27: The minimum thickness of a wall where single Flemish Bond can be used is
(A) Half Brick thick
(B) One Brick thick
(C) One and a half brick thick
(D) Two Brick thick
- Q 28: GRIHA is a rating for Green Buildings given by
(A) Development Alternatives
(B) The Energy Research Institute
(C) Bureau of Energy Efficiency
(D) Ministry of Power
- Q 29: A Culdesac is a street where
(A) Only two wheelers are permitted
(B) Thorough Traffic is discouraged
(C) Only pedestrians are allowed
(D) Vehicles are permitted to move in one direction only.
- Q 30: The Property of the concrete measured by the slump Test is
(A) Durability
(B) Hardness
(C) Strength
(D) Workability
- Q 31: Match the Institutions with group I with Architects in group II
- | Group I | Group II |
|---|-------------------|
| (P) National Dairy Development Board, New Delhi | 1. BV Doshi |
| (Q) National Institute of Immunology, New Delhi | 2. Charles Correa |
| (R) Indian Institute of Management Bangalore | 3. AP Kanvinde |
| (S) Jodhpur University, Jodhpur | 4. J.A Stein |
| | 5. Raj Rewal |
| | 6. U.C Jain |
- A) P-3, Q-5, R-1, S-6
B) P-6, Q-3, R-4, S-1
C) P-3, Q-1, R-4, S-6
D) P-3, Q-4, R-2, S-6
- Q 32: The Principle of Solid Waste Management involves
(A) Reduce, Reuse, Renew
(B) Recycle, Replenish, Reuse
(C) Reduce, Reuse, Reproduce
(D) Reduce, Reuse, Recycle
- Q 33: Inflorescence in Plants refer to
(A) Flowering Character
(B) Fragrance of the flowers
(C) Spread Characteristics of the branches
(D) Stem Characteristics
- Q 34: Architectural Projects designed by Laurie Baker are generally characterized By
(A) Appropriate Technology
(B) Human scale
(C) Use of Shell Structure
(D) Use of locally available materials

Q 35: "Usonian" houses were designed by:

- (A) Mies Van der Rohe
- (B) Alvar Aalto
- (C) Frank Lloyd Wright
- (D) Le Corbusier.

Q 36: The parameter that does not appear in a Psychrometric Chart is

- (A) Wind Speed
- (B) Dry bulb Temperature
- (C) Wet bulb temperature
- (D) Relative humidity

Q 37: A town with a population of 50000 has an average household size of 5.0. The number of occupied dwelling units is 8400 of which 10% are in dilapidated condition. The household demand of the town is

- (A) 760
- (B) 1600
- (C) 2440
- (D) 10840

Q 38: Function of the Air Handling Unit is to :

- (A) Purify and re-circulate the cool air.
- (B) Supply purified bulk of air from outside to the window air conditioner.
- (C) Collect the stale air from the room and throw it outside the building.
- (D) Act as a container in which air is carried from one place to another.

Q 39: Which of the following is not included in the UDPFI guidelines for Urban Development

- (A) Perspective Plan
- (B) Development Plan
- (C) City Development Plan
- (D) Annual Plan

Q 40 The Columbian Exposition in North America is synonymous with

- (A) City Beautiful Movement
- (B) Urbana Lake front development
- (C) CIAM
- (D) Broad acre City.

Q 41 **Ramsar** list is related to :

- (A) Wetlands
- (B) Heritage buildings
- (C) Seismic zones
- (D) Special Economic Zones.

Q 42: A brick cut lengthwise into two pieces so that each piece is half as wide as the full brick is called:

- (A) King closer
- (B) Frog
- (C) Quoin brick
- (D) Queen Closer

Q 43: The project HABITAT 67, Montreal, designed by Moshie Safdie is an example of

- (A) High rise apartments
- (B) Low rise detached dwellings
- (C) Organic architecture
- (D) Prefabricated housing

Q 44: LEED is the internationally accepted rating system for

- (A) Green buildings
- (B) Fire resistant buildings
- (C) Intelligent buildings
- (D) Tall buildings

Q 45 : The Virasat-e-Khalsa building at Sri Anandpur Sahib is designed by

- (A) Raj Rewal
- (B) Jasbir Sachdeva
- (C) Moshie Safdie
- (D) BV Doshi

Q 46: 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

Q 47: A typical roof top Rainwater Harvesting System essentially comprises of

- P. Roof Catchment
- Q. Down pipes
- R. Rain gauge
- S. Filter chamber

- (A) P,R (B) P,R,P,S (C) Q,R,S (D) P.Q.S

Q 48: Match the architects in Group-I with their works in Group-II

Group-I

- P. Norman Foster
- Q. Cesar Pelli
- R. Richard Meier
- S. Renzo Piano

Group-II

- 1. Petronas Towers
- 2. Kansai Airport
- 3. HSBC, Hongkong
- 4. The Artheneum
- 5. Sydney Opera House

- (A) P-3, Q-1, R-4, S-2
- (B) P-4, Q-1, R-2, S-3
- (C) P-3, Q-2, R-5, S-1
- (D) P-5, Q-3, R-1, S-2

Q 49: In a professional practice, when there are disputes among the architects, clients and contractors regarding the building construction or 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

Q 50: Early Aryan Civilization is characterised by

- (A) Introduction of arches and domes
- (B) Wooden construction
- (C) Rock cur Architecture
- (D) Flat brick masonry

- Q 51: In a pitched truss the two vertical web members set at equal distances from the apex are called
- (A) Joggle post
 - (B) Queen post
 - (C) King post
 - (D) Jack post
- Q 52: Belt truss is used in High-Rise buildings with a view to provide
- (A) Aesthetic appearance
 - (B) Rigid connection between the columns
 - (C) Escalators
 - (D) Support a large span floors
- Q 53: The cubical contents of a cement bag of 50.0 kg is generally
- (A) 0.25 cu m
 - (B) 0.034 cu m
 - (C) 0.043 cu m
 - (D) 0.05 cu m
- Q 54: Out of the following brick paving pattern the diagonal directional motif is prominent in
- (A) Basket weaving
 - (B) Stacked bond laid flat
 - (C) Running bond on edge
 - (D) Herring bone on edge
- Q 55: The figurehead style of Antonio Gaudi's work is known as
- (A) Catalan Modernism
 - (B) Gothic
 - (C) Renaissance
 - (D) Neo-Classicism
- Q 56: In barriers free design, non-ambulatory disabilities deal with
- (A) Impairments confining individuals to wheelchair
 - (B) Hearing impairment
 - (C) Total or partial blindness
 - (D) Spastic or amputees using braces or crutches
- Q 60: The three qualities defining our perception of chromatic light are
- (A) Hue, Tint, Shade
 - (B) Brightness, Contrast, Tint
 - (C) Value, Hue, Intensity
 - (D) Values, Brightness, shade
- Q 61: Urban renewal is best explained as
- (A) Renewal of expired building permit.
 - (B) Renewal of bye laws of commercial area
 - (C) Technique to limit the population growth
 - (D) Redevelopment in areas of moderate to high density urban land use
- Q 62: The basic elements of Ekistics are
- (A) Community, Land, Shell, Network, Image
 - (B) Society, Nature, Man, Shell, Network
 - (C) Community, Landscape, Culture, Society, Transport
 - (D) Nature, Shell, Network, Administration, Society

PUNJAB TECHNICAL UNIVERSITY, JALANDHAR

Q 63: Match the quantities in Group-I with measuring units in Group-II

Group-I

P. Brickwork

Q. Steelwork

R. Plastering

S. Nosing

(A) P-4, Q-2, R-3, S-1

(B) P-4, Q-3, R-1, S-2

(C) P-1, Q-3, R-4, S-2

(D) P-2, Q-4, R-3, S-1

Group-II

1. Square meters

2. Running meters

3. Tonne

4. Cubic metre

Q 64: Match the City Planners in Group-I with the planning theories in Group-II

P. Patrick Geddes

Q. Gordon Cullen

R. Kevin Lynch

S. Lewis Mumford

(A) P-2, Q-3, R-4, S-1

(B) P-4, Q-1, R-2, S-3

(C) P-3, Q-4, R-1, S-2

(D) P-4, Q-3, R-1, S-2

1. Mental Maps

2. Cities in transition

3. Diagnostic approach to planning

4. Concise Townscape

Q 65: Match the cities in Group-I with planning concepts in Group-II

P. Radburn

Q. Broadacre

R. Chandigarh

S. Letchworth

(A) P-3, Q-1, R-2, S-4

(B) P-1, Q-3, R-2, S-4

(C) P-2, Q-4, R-1, S-3

(D) P-4, Q-2, R-3, S-1

1. Linear City

2. Sectoral Plan

3. Town of a motor age

4. Garden City

Q 66: Match the architectural terms in Group-I with their description in Group-II

P. Trombe wall

Q. Brise-soleil

R. Drum wall

S. Solarium

(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-2, Q-1, R-3, S-4

1. A black water filled vessel absorbing solar radiation

2. Glass enclosed space for sun bathing

3. Glaze-front masonry wall absorbing solar radiation

4. Screen to shield the interior from sunlight

Q 67: Match the valuation terms in Group-I with their description in Group-II

P. Scrap Value

Q. Salvage value

R. Market value

S. Book value

(A) P-3, Q-1, R-2, S-4

(B) P-2, Q-3, R-4, S-1

(C) P-1, Q-2, R-3, S-4

(D) P-3, Q-4, R-2, S-1

1. Value at the end of the utility period

2. Value in present transaction

3. Value of dismantled material

4. Value after deducting the depreciation

Q 68: Match the urban forms in Group-I with their description in Group-II

- | | |
|------------------|--|
| P. Satellite | 1. Urban centre around large open space |
| Q. Constellation | 2. Urban form around a main centre |
| R. Ring | 3. Similar sized urban centre in close proximity |
| S. Radio Centre | 4. Circular form with radial corridors |
- (A) P-1, Q-3, R-4, S-2
(B) P-2, Q-3, R-1, S-4
(C) P-2, Q-4, R-3, S-1
(D) P-1, Q-2, R-3, S-4

Q 69: Match the Structural system in Group-I with force distribution pattern in Group-II

- | | |
|---------------------------|---|
| P. Flying Buttresses | 1. High tensile strength |
| Q. Catenary | 2. Outward and downward thrust |
| R. Simply supported truss | 3. Comprehensive, tensile and shear stresses acting in the plane of the surface |
| S. Shell | 4. Axial tension and compression |
- (A) P-2, Q-1, R-4, S-3
(B) P-2, Q-3, R-4, S-1
(C) P-3, Q-4, R-2, S-1
(D) P-4, Q-1, R-2, S-4

Q 70: Match the Landuse in Group-I with their prime activities in Group-II

- | | |
|---------------------------|----------------------------------|
| P. Commercial | 1. Crematorium and burial ground |
| Q. Public and Semi-public | 2. Truck Terminal |
| R. Recreational | 3. Hotels |
| S. Transportation | 4. Parks and Gardens |
- (A) P-2, Q-1, R-4, S-3
(B) P-2, Q-3, R-1, S-4
(C) P-3, Q-4, R-1, S-2
(D) P-3, Q-1, R-4, S-2

Q 71: The science of acquiring information about the earth's surface without actually being in contact with it is termed as

- (A) Geographical Information System
(B) Earth Sciences
(C) Remote Sensing
(D) Geomatics

Q 72: The dark brown organic compound formed in the soil due to partial or complete decomposition of vegetable matter is known as

- (A) Loam
(B) Texture
(C) Humus
(D) Mulch

Q 73: For proper ventilation, the ratio of opening area to the total floor area of the room should be

- (A) 1:6
(B) 1:10
(C) 1:12
(D) 1:20

Q 74: Gate valve are used in the water supply line to

- (A) Isolate parts of the water network
(B) Drain out excess water
(C) Release air trapped in the pipeline
(D) Limit the flow of water

Q 75: Grease trap is provided in the house drain connected to

- (A) Kitchen
- (B) Bathroom
- (C) Water closet
- (D) Urinal

Q 76: When the picture-plane located between the object and the observer is moved towards the observer the size of the perspective view

- (A) increases in size
- (B) remains same
- (C) is distorted
- (D) decreases in size

Q 77: The Sanskrit school of Auroville is a work of

- (A) modular precast concrete blocks
- (B) ferro cement and terra forming
- (C) advanced steel truss and space frame
- (D) adobe and mud plastering

Q 78: The survey of India topographic sheets stating 1:50000 refer to

- (A) graphic scale
- (B) spatial scale
- (C) time scale
- (D) numeric scale

Q 79: Mline command in AutoCAD

- (A) creates multiple parallel lines
- (B) draws two parallel lines
- (C) draws polylines
- (D) moves a line

Q 80: In a land use map, identify the colour code used for the manufacturing industry

- (A) Yellow
- (B) Blue
- (C) Purple
- (D) Black

Q 81: The technique that can alter the scale of the building is

- (A) façade articulation
- (B) visual analysis
- (C) photogrammetry
- (D) space programming

Q 82: The horizontal member of a shutter that subdivides a window is termed as

- (A) Mullion
- (B) Transom
- (C) Reveal
- (D) Purlin

Q 83: With respect to energy conservation and cost efficiency, the nature of an ideal form should be

- (A) High-Rise Low Density
- (B) Medium rise High density
- (C) Low rise High density
- (D) Low rise Low density

Q 84: A major hole in the Ozone layer has been identified above the

- (A) Amazon forest
- (B) Antarctic region
- (C) Sahara desert
- (D) Savannah Grassland

Q 85: Buddha achieved enlightenment under

- (A) Peepal tree
- (B) Ashoka tree
- (C) Banyan tree
- (D) Kadam tree

Q 86: 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

Q 87: The age of the tree is determined by

- (A) Counting the number of rings in the stem cross section
- (B) Counting the number of leaves on the main branch
- (C) Measuring the height of the tree from the rootball
- (D) Measuring the canopy circumference of the tree

Q 88: Layout of Mughal Gardens were influenced by

- (A) English gardens
- (B) Renaissance gardens
- (C) Baroque gardens
- (D) Persian Gardens

Q 89: The water requirement in residential area as per NBC standard is

- (A) 90 lpcd
- (B) 100 lpcd
- (C) 230 lpcd
- (D) 130 lpcd

Q 90: The plant bottle brush is a

- (A) Tree
- (B) Shrub
- (C) Bush
- (D) Climber

END OF QUESTION PAPER