

KATHMANDU UNIVERSITY
End Semester Examination
February/March, 2019

Marks Scored:

Level : B.E.
Year : IV

Course : CIEG 409
Semester : I

Exam Roll No. :

Time: 30 mins.

F. M. : 10

Registration No.:

Date **11: MAR 2019**

SECTION "A"

[20 Q. × 0.5 = 10 marks]

Multiple choice questions (tick the most appropriate answer).

- The type of roof which slopes in two directions with a break in the slope on each side is known as
a. Gable roof b. Hip roof c. Gambrel roof d. Mansard roof
- The term string is used for
a. The underside of a stair
b. Outer projecting edge of a tread
c. A sloping member which supports the steps in a stair
d. A vertical member between two treads
- The lower most horizontal piece of a shutter is known as
a. style b. transom c. sill d. bottom rail
- The window which projects outside a room of a building for admitting more light and air, is known
a. Bay window b. Casement window
c. Lantern window d. Dormer window
- The horizontal projections at head and sill of a door frame which are embedded into the side walls for fixing the frame are known as
a. horns b. holdfasts c. jambs d. rebates
- The process of preparing the wall surface before painting is
a. Knotting b. Priming c. Stopping d. Finishing
- A soaking pit is also termed as
a. Septic tank b. Leech pit c. Manhole d. Soak tank
- When two or more footings are connected by a beam, it is called
a. Beam footing b. Strap footing c. Combined footing d. Mat footing
- Fire is transferred from one floor to another floor mainly through
a. Door b. Windows c. Wall d. Staircase

10. The construction of temporary structure required to support unsafe structure, is called
a. Underpinning b. Scaffolding c. Shoring d. Jacking
11. Hearing loudness of Rustle of leaves, (whisper) is
a. 10 dB b. 20 dB c. 30 dB d. 50 dB
12. The function of king post in a king post truss is
a. To support the frame work of the roof
b. Electromagnetic energy in very specific regions
c. Location based data management tools to assist in the decision making processes
d. Electromagnetic energy in wide regions
13. The maximum number of steps in a flight should generally be restricted to
a. 10 b. 12 c. 15 d. No limit
14. In ordinary residential and public buildings, the damp proof course is generally provided at
a. Ground level
b. Plinth level
c. Water table level
d. Midway ground level and water table level
15. is the most common type of scaffolding and is widely used in the construction of brick work.
a. Suspended scaffolding b. Trestle scaffolding
c. Steel scaffolding d. Single scaffolding
16. The type of footing which is used to transmit heavy loads through steel columns is
a. Raft foundation b. Grillage foundation
c. Well foundation d. Isolated footing
17. The platform at the end of a series of steps, is known as
a. platform b. relief c. rest d. landing
18. Couple close roof is suitable for maximum span of
a. 2.5 m b. 3.5 m c. 4.5 m d. 5.5 m
19. From the point of view of maximum day light, the windows in a room should be located on
a. Eastern side b. Western side c. Northern side d. Southern side
20. The height between two floors is 3.00 m and the riser is 150 mm. Assuming two flights between the floors, the number of treads will be
a. 18 b. 19 c. 20 d. 21

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Time : 2 hrs. 30 mins.

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F. M. : 40

SECTION "B"

(Short answer questions)

Attempt *ANY THREE* questions. Assume suitable data wherever necessary.

1. What are the effects of moisture in building structures? Explain the movement of moisture in building through the capillary action with neat sketch. [1+3]
2. Explain about the location of doors and windows in the building. Draw a labelled diagram of paneled door. [2+2]
3. In a hydropower construction site, if you are assigned to carry out the plastering work in powerhouse, what would be your instructions to the mason? In the next day, how would you confirm that the plastering work done by mason is good to be approved? [4]
4. Write short note on Septic tank. [4]

SECTION "C"

(Long answer questions)

Attempt *ALL* questions.

5. What are the main considerations in design of buildings for all purposes? Explain different types of buildings according to Nepal Building Code NBC 000:1994. [3+6]
6. Design a dog legged RCC stair for a residential building with a staircase of internal dimension of 4.6 m x 2.6 m and 3.0 m floor to floor height. Draw both plan and section to justify your design. [6+3]
7. Draw a typical plan and section of a single storey public building from the data provided below: [10]
 - a. Type: Single Storeyed R.C. Framed Structure
 - b. Plan external dimension (L x B) = 20730 x 12130 mm
 - c. Use: Public purpose, Assembly hall
 - d. Geometric Details:
 - i. Floor to Floor height = 3.2 meters
 - ii. Height of plinth = 0.6 meter above ground level
 - iii. Depth of foundation = 0.72 m below ground level
 - iv. Assume suitable location and dimension for the staircase.
 - e. Specifications for Materials and Building Components:
 - i. Roof: R.C. Slab, flat type with waterproofing course.
 - ii. Walls: Brick Masonry 230 mm thick duly plastered.
 - iii. Concrete: M20 Grade
 - f. Exposure condition: Mild environment

The width of the verandah provided should be 2270 mm. There must be three rooms in a building, one for assembly hall (15770 x 9770) mm and two rooms for office (4270 x 4770) mm. Provide a stage at the assembly hall having a dimension of (5000 x 2500) mm.

