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Question Booklet No.

**QUESTION BOOKLET**

**ARCHITECTURE**

Booklet Series



Roll No.

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(Enter your Roll number in the above space)

**Time Allowed : 2 Hours**

**Maximum Marks : 100**

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**INSTRUCTIONS FOR CANDIDATES**

1. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS QUESTION BOOKLET **DOES NOT** HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR QUESTIONS ETC. IF SO, GET IT REPLACED BY A COMPLETE QUESTION BOOKLET.
2. Please note that it is the candidate's responsibility to encode and fill in the Roll Number and Question Booklet Series Code A, B, C or D carefully and without any omission or discrepancy at the appropriate places in the OMR Answer Sheet. Any omission/discrepancy will render the OMR Answer Sheet liable for rejection.
3. This Question Booklet contains **100** questions. Each question is printed in **English** only. Each question comprises four responses (answers). You will select the response which you want to mark on the OMR Answer Sheet. In case you feel that there is more than one correct response, mark the response which you consider the best. In any case, choose **ONLY ONE** response for each question.
4. You have to mark all your responses **ONLY** on the separate OMR Answer Sheet provided. See Instructions at the backside of the OMR Answer Sheet.
5. **All** questions carry equal marks.
6. Before you proceed to mark in the OMR Answer Sheet the response to various questions in the Question Booklet, you have to fill in some particulars in the OMR Answer Sheet as per instructions mentioned on the OMR Answer Sheet.
7. After you have completed filling in all your responses on the OMR Answer Sheet and the examination has concluded, you should hand over to the Invigilator **only the OMR Answer Sheet**. You are permitted to take away with you the **Question Booklet**, along with candidate's copy of **OMR Answer Sheet**.
8. Sheets for rough work are appended in the Question Booklet at the end.
9. **Penalty for wrong answers :**  
**THERE WILL BE PENALTY FOR WRONG ANSWERS MARKED BY A CANDIDATE AS UNDER.**
  - (i) There are four alternatives for the answer to every question. For each question for which a wrong answer has been given by the candidate, **0.25 mark** assigned to that question will be deducted as penalty.
  - (ii) If a candidate gives more than one answer, it will be treated as a wrong answer even if one of the given answers happens to be correct and there will be same penalty as above to that question.
  - (iii) If a question is left blank, i.e., no answer is given by the candidate, there will be no penalty for that question.

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1. The horizontal imaginary plane perpendicular to the picture plane situated at the eye level of the observer is called
  - [A] image plane
  - [B] ground plane
  - [C] horizon plane
  - [D] central plane
  
2. In AutoCAD, PATCH command is used to
  - [A] join different surfaces together
  - [B] fill gap on the open end of a closed loop of a surface
  - [C] create fillet on sharp surface edge
  - [D] combine objects on different layers
  
3. The time, by which the activity completion time can be delayed without delaying the early completion of preceding activities and early start of succeeding activities, is
  - [A] free float
  - [B] total float
  - [C] interference float
  - [D] slack time
  
4. Which of the following earthquake waves are recorded first on the seismograph?
  - [A] P-waves
  - [B] S-waves
  - [C] Rayleigh waves
  - [D] Love waves
  
5. Earthquakes occur most frequently at
  - [A] plate surface
  - [B] plate boundaries
  - [C] plate vacuum
  - [D] ocean beds
  
6. The number of bricks required for 14 cu.m of brickwork is approximately
  - [A] 6750
  - [B] 7000
  - [C] 7200
  - [D] 6500
  
7. Volatile Organic Compounds (VOCs) are commonly found in
  - [A] cement concrete
  - [B] paints and lacquers
  - [C] glass
  - [D] bricks
  
8. The quantity of non-renewable energy per unit of building material, component or system is called
  - [A] carbon footprint
  - [B] carbon sequestration
  - [C] embodied energy
  - [D] renewable energy
  
9. Heritage and conservation areas are classified under \_\_\_\_ land use category.
  - [A] public and semi-public
  - [B] special area
  - [C] protective and undevelopable
  - [D] recreational

10. The City Beautiful Movement was conceptualised by  
 [A] Le Corbusier  
 [B] Frank Lloyd Wright  
 [C] Daniel Burnham  
 [D] Ebenezer Howard
11. Rich cement mortars are more liable to cracking as compared to lean mortars because rich mortars have the following quality :  
 [A] High strength and low shrinkage  
 [B] Less strength and high shrinkage  
 [C] High shrinkage  
 [D] Less strength
12. The urban open space known for its perspective effects designed by Michelangelo is  
 [A] Piazza del Campo, Siena  
 [B] Piazza del Popolo, Rome  
 [C] St. Peter's Square, Rome  
 [D] Piazza Campidoglio, Rome
13. Which of the following is **not** Kevin Lynch's basic element of a city structure?  
 [A] Node  
 [B] Landmark  
 [C] Water body  
 [D] District
14. Which of the following describes Topiary best?  
 [A] Trimming and cutting of lawn  
 [B] A live bud from a desired plant inserted into host plant  
 [C] Cutting of evergreen shrubs into abstract or geometric shapes  
 [D] Selecting branches to cut for better growth
15. PED-SHED analysis in urban design is used for  
 [A] understanding the transportation networks  
 [B] urban walkability studies  
 [C] understanding the character of an urban environment  
 [D] urban morphology studies
16. Tothing is a construction technique used in  
 [A] wood construction  
 [B] reinforced cement concrete construction  
 [C] steel construction  
 [D] stone construction
17. The ratio of number of habitable rooms in an area to the net area of that area is known as  
 [A] building density  
 [B] occupancy rates  
 [C] accommodation density  
 [D] population density
18. As per URDPFI guidelines, the population size of a neighbourhood is  
 [A] 5000–10000  
 [B] 4000–10000  
 [C] 5000–15000  
 [D] 10000–20000
19. Which one of the following sites would be most suitable to achieve a sustainable site for a project?  
 [A] Greenfield site  
 [B] Farm land  
 [C] Grass land  
 [D] Brown field

- 20.** The minimum width required for a horizontal circulation space for the simultaneous movement of ambulant person and independent wheel chair user is
- [A] 1200 mm  
[B] 1500 mm  
[C] 1800 mm  
[D] 2000 mm
- 21.** Which of the following architectural styles is adopted in Rashtrapati Bhavan, New Delhi?
- [A] Post-modern style  
[B] International style  
[C] Indo-saracenic style  
[D] Vernacular style
- 22.** The system of valves and pipework which are kept permanently charged with water for firefighting, is known as
- [A] double tapped bushing  
[B] dry riser  
[C] hydro-pneumatic system  
[D] wet riser
- 23.** A 60 W lamp has a luminous efficacy of 40.67 lumens/watt. The luminous flux emitted by the lamp is
- [A] 2440 lux  
[B] 2440 lumens  
[C] 150 lumens  
[D] 150 lux
- 24.** The observations made over the same area on different dates to monitor the ground features are
- [A] temporal resolution  
[B] radiometric resolution  
[C] spatial resolution  
[D] spectral resolution
- 25.** In GIS, the process used for modifying map features to make them clear at a reduced scale is known as
- [A] database generalisation  
[B] cartographic generalisation  
[C] topographical encoding  
[D] data filtering
- 26.** Which of the following is *not* included in Intelligent Transport System?
- [A] Chicanes  
[B] Real time parking management  
[C] Variable speed limits  
[D] Collision avoidance system
- 27.** The command DDEDIT in AutoCAD permits to edit
- [A] polylines  
[B] blocks  
[C] texts  
[D] surfaces
- 28.** A room is 5 m × 4 m with 20 cm thick wall around. The estimate of wall length by centreline method, is
- [A] 18 m  
[B] 18.8 m  
[C] 19.6 m  
[D] 18.4 m
- 29.** The index, which correlates the combined effect of air temperature, relative humidity and wind velocity on human beings, is known as
- [A] design temperature  
[B] effective temperature  
[C] dew-point temperature  
[D] globe temperature

- 30.** A device that converts sound pressure into electrical energy is  
[A] microphone  
[B] amplifier  
[C] equalizer  
[D] speaker
- 31.** The time taken for a sound level to decay by 60 dB is  
[A] echo time  
[B] delay time  
[C] reverberation time  
[D] transient time
- 32.** In the two-pipe system of drainage in buildings, the discharge from the waste pipe is connected to the building drain through  
[A] gully trap  
[B] silt trap  
[C] floor trap  
[D] grease trap
- 33.** The number of vehicles crossing a section of road per unit time at any selected period is called  
[A] traffic volume  
[B] traffic density  
[C] traffic capacity  
[D] basic capacity
- 34.** Who was associated with the planning of New Delhi?  
[A] Le Corbusier  
[B] Patrick Geddes  
[C] Doxiadis  
[D] Edwin Lutyens
- 35.** The data which is already collected for some other purpose and available for the present study, is  
[A] primary data  
[B] first-hand data  
[C] secondary data  
[D] tertiary data
- 36.** The haphazard outgrowth of cities, mixing land-use in unplanned ways is called  
[A] strip cities  
[B] megalopolis  
[C] urban agglomeration  
[D] urban sprawl
- 37.** The Central Government scheme for providing infrastructure in urban areas is  
[A] MGNREGA  
[B] AMRUT  
[C] PMKVY  
[D] PMGAY
- 38.** The expansion of buildings along the sides of the main roads is called as  
[A] ribbon development  
[B] concentric development  
[C] satellite growth  
[D] scattered development



39. Planning document for the physical, social, economic and political framework for the city, which greatly improves the quality of people living in urban areas is termed as
- [A] special purpose plan  
[B] local area plan  
[C] development plan  
[D] regional plan
40. A heating and/or cooling system in which the flow of the refrigerant can be varied according to the load is
- [A] hydronic system  
[B] variable refrigerant flow system  
[C] mixed mode system  
[D] balanced system
41. The average time taken by a single lift to make a trip from the main terminal back to the main terminal, starting from the time the car doors open at the main terminal until the car doors re-open at the main terminal after serving all demands along the way is known as
- [A] passenger average waiting time  
[B] nominal travel time  
[C] round trip time  
[D] passenger average transfer time
42. The residential place for Buddhist monks is
- [A] Stupas  
[B] Viharas  
[C] Chaityas  
[D] Stambhas
43. Which of the following is a deep foundation?
- [A] Strip  
[B] Isolated  
[C] Grillage  
[D] Buoyancy rafts
44. Which of the following is **not** a type of shoring?
- [A] Raking  
[B] Flying  
[C] Underpinning  
[D] Dead
45. Which of the following is **not** a land assembly technique as per URDPFI guidelines?
- [A] Land acquisition  
[B] Land renting  
[C] Land reservations  
[D] Guided land development

46. Name the material that is used to make sure that no moisture leaks in those areas of a roof that are particularly vulnerable to water penetration.

[A] Dampers

[B] Wall plate

[C] Collar

[D] Flashing

47. Which among the following is referred to by Jane Jacob's term 'eyes on the street'?

[A] Maintaining a history of the city, by providing art and culture icons on the streets to enable people to relive its history through the eyes of others

[B] Continuous use of the streets to create a safety for both strangers and residents, clearly distinguishing what is public vs private space

[C] Technology mounted on buildings of varying ages and sizes to monitor activity on the street and to create a neighbourhood watch to alert enforcement authorities

[D] People living in high-rise buildings that exist in dense urban settings are required to watch their streets as part of their volunteering in the community

48. Which among the following is the first garden city designed by Raymond Unwin and Barry Parker?

[A] Welwyn

[B] Windsor

[C] Hampstead

[D] Letchworth

49. What is meant by Pietra Dura?

[A] It was a landscaping technique used by the Romans

[B] It was a technique for the inlay of precious stones and gems on stone walls

[C] It was a technique used for placing shrubs and herbs in Japanese gardens

[D] It was a landscaping technique used by the Greeks

50. V7 concept given by Le Corbusier refers to

[A] neighbourhood planning

[B] housing typologies

[C] hierarchy of roads

[D] architectural concept

51. The science dealing with human settlement is termed as

[A] biophilia

[B] ekistics

[C] anthropology

[D] ecumene



52. In a mono-centric urban model, land rent is expected to
- [A] diminish as one moves towards the center
  - [B] diminish as one moves away from the center
  - [C] remain constant across the whole urban area
  - [D] be unrelated with distance from center
53. Name the architect of Guggenheim Museum in Bilbao, Spain.
- [A] Louis Khan
  - [B] Frank Gehry
  - [C] Le Corbusier
  - [D] Renzo Piano
54. Water pollution in rivers is measured by the amount of dissolved
- [A] oxygen
  - [B] chlorine
  - [C] nitrogen
  - [D] carbon dioxide
55. 'Skeleton and Skin' concept in building design and construction was evolved during the
- [A] Roman period
  - [B] Gothic period
  - [C] Renaissance period
  - [D] Greek period
56. Hip roof is formed by surfaces sloping in
- [A] one direction
  - [B] two directions
  - [C] three directions
  - [D] four directions
57. The unit for measuring sound absorption in a room is
- [A] sabin
  - [B] phon
  - [C] decibel
  - [D] hertz
58. Which of the following is generally used as circulating fluid in freezing climates?
- [A] Liquid carbon dioxide
  - [B] Water
  - [C] A mixture of propylene glycol and water
  - [D] Liquid nitrogen
59. The temporary framework known as \_\_\_\_ is useful in construction, demolition, maintenance or repair works.
- [A] grouting
  - [B] scaffolding
  - [C] shoring
  - [D] underpinning

60. The coefficient of performance of a window AC is \_\_\_\_\_ that of domestic refrigerator.

- [A] lower than
- [B] equal to
- [C] more than
- [D] two times

61. Split AC indoor unit consists of

- [A] evaporator, blower and air handling units with fan
- [B] evaporator coil, blower and capillary water lines to promote cooling
- [C] evaporator coil, blower, motor, air filter, control panel, supply and return air grills
- [D] evaporator coil, air filters, control panel, capillary tubes, supply air grills

62. The principle of Eminent Domain is the power to restrict exercise of rights in land through

- [A] zoning and environmental laws
- [B] controlling land use
- [C] acquiring and taking possession of property in order to promote public interest
- [D] retaining land use

63. Which of the following denotes a housing sector development scheme?

- [A] HRIDAY
- [B] AMRUT
- [C] PMAY
- [D] SBMC

64. GIS captures and analyses

- [A] spatial and demographic data
- [B] spatial and geographic data
- [C] geographic and demographic data
- [D] spatial, demographic and geographic data

65. A method for forecasting future population based upon the survival of the existing population and the births that will occur is

- [A] migration and natural increase method
- [B] ratio method
- [C] cohort-survival method
- [D] matrix method

66. By 'spatial data', we mean data that has

- [A] complex values
- [B] positional values
- [C] graphic values
- [D] decimal values

67. Interpolation is made possible by  
 [A] spatial auto-correction  
 [B] spatial autocorrelation  
 [C] thematic auto-correction  
 [D] thematic autocorrelation
68. Widening of the roads on curves in hilly region, is done  
 [A] on the external side  
 [B] on the internal side  
 [C] on the external as well as internal sides  
 [D] more on the external and less on the internal side
69. The minimum width of a wheelchair accessible toilet is  
 [A] 1200 mm  
 [B] 1500 mm  
 [C] 1300 mm  
 [D] 1400 mm
70. What is the standard size of tread and riser?  
 [A] 300 mm, 150 mm  
 [B] 450 mm, 200 mm  
 [C] 600 mm, 200 mm  
 [D] 400 mm, 100 mm
71. Which of the following is **not** a part of disaster resistant building?  
 [A] Shear Wall  
 [B] Glass Windows  
 [C] Cross Bracing  
 [D] Steel plate wall system
72. Three typologies of temporary shelters are  
 [A] assembly, construction, rental  
 [B] Ad hoc, community, resistance  
 [C] ammunition, cables, rabid  
 [D] assuring, cabinets, rampant
73. “\_\_\_\_\_ meets the needs of the present, without compromising the ability of future generations to meet their own needs.”  
 [A] Sustainable development  
 [B] Future development  
 [C] Marginal development  
 [D] Soft development
74. Which of the following materials when manufactured, emits the highest CO<sub>2</sub>?  
 [A] Plywood  
 [B] Glass  
 [C] Metal  
 [D] Cement
75. Placing a skylight in which direction will give constant light throughout the day?  
 [A] East  
 [B] North  
 [C] West  
 [D] South

- 76.** The hi-line in New York is a great example of urban space. Before renovation, what kind of a space was it?
- [A] Abandoned railway line  
[B] Abandoned warehouse  
[C] Abandoned bridge  
[D] Abandoned plaza
- 77.** Garden city concept was based on what principle?
- [A] Combining green landscape in rural areas  
[B] Combining the town with the countryside  
[C] Locating amenities within 5 mile radius  
[D] Dividing entire cities in sectors
- 78.** Calculate the equivalent runoff coefficient for a site of  $40\text{ m} \times 80\text{ m}$ , which is covered by 25% wooden area, 50% lawn area and 25% concrete area. The runoff coefficient is 0.15 for wooden area, 0.10 for lawn area and 0.95 for concrete area.
- [A] 0.325  
[B] 3.077  
[C] 3.25  
[D] 0.307
- 79.** Urban density establishes a relationship between which two elements?
- [A] People and buildings  
[B] Green land and buildings  
[C] People and green land  
[D] Buildings and cities
- 80.** The striking feature of Mughal Gardens was
- [A] varying heights  
[B] symmetry  
[C] flowers  
[D] site context
- 81.** Expansion joints in masonry walls are provided if length exceeds
- [A] 10 m  
[B] 20 m  
[C] 30 m  
[D] 40 m
- 82.** Advances in technology led to the development of \_\_\_\_ cities.
- [A] Eco  
[B] Hybrid  
[C] Smart  
[D] Satellite
- 83.** The idea of community living exists around many cultures in India. Which of the following is **not** a type of community housing?
- [A] Chawls  
[B] Pol Houses  
[C] Gated societies  
[D] Hi-rise buildings
- 84.** As per NBC, the minimum distance between fan blades and the ceiling should be about
- [A] 0.10 m  
[B] 0.20 m  
[C] 0.05 m  
[D] 0.30 m

85. Which of the following is **not** a requirement for fire exit?

- [A] Entrance to the fire escape shall be separated and remote from the internal staircase
- [B] The route to fire escape shall be free of obstructions at all times except the doorway leading to the fire escape which shall have the required fire resistance
- [C] Fire escape shall be constructed of non-combustible materials
- [D] Fire escape should be located in the centre of the building

86. A crucial factor to design sprinkler system is

- [A] height
- [B] windows
- [C] flooring
- [D] furniture

87. Flying buttresses are part of which time period?

- [A] Greek
- [B] Gothic
- [C] Roman
- [D] Pre-historic

88. For longer seating, the most comfortable position for the leg is when knee is bent at about \_\_\_\_ degree.

- [A] 25
- [B] 35
- [C] 45
- [D] 55

89. Which of the following is **not** a type of Vault?

- [A] Cloister
- [B] Groin
- [C] Barrel
- [D] Coffered

90. Hagia Sophia is an example of \_\_\_\_ period.

- [A] Romanesque
- [B] Byzantine
- [C] Greek
- [D] Renaissance

91. The word Renaissance translates to \_\_\_\_ which marked the transition from middle ages to modern world.

- [A] rebirth
- [B] restructure
- [C] resurrect
- [D] revolutionise

92. In which of the following models does the private partner own the revenue as well as the risk associated with the project for a limited period of time?

- [A] Build Own Operate (BOO)
- [B] Design Build Finance Operate (DBFO)
- [C] Build Own Operate Transfer (BOOT)
- [D] Design Bid Build (DBB)

- 93.** What is Frieze?
- [A] Decorative part of column  
 [B] Horizontal band on top of column  
 [C] Start of the column  
 [D] Decorative projection of top of a wall
- 94.** Oculus is found in which structure?
- [A] Hagia Sophia  
 [B] Pantheon  
 [C] Stonehenge  
 [D] Temple of Amon
- 95.** The foundation in which a cantilever beam is provided to join two footings, is known as
- [A] strip footing  
 [B] strap footing  
 [C] combined footing  
 [D] raft footing
- 96.** A wall constructed to resist the pressure of an earth filling is called
- [A] retaining wall  
 [B] breast wall  
 [C] buttress  
 [D] parapet wall
- 97.** The columns 50 cm × 50 cm and 60 cm × 60 cm carry 80 tonnes and 120 tonnes of loads respectively. The centre to centre distance between columns is 5.00 m. The permissible bearing capacity of the soil is 20 tonnes/m<sup>2</sup>. If the footing is not to project more than 25 cm beyond the outside of the smaller column, pick up the correct design parameters of the footing from the following :
- [A] Distance of CG of the loads from the smaller column = 3.00 m  
 [B] The length of the foundation slab = 7.00 m  
 [C] Area of footing slab = 11.00 m<sup>2</sup>  
 [D] All of the above
- 98.** The window which is provided on a sloping roof of a building, is called
- [A] lantern window  
 [B] dormer window  
 [C] louvered window  
 [D] rash window
- 99.** The process of making the background rough before plastering is
- [A] dubbing  
 [B] hacking  
 [C] blistering  
 [D] peeling
- 100.** The art of bringing the floor to a true level surface is called
- [A] topping  
 [B] bedding  
 [C] screeding  
 [D] pouring



**SPACE FOR ROUGH WORK**



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