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**PRESIDENCY UNIVERSITY
BENGALURU**

SCHOOL OF ENGINEERING

END TERM EXAMINATION AUGUST-2024

Even Semester: 2023 - 24

Course Code: CIV 6002

Course Name: Building Services and Building Information Modelling

Program & Sem: M.Tech – II Sem

Date: 21 Aug 2024

Time: 9:30 AM to 12:30 PM

Max Marks: 100

Weightage: 50%

Instructions:

- (i) Read the all questions carefully and answer accordingly.
- (ii) Scientific and Non-programmable calculators are allowed

Part A [Memory Recall Questions]

Answer any four questions. Each question carries 5 marks.

(4Qx5M= 20M)

1. Briefly explain the types of fire protection systems (C.O.NO: 1) [Knowledge]
2. What are the various steps one can take to reduce or prevent noise pollution?
(C.O.NO: 1) [Knowledge]
3. What are the various mechanical services provided in high rise buildings?
(C.O.NO: 1) [Knowledge]
4. List the types of lifts / elevators. (C.O.NO: 2) [Knowledge]
5. List the types of escalators (C.O.NO: 2) [Knowledge]
6. List the factors to be considered when designing or commissioning a new lift.
(C.O.NO: 1) [Knowledge]
7. What are the components required for roof top rain water harvesting system?
(C.O.NO: 2) [Knowledge]

Part B [Thought Provoking Questions]

Answer any five questions. Each question carries 10 marks.

(5Qx10M=50M)

8. Water is an essential building service used for washing, cleaning, drinking, cooking and so on. Name the factors influencing the choice of hot water supply systems. Explain briefly types of hot water distribution systems. (C.O.NO: 2) [Comprehension]
9. In high volume public buildings such as Airports building services such as elevators and escalators are required to be provided to aid in quick and efficient movement of people and goods. Briefly explain the functional differences between the two. (C.O.NO: 2) [Comprehension]

10. A warehouse has to be built to store combustible chemicals for a company that specializes in Pyrotechnics. Provide your inputs on materials to be used for construction and the measures to be taken to increase the fire resistance capacity of the proposed warehouse.

(C.O.NO: 2) [Comprehension]

11. A movie theater is a space designed to maximize sound efficiency for the entertainment and enjoyment of the audience. As a building service professional identify the common acoustic defects to be overcome in these spaces.

(C.O.NO: 2) [Comprehension]

12. Indian Government has now made it mandatory to install Rain Water Harvesting system in new buildings. How will you explain the pros and cons of the system to a client convincingly?

(C.O.NO: 2) [Comprehension]

13. Explain the importance of fire safety and different types of fire detection systems.

(C.O.NO: 1) [Comprehension]

Part C [Problem Solving Questions]

Answer any two questions. Each question carries 15 marks.

(2Qx15M=30M)

14. Green building rating systems are required for proper classification of energy efficiency achieved by them and its impact on the environment. Simply put it's a measure of sustainability of a building.

(a) Explain LEED and GRIHA rating system for a green building.

(b) List green building materials and explain various methods to achieve energy efficiency in a building.

(C.O.NO: 2) [Comprehension]

15. As a building service professional you are asked to design a single storey 2 BHK home in a 60x40 plot with required amenities to support natural lighting and ventilation. Draw the plan and also show electrical layout.

(C.O.NO: 1) [Comprehension]

16. Draw floor plan for a single storey commercial food joint housing a kitchen, dining area, pantry room and rest room. Give electric layout for the same.

(C.O.NO: 1) [Comprehension]