

KATHMANDU UNIVERSITY  
End Semester Examination  
May, 2024

Marks Scored:

Level : B.Arch.

Year : V

Exam Roll No :

Time: 30 mins.

Course : ARCH 505

Semester : II

F. M. : 10

Registration No.:

Date : April-07-024

SECTION "A"

[20 Q. × 0.5 = 10 marks]

Choose and encircle in the most appropriate option from each set of choices.

- Prerequisite documents for employment application in the architectural firm:
  - Resume and NEC membership
  - Degree certificate, Portfolio, and resume
  - Portfolio and networking
  - a and b
- The NBC 109:1991: Masonry Unreinforced states the slenderness ratio for a load-bearing column shall not exceed:
  - 24
  - 42
  - 12
  - 21
- As per the Architectural Design Requirements states that the maximum area required per occupant (sq.m.) in hospitals and clinics:
  - 12
  - 10
  - 16
  - 14
- According to Nepal National Building Codes, Kathmandu lies in:
  - Seismic Zone A
  - Seismic Zone B
  - Seismic Zone C
  - Seismic Zone C
- As per the Architectural Design Requirements state that the maximum area per occupant (sq.m.) of a Residential Apartment:
  - 18
  - 12
  - 9
  - 11.5
- The NBC 206: 2015 code of Architectural Design Requirements states that the required width of the exit door of 200 occupant load:
  - 1.5 m
  - 1.6 m
  - 1.8 m
  - 1.4 m
- The NBC 206: 2015 code of Architectural Design Requirements states the minimum habitat room area (sq.m.):
  - 6
  - 1.6
  - 1.8
  - 4
- The NBC 206: 2015 Architectural Design Requirements states that based on occupancy, the exit door should be with maximum distance to exist or stairways within a single floor:
  - 30 m
  - 40 m
  - 30 m & 40 m from external corridor
  - 25 m
- The NBC 201:1994 (MRT) Building with reinforced concrete with masonry infill, either length (A) or breadth (B) of the building should not exceed:
  - 15 meters
  - 20 meters
  - 25 meters
  - 30 meters
- The NBC 206: 2015 requires that the ramp for the wheelchair should have a platform for 1.5 meters every vertical height, and the size of the platform should not be less than:
  - 900 mm x 900 mm
  - 1000 mm x 1000 mm
  - 1200mm x 1200 mm
  - 1500 mm x 1500 mm

11. The recommended overlapping zone for the Top Bars of a beam by NBCs is:
  - a. middle 3/4 of the span
  - b. middle 2/3 of the span
  - c. Within 600 mm from the column's face
  - d. middle 1/3 of the span
12. As per NBC 206:2015, the minimum area of openings for natural light in the room for hilly regions:
  - a. 1/8<sup>th</sup> of the room area
  - b. 1/10<sup>th</sup> of the room area
  - c. 1/12<sup>th</sup> of the room area
  - d. 1/16<sup>th</sup> of the room area
13. As per NBC 202:1994 (MRT), the total length of openings in the wall should not be exceeded between consecutive cross-walls in the single-story construction:
  - a. 40% of wall length
  - b. 50% of wall length
  - c. 45% of the wall length
  - d. 33% of the wall length
14. As per the NBC 201: 1994 (MRT), the lateral ties of the column should be tied 600mm above and below the surface of the beam at:
  - a. 100 mm c/c
  - b. 125 mm c/c
  - c. 150 mm c/c
  - d. 175 mm c/c
15. The Guided Land Development Program is carried out under the:
  - a. Kathmandu Valley Development Act
  - b. Land Act 2021
  - c. The Building Act, 2055
  - d. Town Development Act 2045
16. Bylaws for Municipalities and Developing Village Development Committees in Kathmandu Valley 2064 states that voids in a building shall not be considered for Ground Coverage if the size of the void is equal to or more than:
  - a. 1.0 m x 1.0 m
  - b. 1.2m x1.2 m
  - c. 1.5m x 1.5 m
  - d. 1.8 m x1.8 m
17. The NBC 206: 2015 requires that the minimum area per student in the library building be.:
  - a. not less than 2.4 sq.m.
  - b. not less than 3.5 sq.m.
  - c. not less than 2.5 sq.m.
  - d. not less than 4.2 sq.m.
18. If you are designing a building in a site of 8 Annas with bylaws of coverage 70% and FAR 3.5, but you could fulfill all the requirements within 1740.0 sq.ft. in a floor, then you'll be able to go up to:
  - a. 6.5 storeys.
  - b. 6.0 storeys.
  - c. 5.5 storeys.
  - d. 5.0 storeys
19. As per Kathmandu Valley Bylaws 2064, a Cul-de-sac Road, shorter than 50m in length, shall be established with minimum ROW road width, and the minimum setback for the building will be:
  - a. 3 m ROW and 1 m setback
  - b. 4 m ROW and 2m setback
  - c. 3.5 m ROW and 2 m setback
  - d. 4.5 m ROW and 2.5 m setback
20. As per Kathmandu Valley Bylaws 2064, the permitted construction on both sides of the Manohara River is:
  - a. Min. 20 meters from the edge of the river line
  - b. Min.30 meters from the river line
  - c. Min.35 meters from the edge of the river line
  - d. Min. 40 meters from the river line

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07, April, 2024

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Course : ARCH 505

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F. M. : 40

SECTION "B"

[40 marks]

Attempt *ALL* questions.

1. How does the architecture profession differentiate from others to change society? Define key differences between trade and profession. [6]
2. What kind of services does an architect need to provide a client in different phases of the architectural profession, and how can a strong relationship be built between an architect and client? [6]
3. What are the major career fields for architects? What are the advantages and disadvantages in each sector of architecture career fields? [6]
4. Define the Nepal Engineering Council's Code of Conduct and what factors need to be restructured in the NEC code context, referencing the International Code of Professional Conduct, e.g., RIBA, AIA, and IIA, etc. [6]
5. What are the objectives of Nepal National Building Codes? According to NBC 202: MRT—Load bearing, what are the regulations for placing windows in a 6m (L1) span with a 3m (H1) height of the wall with a door and three openings regarding earthquake resistance? Explain it through the sketches using a section of the window with reinforcement in consideration of earthquake resistance. [7]
6. Write short notes on *ANY THREE* of the following: [3×3=9]
  - a. Define the classification of buildings based on occupancy according to the Nepali National Building Code.
  - b. Differentiate between land pooling and site & services concept.
  - c. Steps to use Kathmandu Metropolitan City Bylaws while designing a building.
  - d. Define procurement process of quality and cost-based selection (QCBS)

