

KATHMANDU UNIVERSITY
End Semester Examination
May/June, 2022

Mark Scored:

Level : B. Arch.

Year : III

Exam Roll No. :

Time: 30 mins.

Course : ARCH 319

Semester : II

F. M. : 10

Registration No.:

Date :

SECTION "A"
[20Q × 0.5 = 10 marks]

Encircle the most appropriate answer.

- Following is the basic character of a portal frame
 - Rigid joint at the base
 - Rigid joint at the apex
 - Rigid Joint between column and beam
 - Interconnected column through rigid joint
- Deep beams receiving small secondary beams while maintaining beam-to-beam connection shall require
 - Same top level
 - Same bottom level
 - To be maintained at the center
 - No level consideration
- Damp proofing of a floor is necessarily required at
 - Ground Floor
 - All intermediate floors
 - Top Floor
 - At all floor and roof levels
- Vertical and horizontal mullions of the modules mate together with the adjoining modules in
 - Composite Panel Cladding
 - Stick Curtain Wall
 - Unitized Curtain Wall
 - Concrete Panel Cladding
- For a concealed grid false ceiling, minimum expansion gap with the wall to be maintained is
 - 15 mm
 - 20 mm
 - 5 mm
 - 8 mm
- Light reinforcement is necessary in
 - Aluminum Partition
 - Glass Block Partition
 - Metal Stud Partition
 - Brick Wall Partition
- Headroom for vehicular ramp designed for light vehicle should not be less than
 - 6'6"
 - 7'6"
 - 8'6"
 - 5'6"
- As per the mandatory rule of thumb in NBC 202, which design consideration is not true
 - Maximum short span is 3.5m
 - Maximum long span is 4.5 m
 - Maximum floor area is 13.5 Sq.M
 - Maximum floor height is 3.5 m
- As per the mandatory rule of thumb in NBC 205, lapping zone for column is
 - H/2 at the middle span of the column
 - H/2 at end span of the column
 - H/3 at the middle span of the column
 - H/4 at the middle span of the column

10. Which of the following joint is provided when concrete is placed at different times for a slabs, beam or column whose span is considerably high?
a. Control Joint b. Expansion Joint c. Construction Joint d. Seismic Joint

Fill in the blanks.

11. Thickness of concrete floors in mid-rise steel structures ranges from to.....mm.
12. is a layer of the ground floor which fills small pockets, pit holes and prevent against capillary action.
13. A curtain wall refers to the method of construction by which the curtain wall is assembled on site, piece by piece.
14. The space where service lines runs in an interstitial false ceiling is known as.....
15. Sole Plate, Studs, Head plate and are the framing elements of a timber/ metal stud partition wall.
16. Relationship between riser and tread while designing a staircase is represented by..... equation.
17. Width and depth of the foundation of a Load Bearing Structure depends on the soil and conditions.
18. In a beam lapping of the bottom bar should be restricted to a region at least mm away from column face.
19. The minimum size of expansion joint iscm for a building structure.
20. Contraction joint / control joint are usually provided through saw cut up-to depth of the slab.

KATHMANDU UNIVERSITY
End Semester Examination
May/June, 2022

Level : B. Arch.
Year : III
Time : 2 hrs. 30 mins.

Course : ARCH 319
Semester : II
F. M. : 40

SECTION "B"

[4 Q. × 4 = 16 marks]

Attempt *ANY FOUR* questions.

1. What are different connections in steel structures? Make neat sketches of Beam-to-Beam connection with same and different sizes of main and secondary beam.
2. What are space frames and portal frames? Mention their usage.
3. What are the usage and properties of false ceiling? Mention different types of false ceiling and make a clear section of interstitial ceiling.
4. What are the requirements of a good partition wall? Make a neat sketch of timber stud partition wall with necessary details.
5. Why joints in concrete necessary? Explain contraction / control joint.

SECTION "C"

[3 Q. × 8 = 24 marks]

Attempt *ALL* questions.

6. Why architects prefer cladding? Explaining different types of curtain wall with necessary construction details.
7. What are the different design requirements for a load bearing masonry structures as per NBC 202? Elaborate your answers based on any masonry structure up to 2 storey high.

OR

Mention various design requirements for Beam and Column design of a framed structure building as per NBC 205.

8. Recommend a design of a staircase for a residential building with stairwell dimension 3.2 m × 3.2 m and the floor-floor height of 2.7 m. Consider appropriate dimensions of riser and tread and maintain circulation space at floor level. Validate your answers if resizing is necessary. Draw Plan and sections of the staircase with appropriate reinforcement details.

