

Ph.D. Entrance Examination

Discipline: Architecture

Max Marks-50

1. In case of residential apartments, the effective floor area available for use within an apartment, is known as

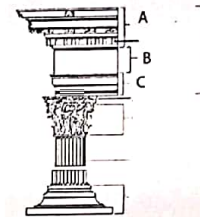
- A. Carpet Area
- B. Built-up Area
- C. Plinth Area
- D. Super Built-up Area

2. One ECS requires --- sqm area for parking in basement.

- A. 28
- B. 32
- C. 23
- D. 27

3. In the given figure, what part of the capital is letter A?

- A. Cornice
- B. Dentils
- C. Frieze
- D. Architrave



4. The width of one lane of multilane road in Urban area as per IRC codes is

- A. 3.25m
- B. 3.75m
- C. 3.50m
- D. 3.00m

5. Who design the interlocking thin shell, shark like concept that can be seen on the shore of Australia?

- A. Santiago Calatrava
- B. Jorn Utzon
- C. Norman Foster
- D. Michael Graves

6. As per CPWD handbook of barrier free and accessibility 2014, Govt of India, the minimum length of a straight ramp in metre to raise a wheel chair to the plinth of 600mm is:

- A. 7.2
- B. 6

- C. 4.8  
D. 9
7. 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
8. A slump test is performed on concrete used in a building slab. The concrete slumps 25mm during the test. What conclusions can be drawn about the concrete that this sample is from?  
 A. **This concrete is rigid and may not be very workable.**  
B. This concrete slumps within the tolerable range and should have good stiffness and workability.  
C. This concrete is not rigid enough and may be too soft to be properly workable.  
D. The slump test is no longer used to gauge the stiffness and workability of concrete.
9. Plywood has the advantage of  
A. Greater tensile strength in longer direction  
B. Greater tensile strength in shorter direction  
 C. **Same tensile strength in all directions**  
D. None of the above
10. Gantt Chart DOES NOT provide information about  
A. List of Jobs  
B. Duration of Jobs  
 C. **Interdependency of Jobs**  
D. Progress of Work
11. The point of contraflexure is the point where the  
A. Shear force changes its sign  
B. Deflection is zero  
 C. **Bending moment changes its sign**  
D. Torque is zero
12. The load on a RCC column is 150KN. The soil bearing capacity is 80KN/m<sup>2</sup> Assuming a factor of safety of 1.2, the side of a square column footing is  
 A. **1.50meter**  
B. 1.25meter  
C. 1.22meter  
D. 1.75meter

13. Golden Gate Bridge is an example of
- A. cantilever bridge
  - B. Truss bridge
  - C. **A suspension bridge**
  - D. None of the above
14. "Mushroom column" is typical feature of:
- A. Pantheon, Rome
  - B. Parthenon, Athens
  - C. Crystal Building, New York
  - D. **Johnson wax building, Racine**
15. Black cotton soil is unsuitable for foundations because its
- A. Bearing Capacity Is Low
  - B. Permeability Is Uncertain
  - C. Particles Are Cohesive
  - D. **Property to undergo a volumetric change due to variation of moisture content**
16. Identify which is NOT a green building rating system
- A. LEED
  - B. CASBEE
  - C. **ENERGY BUILD**
  - D. BREEAM
17. The concentric circles in a solar chart represent
- A. **Azimuth angle**
  - B. Altitude angle
  - C. Horizontal shadow angle
  - D. Vertical shadow angle
18. GRIHA is a rating for green buildings given by
- A. The energy research institute
  - B. **Development alternatives**
  - C. Bureau of energy efficiency
  - D. Ministry of power
19. Which is not a part of Energy Audit defined as per the Energy Conservation Act, 2001
- A. Monitoring and analysis of energy use
  - B. **Ensuring implementations of recommended measures followed by review**
  - C. Submission of technical report with recommendations
  - D. Verification of energy use

20. Which of the following statements regarding ECBC are correct?
- ECBC defines the norms of energy requirements per sq. metre of area taking into account climatic region where building is located
  - ECBC does not encourage retrofit of Energy conservation measures
  - ECBC prescribes energy efficiency standards for design and construction of commercial and industrial buildings
  - One of the key objectives of ECBC is to minimize life cycle costs (construction and operating energy costs)
- A. i & ii  
 B. i & iii  
 C. ii & iii  
 D. i & iv
21. Garden cities were
- A humane response to real problems in industrial cities.
  - Based on segregation of people and functions.
  - A model for modern low-density suburbs.
- D. All of the above.
22. The early modernists said they were motivated primarily by
- The need to make profits
  - The need to serve humane goals
  - The need to make cities more efficient
  - The need to create work for architects
23. Urbanism is important because
- It is in cities that many modern challenges to humanity will play out.
  - The pattern of urban activities affects emissions and pollution.
  - The pattern of urban form affects land use and protection of ecosystems.
- D. All of the above.
24. Total land area for a plotted housing development project is 50.0 hectare, of which area under community facilities, common open spaces and roads are 9%, 10% and 16% respectively. Total number of saleable plots of 250m<sup>2</sup> each will be
- 1100
  - 1300
  - 1500
  - 1700
25. Plan of Mohenjodaro and Medieval Jaipur are based on
- Grid Pattern and Sectoral allocation of Zoning
  - Radial Pattern and grid allocation of zoning
  - Clustered pattern and segregated allocation of Zoning
  - Centralized pattern and composite allocation of zoning

26. Match the cities in Group-I with planning concepts in Group-II

- P. Radburn      1. Linear City  
Q. Broadacre    2. Sectoral Plan  
R. Chandigarh   3. Town of a motor age  
S. Letchworth   4. Garden City

- 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

27. Arrange the following in ascending order of width

- P. Collector Street  
Q. Arterial Road  
R. Local Street  
S. Sub-Arterial Road

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

28. As per Clarence Perry, which of the following is a unit considered to be within a walk-able distance of quarter-mile or 400 m radius?

- A. A Local Area Plan  
B. A City Unit  
C. A Zoning Unit  
 D. A Neighborhood Unit

29. A typical Housing Strategy starts with

- A. Analysis  
B. Action planning  
 C. Study of existing situation  
D. Setting Aims and Objectives

30. A total of 18,000 people are to be accommodated in a plotted housing scheme. For this, a proportion of 2:3:5 is kept between HIG, MIG and LIG plots respectively. Number of HIG plots in the housing scheme, considering 5 persons per dwelling unit and 3 dwelling units per plot, will be

- A. 1200  
B. 120  
 C. 240  
D. 600

31. Super Elevation of a road with pre-determined radius of curvature is primarily dependent on
- A. Altitude
  - B. Soil Bearing Capacity
  - C. Traffic Volume
  - D. Design Traffic Speed
32. National Capital Region is spread over
- A. Union Territory of Delhi
  - B. Delhi and part of Uttar Pradesh
  - C. Uttar Pradesh and Haryana
  - D. Union Territory of Delhi, Part of Uttar Pradesh, Haryana and Rajasthan.
33. The town should be divided into different, so that suitable rules and regulations can be framed for each of them.
- A. Planning division
  - B. Planning units
  - C. Sectors
  - D. Land use zones.
34. Remote sensing techniques make use of the properties of \_\_\_\_\_ emitted, reflected or diffracted by the sensed objects
- A. Electric waves
  - B. Sound waves
  - C. Electromagnetic waves
  - D. Wind waves
35. Government of India's urban development program 'HRIDAY' stands for
- A. Heritage Rejuvenation Implementation Development Aayog Yojana
  - B. Heritage Review Implementation Development Augmentation Yojana
  - C. Heritage City Development and Augmentation Yojana
  - D. Heritage City Improvement and Development Aawas Yojana
36. A Solid Waste landfill is provided with High Density Poly Ethylene (HDPE) lining along the ground surface. This is provided primarily to prevent
- A. Bleaching
  - B. Leaching
  - C. Rodents
  - D. Plant Growth
37. Star Rating of an Air Conditioner is determined by its
- A. Power Consumption
  - B. Energy Efficiency Ratio
  - C. Cooling Capacity

D. Power of Compressor

38. The term 'Working head' in context of water supply system means height of a body of water falling freely under the

- A. force of gravity to acquire a certain velocity
- B. Rate of increase of velocity with respect to distance normal to the direction of flow
- C. Total head with deduction for velocity head or losses

D. **Difference between supply and delivery water levels**

39. The volume of surface runoff is least influenced by

- A. **Existing storm water drainage system**
- B. Amount of rainfall
- C. Site slope
- D. Size of watershed

40. Invert level in Sewer network is

- A. Bottom level of pipe line
- B. Top of Inspection Chamber
- C. **Bottom level of Inspection Chamber**
- D. Top of Pipe line