



**TERTIARY AND VOCATIONAL EDUCATION COMMISSION**  
**COMMON WRITTEN EXAMINATION – 2020/ 2021**



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<b>Higher National Diploma in Quantity Surveying</b>		
<b>NVQ Level 06 –Semester I</b>		
<b>Construction Technology II</b>	<b>F45C002M16</b>	<b>Three Hours</b>
<b>Answer any five (05) questions only</b>		

**QUESTION -01**

- (a)- Briefly describe the five major requirements of building services for modern buildings. (5 Marks)
- (b)- State three impacts of M & E systems in building constructions. (3 Marks)
- (c)- Explain, how can be the “Living standards of the society” affect for the complexity of the building services? (4 Marks)
- (d)- What are the senses of fire detection? (3 Marks)
- (e)- Quantity Surveyors should have understanding and knowledge on the building services. Discuss, highlighting its influence in a project to perform duties of Quantity Surveyors. (5 Marks)

**QUESTION -02**

- (a)- State at least four (04) precautionary measures on electrical safety at workplace. (2 Marks)
- (b)- What are the two (02) two main types of electrical wiring, commonly used in industry? Express by a labeled diagram and state what conditions/ places, they are best used. (6 Marks)
- (c)- Express the abbreviations mentioned below and describe how important are they in electrical systems.
  - MCB
  - RCCB
  - DB(3 Marks)
- (d)- Name and discuss the differences of four types of electrical wiring system (*not types*) generally used in the industry. (4 Marks)
- (e)- Express the purpose of alternative electrical power sources for buildings such as Hotel/ Hospitals/ Education institutes etc. Name four (04) types of electrical generators and give examples for appropriate places of their use. (5 Marks)

**QUESTION -03**

- (a)- What is “Window type air conditioner”? What are the advantages and disadvantages of using them in Sri Lankan context? (4 Marks)
- (b)- What do you mean by “cooling agent” in air conditioning systems? State two (02) types of cooling agents. Draw a neat diagram of the process of air-conditioning. (6 Marks)
- (c)- Provide suggestions for suitable air conditioning system/s to the 40ft x 200ft x 10ft (12m x 60m x 3m) sized conference hall. Justify your answer. (4 Marks)



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- (d)- Draw a sketch of a “One pipe (single stack) system” of drainage disposal for four storied building. Consider that each floor has two wash basins, two water closets and one kitchen sink. You may make any other assumptions if required. (6 Marks)

**QUESTION -04**

- (a)- Explain the differences between Elevators and Escalators in detail. (4 Marks)
- (b) – What extend of maximum rise is possible for the escalators in general condition? (2 Marks)
- (c)- What do you mean by “Pull” and “Push” types of elevators? Give one example for each. (4 Marks)
- (d) - State four (04) safety measures included in elevators. (4 Marks)
- (e)- State four (04) safety measures included in escalators. (4 Marks)
- (f) - Name two types of “Hospital type elevators”. (2 Marks)

**QUESTION -05**

- (a)- Plumbing work is involved in a wide range of service areas such as water supply; Select four other systems and briefly explain them with examples. (4 Marks)
- (b) - Name at least four (04) components of “Sanitary Drainage System” and describe the role of each component which helps for smooth functioning of a drainage system. (4 Marks)
- (c)- A two storied house is supplied with water from the city main supply line and the distribution is through an overhead tank located on the roof top. Draw a neat sketch of the supply and distribution and name the components. Select two components and describe their functions. (5 Marks)
- (d) - Explain three (03) types of hot water systems used in the construction industry. Select two of them and discuss the advantages and disadvantages of them. (7 Marks)

**QUESTION -06**

- (a)- Describe, what is fire and four (04) causes for unwanted fire occurrences. (4 Marks)
- (b) - Describe two main systems considered under “Fire Systems” in an industry? (2 Marks)
- (c)- What is the type of fire detector we are using at the “Incipient Stage” of the fire? Express the function of it. (you are free to use suitable diagrams/ sketches). (4 Marks)
- (d) - Briefly explain the ‘fire extinguishment theory’ and provide one (01) example for each five (05) fire classes. (6 Marks)
- (e)- Describe advantages of having fire training programs for building use and safety maintenance. (4 Marks)