

DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE ASKED TO DO SO

Test Booklet No. :

Series

00221

TEST BOOKLET
ARCHITECTURE
(Paper—II)



Time Allowed : 2 Hours

Full Marks : 100

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

1. The name of the Subject, Roll Number as mentioned in the Admission Certificate, Test Booklet No. and Series are to be written legibly and correctly in the space provided on the Answer-Sheet with Black/Blue ballpoint pen.
2. **Answer-Sheet without marking Series as mentioned above in the space provided for in the Answer-Sheet shall not be evaluated.**
3. All questions carry equal marks.

The Answer-Sheet should be submitted to the Invigilator.

Directions for giving the answers : Directions for answering questions have already been issued to the respective candidates in the 'Instructions for marking in the OMR Answer-Sheet' along with the Admit Card and Specimen Copy of the OMR Answer-Sheet.

Example :

Suppose the following question is asked :

The capital of Bangladesh is

- (A) Chennai
(B) London
(C) Dhaka
(D) Dhubri

You will have four alternatives in the Answer-Sheet for your response corresponding to each question of the Test Booklet as below :



In the above illustration, if your chosen response is alternative (C), i.e., Dhaka, then the same should be marked on the Answer-Sheet by blackening the relevant circle with a Black/Blue ballpoint pen only as below :

**The example shown above is the only correct method of answering.**

4. Use of eraser, blade, chemical whitener fluid to rectify any response is prohibited.
5. Please ensure that the Test Booklet has the required number of pages (16) and 100 questions immediately after opening the Booklet. In case of any discrepancy, please report the same to the Invigilator.
6. No candidate shall be admitted to the Examination Hall/Room 20 minutes after the commencement of the examination.
7. No candidate shall leave the Examination Hall/Room without prior permission of the Supervisor/Invigilator. No candidate shall be permitted to hand over his/her Answer-Sheet and leave the Examination Hall/Room before expiry of the full time allotted for each paper.
8. No Mobile Phone, Electronic Communication Device, etc., are allowed to be carried inside the Examination Hall/Room by the candidates. Any Mobile Phone, Electronic Communication Device, etc., found in possession of the candidate inside the Examination Hall/Room, even if on off mode, shall be liable for confiscation.
9. No candidate shall have in his/her possession inside the Examination Hall/Room any book, notebook or loose paper, except his/her Admission Certificate and other connected papers permitted by the Commission.
10. Complete silence must be observed in the Examination Hall/Room. No candidate shall copy from the paper of any other candidate, or permit his/her own paper to be copied, or give, or attempt to give, or obtain, or attempt to obtain irregular assistance of any kind.
11. This Test Booklet can be carried with you after answering the questions in the prescribed Answer-Sheet.
12. Noncompliance with any of the above instructions will render a candidate liable to penalty as may be deemed fit.
13. No rough work is to be done on the OMR Answer-Sheet. You can do the rough work on the space provided in the Test Booklet.

N.B. : There will be negative marking @ 0.25 per 1 (one) mark against each wrong answer.

/50-A

[No. of Questions : 100]

1. The Pritzker Architecture Prize 2024 has been awarded to
 - (A) Mario Botta
 - (B) Riken Yamamoto
 - (C) Rem Koolhaas
 - (D) Arata Isozaki

2. In urban planning, cohort refers to
 - (A) age and sex classification of population
 - (B) contour levels in slope analysis
 - (C) land use classification of public and semipublic spaces
 - (D) soil layer classification

3. The factor that influenced the development of historical architecture is
 - (A) site symbolizing democracy and Western civilization
 - (B) the economy of State
 - (C) religion-shaped architectural designs profoundly
 - (D) architectural design as an academic art informed by studies in geometry

4. Egyptian architecture underwent significant changes due to the influence of ____ architecture.
 - (A) Gothic
 - (B) Byzantine
 - (C) Roman
 - (D) Greek

5. Which architectural movement was replaced by modernism?
 - (A) Bauhaus
 - (B) Post-modernism
 - (C) Art deco
 - (D) Dadaism

6. The building used hot-rolled structural steel in its frame, ensuring strength and fire resistance for its towering height is
 - (A) Hall of Nation
 - (B) Empire State Building
 - (C) Fallingwater
 - (D) National Museum of Brazil

7. Which of the following is a disadvantage of steel?
 - (A) High durability
 - (B) Reusable
 - (C) High strength per unit mass
 - (D) Fire and corrosion resistance

8. BEES is an acronym for
 - (A) Building for Environmental and Economic Sustainability
 - (B) Built Environment and Ecological Society
 - (C) Building for Energy and Environment Sustainability
 - (D) Built Environment and Engineering Services

9. The criterion for background noise (in NC) in hospitals and apartments is
- 10–20
 - 20–30
 - 30–40
 - 40–50
10. 'Formation of GIS Based Master Plan' is a sub-scheme of
- Shyama Prasad Mukherji Rurban Mission
 - Jawaharlal Nehru National Urban Renewal Mission
 - Atal Mission for Rejuvenation and Urban Transformation
 - Smart Cities Mission
11. An element constructed at intervals along the length of a wall to stabilize it against overturning is
- barrel vault
 - pilaster
 - squinch arch
 - buttress
12. In ecology, the term 'niche' refers to
- the ways in which species interact with biotic and abiotic factors of the environment
 - only the abiotic factors such as temperature and rainfall
 - the gradient change of physiochemical characteristics between two ecosystems
 - the zone of junction or a transition area between two biomes
13. Which one of the following is **not** a land use zone?
- Agriculture zone
 - Commercial zone
 - Heritage zone
 - Industrial zone
14. Select the biosphere reserve in India which is listed in the Man and the Biosphere Programme of UNESCO.
- Sundarbans
 - Sena Oura
 - Majang Forest
 - Gulf of Mannar
15. The design of a septic tank requires consideration of space for which of the following?
- Settling of incoming sewage
 - Storage of digested sludge
 - Installation of a liner to allow seepage of effluent
 - Digestion of the settled sludge
16. Which of the following is classified as the principles of universal design?
- Perceptible information
 - Tolerance for error
 - Occult balance
 - Simple and intuitive use

- 17.** As per the United Nations, Transforming our World : the 2030 Agenda for Sustainable Development, 2015, which of the following Sustainable Development Goals (SDGs) directly addresses water-related issues?
- (A) SDG-1
 (B) SDG-4
 (C) SDG-6
 (D) SDG-14
- 18.** As per the National Building Code of India 2016, terminology associated with firefighting in a building is
- (A) refuge area
 (B) water sprinkler system
 (C) panic bar
 (D) atrium
- 19.** Which among the following acronyms represents a thermal comfort index?
- (A) PMV
 (B) NDVI
 (C) DEM
 (D) PCA
- 20.** Angle of incline of moving walks shall be not more than
- (A) 15°
 (B) 16°
 (C) 12°
 (D) 18°
- 21.** How many sets of criteria GRIHA use for assessing and rating the building?
- (A) 31
 (B) 33
 (C) 34
 (D) 32
- 22.** Which of the following heritage sites has Dravidian style of architecture?
- (A) Hampi
 (B) Ellora
 (C) Khajuraho
 (D) Konark
- 23.** Insulation made from _____ is eco-friendly and effective at preventing heat transfer and moisture transfer.
- (A) perlite
 (B) blanket insulation
 (C) cork
 (D) reflective sheet material
- 24.** The distribution mains in water supply system are designed for
- (A) maximum daily demand
 (B) peak hourly demand
 (C) average daily demand
 (D) maximum hourly demand on maximum consumption day

25. Indoor unit of split air conditioner is a/an _____, designed primarily to provide conditioned air to an enclosed space, room or zone.
- (A) compressor
(B) heat exchanger
(C) air handling system
(D) None of the above
26. Which of the following is key consideration in seismic building codes?
- (A) Roofing materials
(B) Foundation strength
(C) Window placement
(D) Interior paint quality
27. The National Urban Rental Housing Policy came in the year
- (A) 2006
(B) 2008
(C) 2015
(D) 2016
28. Name the day that is celebrated as the World Environment Day.
- (A) 5th June
(B) 6th June
(C) 8th June
(D) 10th June
29. Hip roof is formed by surfaces sloping in
- (A) one direction
(B) two directions
(C) three directions
(D) four directions
30. 'Hiroshima Peace Memorial Museum' in Japan has been designed by
- (A) Kenzo Tange
(B) Kisho Kurokawa
(C) Tadao Ando
(D) I. M. Pei
31. The Grand Gallery in Egyptian architecture is provided only at
- (A) the Great Pyramid of Giza
(B) Temple
(C) Mastaba
(D) Bent Pyramid
32. The most important property of concrete in its fresh state is
- (A) compressive strength
(B) tensile strength
(C) elastic strength
(D) workability
33. 'Finger plan' concept of urban planning was initially adopted in
- (A) Canberra
(B) Paris
(C) Copenhagen
(D) Tokyo

34. Ebenezer Howard suggested the maximum population of Garden City as _____ persons.
- (A) 10000
(B) 22000
(C) 32000
(D) 58000
35. During earthquake, soft storey failure in a building is due to
- (A) shear failure initiated by short column effect
(B) stress discontinuity initiated by abrupt changes in stiffness
(C) failure of column initiated by weak column-strong beam effect
(D) drift of building storey initiated by pounding effect
36. 'Summit curve' is a term associated with the design of
- (A) road and flyovers
(B) escalators and elevators
(C) tensile fabric structures
(D) geodesic domes
37. Statutory setback of a building depends on
- (A) building height
(B) property boundary
(C) width of access road
(D) ground coverage
38. In CMYK colour model, 'K' represents the colour
- (A) white
(B) black
(C) blue
(D) green
39. Low emissivity coating on a glazing unit
- (A) increases the SHGC
(B) increases the VLT
(C) reduces the SHGC
(D) increases the VLT and SHGC
40. As per CPWD guidelines and space standards for barrier-free built environment, the minimum turning radius for a wheelchair in mm is
- (A) 900
(B) 1200
(C) 1500
(D) 1800
41. PMGSY, a programme of the Government of India, deals with
- (A) urban employment generation
(B) rural employment generation
(C) rural electrification
(D) rural road development
42. What is the area prescribed by the Government of India for a housing unit for economically weaker section?
- (A) Up to 300 sq.ft.
(B) Up to 450 sq.ft.
(C) Up to 600 sq.ft.
(D) Up to 750 sq.ft.

43. Which of the following is a housing sector development scheme?
- (A) HRIDAY
(B) AMRUT
(C) PMAY
(D) SBM
44. 'DHARAHARA' refers to
- (A) concept of Vastu Shastra
(B) elevation feature of a Hindu temple
(C) heritage tower at Kathmandu
(D) construction method of Buddhist architecture
45. The concept of 'dry garden' is associated with
- (A) Japanese garden
(B) Chinese garden
(C) Mughal garden
(D) Egyptian garden
46. The Guggenheim Museum by Frank Lloyd Wright was controversial at the time for its unique
- (A) unconventional form
(B) organic form
(C) fluid form
(D) spiral form
47. The Hindu temple listed in UNESCO, World Heritage Site, known as 'Black Pagoda' is
- (A) Birla Mandir of Delhi
(B) Meenakshi Temple of Madurai
(C) Jagannath Temple of Puri
(D) Sun Temple at Konark
48. Le Corbusier divided the Chandigarh city into 63 'sectors' and a sector size is around
- (A) 1000 m × 1500 m
(B) 900 m × 1200 m
(C) 800 m × 1200 m
(D) 1200 m × 1600 m
49. 'Skeleton and skin' concept in building design and construction evolved during the
- (A) Roman period
(B) Renaissance period
(C) Gothic period
(D) Greek period
50. As per the National Building Code, the minimum width (in m) of a staircase flight in an education building above 20 m height should be
- (A) 1.0
(B) 1.5
(C) 2.0
(D) 2.5
51. The Development Authorities in India are established under the provision of the
- (A) Municipal Act
(B) 74th Constitutional Amendment Act
(C) Town and Country Planning Act
(D) Land Acquisition Act

- 52.** Which modern construction material did the Roman Architectural Revolution bring forth?
- (A) Copper
(B) Glass
(C) Concrete
(D) Pumice
- 53.** Landscape design of 'Shakti Sthal', the Samadhi of late Prime Minister Smt. Indira Gandhi, was done by architect
- (A) Ram Sharma
(B) Mohammad Shaheer
(C) Ravindra Bhan
(D) Raj Rewal
- 54.** The stone used in the construction of 'Kailasa' temple at Ellora is
- (A) marble
(B) basalt
(C) limestone
(D) sandstone
- 55.** Horizontally wedge-shaped treads in stairways are termed as
- (A) stringers
(B) winders
(C) scotia
(D) newel
- 56.** The correct chronological order of the architecture movement is
- (A) Roman, Romanesque, Gothic, Baroque, Renaissance
(B) Romanesque, Roman, Renaissance, Gothic, Baroque
(C) Roman, Romanesque, Gothic, Renaissance, Baroque
(D) Romanesque, Roman, Baroque, Gothic, Renaissance
- 57.** Select the place which has adopted the 'star pattern' of the French Garden in the design of its urban form.
- (A) Versailles
(B) Washington DC
(C) Islamabad
(D) Jaipur
- 58.** As per the Solid Waste Management Rules 2016 (the Ministry of Environment, Forest and Climate, Government of India), select the correct statement.
- (A) 'Dry waste' means waste other than biodegradable waste and inert street sweepings.
(B) 'Combustible waste' means biodegradable, recyclable, reusable and hazardous solid waste having maximum calorific value of 800 kcal/kg.
(C) 'Domestic hazardous waste' includes expired medicine, CFL bulbs and discarded paint drums.
(D) 'Biodegradable waste' means any inorganic material that cannot be degraded by micro-organisms into simpler stable compounds.

59. Which of the following is **not** stipulated as an obligatory function of the Urban Local Bodies as per the 12th Schedule of the Indian Constitution?
- (A) Urban poverty alleviation
 (B) Promotion of cultural, educational and aesthetic aspects
 (C) Special measures for disaster mitigation
 (D) Prevention of cruelty to animals
60. Which type of temporary supporting structure can be used in case of rebuilding the lower part of a load-bearing wall at ground floor above plinth level?
- (A) Dead shore
 (B) Pit underpinning
 (C) Flying shore
 (D) Needle scaffolding
61. Match the features in Group—I with the corresponding software tools in Group—II :
- | <i>Group—I</i> | <i>Group—II</i> |
|---------------------------------|-----------------|
| a. Raster Graphics Editing | 1. Open Studio |
| b. Energy Modelling | 2. GIMP |
| c. Visual Programming Interface | 3. STAAD |
| d. Structural Analysis | 4. Grasshopper |
| | 5. Radiance |
- (A) a—3, b—1, c—2, d—5
 (B) a—2, b—1, c—4, d—3
 (C) a—1, b—4, c—5, d—2
 (D) a—2, b—5, c—1, d—3
62. What is the smallest entity of raster data used in GIS?
- (A) Line
 (B) Pixel
 (C) Point
 (D) Polygon
63. As per the Census of India 2011, 'Nagar Panchayat' refers to
- (A) rural area surrounded by a growing city
 (B) urban area within a Panchayat
 (C) rural area adjacent to a Nagar
 (D) urban area with a statutory local government
64. Champalimaud Centre of the Unknown in Lisbon, Portugal is designed by Indian architect and planner
- (A) Achyut Kanvinde
 (B) B. V. Doshi
 (C) Uttam Jain
 (D) Charles Correa
65. Where did post-modern architecture start?
- (A) USA
 (B) England
 (C) Germany
 (D) France

- 66.** What is Indo-Saracenic architecture also known as?
- (A) Indo-Gothic
 - (B) Mughal-Gothic
 - (C) Neo-Mughal
 - (D) All of the above
- 67.** Louis Kahn's design at IIM Ahmedabad was not just ornamental and the plan demonstrates a rigid order in a/an _____ according to different functions.
- (A) pattern
 - (B) hierarchy
 - (C) form
 - (D) axis
- 68.** A tie in roof truss is a
- (A) tension member
 - (B) torsion member
 - (C) flexible member
 - (D) compression member
- 69.** Uniform seasoning of wood is done by
- (A) vapour seasoning
 - (B) klin seasoning
 - (C) electric seasoning
 - (D) water seasoning
- 70.** Decay of timber caused by alternate wetting and drying is called
- (A) dry rot
 - (B) wet rot
 - (C) foxiness
 - (D) doatiness
- 71.** A sustainable city excelling in renewable energy, extensive bike lane and commitment to carbon neutrality is
- (A) Munich
 - (B) Budapest
 - (C) Copenhagen
 - (D) Vienna
- 72.** Which of the following is a great solution for waste management that cannot be recycled using traditional methods?
- (A) Energy recovery
 - (B) Hyperlooping
 - (C) Solar farming
 - (D) Water conservation
- 73.** The key feature that lies with solar passive design is
- (A) seasonal efficiency ratio
 - (B) orientation of building and window design
 - (C) redevelopment of brownfield sites and stormwater runoff
 - (D) humidity control

- 74.** To make buildings energy-efficient, the building should be oriented with long side facing
- (A) north and south
 - (B) east and west
 - (C) south-east
 - (D) All of the above
- 75.** As per NBC, the permissible angle of incline of the escalator from the horizontal having a vertical rise not more than 6 m shall be up to
- (A) 40°
 - (B) 35°
 - (C) 30°
 - (D) 25°
- 76.** The 'generic city' is an urban phenomenon, that brings to light how new urban trends and typologies can arise from the instability of processes mainly due to flux of capital and workforce channelled in restricted areas, was introduced by the architect
- (A) Mario Botta
 - (B) Daniel Gracia
 - (C) Oscar Niemeyer
 - (D) Rem Koolhaas
- 77.** The concept of 'sustainable design' in architecture is
- (A) designing buildings that blend with the natural surroundings
 - (B) designing buildings that minimize environmental impact and maximize energy efficiency
 - (C) designing buildings that incorporate historical elements and cultural references
 - (D) designing buildings that cater to specific user needs and preferences
- 78.** The monument built by Mughal Emperor Akbar is
- (A) Shalimar Bagh
 - (B) Humayun's Tomb
 - (C) Panch Mahal
 - (D) Moti Masjid
- 79.** Post-modernist architect who designed AT&T Building, New York City and NCPA Building in Mumbai is
- (A) Charles Moore
 - (B) Philip Johnson
 - (C) Frank Gehry
 - (D) Robert Venturi

- 80.** A channel section consists of
- two webs
 - one web and two flanges
 - two flanges
 - two webs and two flanges
- 81.** Minimum diameter of a manhole is
- 500 cm
 - 600 cm
 - 750 cm
 - 800 cm
- 82.** How does rhythm contribute to architectural composition?
- Rhythm establishes a sense of order and movement within a design
 - Rhythm is irrelevant in architectural aesthetic
 - Rhythm only applies to musical compositions, not architecture
 - Rhythm creates chaos in architectural layouts
- 83.** Which of the following buildings is defined by the use of clear, bold shapes like cubes and pyramids, often with an emphasis on functionality and minimalism?
- 'Fallingwater' by Frank Lloyd Wright
 - 'Villa Savoye' by Le Corbusier
 - 'Casa Batllo' by Gaudi
 - 'Heydar Aliyev Center' by Zaha Hadid
- 84.** A wastewater pipe connecting two inspection chambers (IC) is laid at a slope of 1 : 200. The invert level of the starting IC is (-)450 mm. The invert level of the second pit at a distance of 40 m from the first IC is
- (-)650 mm
 - (-)200 mm
 - (-)250 mm
 - (-)550 mm
- 85.** As per urban design principles proposed by Gordon Cullen, 'Rashtrapati Bhavan', New Delhi, is an example of
- serial vision
 - pinpointing
 - occupied territory
 - here and there
- 86.** Match the books in Group—I with their authors in Group—II :
- | <i>Group—I</i> | <i>Group—II</i> |
|--|--------------------------|
| a. <i>Space, Time and Architecture</i> | 1. Bill Hillier |
| b. <i>The Social logic of Space</i> | 2. Christopher Alexander |
| c. <i>Timeless Way of Building</i> | 3. Rob Krier |
| d. <i>Form, Space, and Order</i> | 4. Sigfried Giedion |
| | 5. Francis D. K. Ching |
- a—3, b—4, c—1, d—5
 - a—4, b—3, c—1, d—2
 - a—5, b—4, c—2, d—3
 - a—4, b—1, c—2, d—5

87. Match the heritage conservation charters in Group—I with their focus areas in Group—II :

Group—I

Group—II

- | | |
|-----------------------|--|
| a. Washington Charter | 1. Conservation of historic gardens |
| b. Florence Charter | 2. Conservation of places of cultural significance |
| c. Venice Charter | 3. Authenticity |
| d. Burra Charter | 4. Conservation and restoration of monuments and sites |
| | 5. Conservation of historic towns |

- (A) a—3, b—1, c—4, d—5
(B) a—5, b—4, c—1, d—2
(C) a—5, b—1, c—4, d—2
(D) a—4, b—1, c—3, d—2

88. The ratio of the total floor area inclusive of all the floors to the area of the plot on which building stands is known as

- (A) ground coverage
(B) plot area
(C) floor area ratio
(D) built-up area

89. Who is the architect of the new Parliament of India inaugurated recently?

- (A) Bimal Patel
(B) Rahul Mehrotra
(C) Yogesh Kapoor
(D) Raj Rewal

90. Who discovered the term 'ecosystem'?

- (A) Odum
(B) Elton
(C) Arthur G. Tansley
(D) Clements

91. *Volume Zero* is a film based on the architectural works of

- (A) Peter Eisenman
(B) Charles Correa
(C) Daniel Libeskind
(D) Roger Angers

92. 'Shodhan house', Ahmedabad, was designed by

- (A) Anant Raje
(B) Le Corbusier
(C) Louis I. Kahn
(D) B. V. Doshi

93. What is the purpose of building code variance?

- (A) To enforce stricter regulations on building materials
(B) To grant exceptions to specific code requirements
(C) To provide additional funding for construction projects
(D) To standardize architectural designs

94. The statue of Lord Buddha in Rajgir is in the middle of
- (A) Muchalinda lake
 - (B) Ghora Katora lake
 - (C) Vaitarani Sarovar
 - (D) Power House
95. Which activity of the following can tend to lower the water table?
- (A) Overgrazing
 - (B) Human population growth
 - (C) Soil erosion
 - (D) Overextraction of groundwater
96. 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
97. Which of the following buildings designed by Richard Rogers is famous for exposing functional elements like services and circulation to the exterior of the building?
- (A) London's City Hall
 - (B) Tower of London
 - (C) Lloyd's of London
 - (D) Royal Festival Hall
98. Which principle is concerned with spacing between elements?
- (A) Alignment
 - (B) Proximity
 - (C) Contrast
 - (D) Repetition
99. 'AMRUT', the new scheme by the Government of India, stands for
- (A) Atal Mission for Rejuvenation and Urban Transformation
 - (B) Atal Mission for Renewal of Urban Transformation
 - (C) Atal Mission for Redevelopment and Urban Transportation
 - (D) Atal Mission for Renewal and Urban Transition
100. Which of the following Urban Renewal Projects in India, that caters to the growing urban population, is successful?
- (A) Kaveri Riverfront Development
 - (B) Sabarmati Riverfront Development
 - (C) Mithi Riverfront Development
 - (D) Dahisar Riverfront Development

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ASAR/PDW/II/25/5/50-A

16

T25—65×4