



DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

UNIVERSITY EXAMINATIONS 2021/2022 ACADEMIC YEAR THIRD YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR THE DEGREE BACHELOR OF TECHNOLOGY IN BUILDING CONSTRUCTION

TBD 4208: BUILDING SERVICES AND MAINTENANCE/
TBD 3105: BUILDING SERVICES AND CONTROL SYSTEMS

DATE: 22ND APRIL 2022

TIME: 8:30-10:30AM

INSTRUCTIONS

Question one is compulsory

Answer question one and any other two.

QUESTION ONE - [30 MARKS]

- (a) Giving examples in each case, distinguish between building services and building maintenance. (4 marks)
- (b) Briefly describe any three types of building maintenance workers (6 marks)
- (c) State at least three components of a good HVAC system. (3 marks)
- (d) Distinguish between direct and indirect types of heating systems (2 marks)
- (e) State and explain the four fundamental components of any heating system. (12 marks)
- (f) State at least three reasons for the provision of ventilation on structures. (3 marks)

QUESTION TWO - [20MARKS]

- (a) State and briefly explain any four types of new technologies for preventive maintenance and diagnosis. (12 marks)
- (b) there are basically two types of ventilations applied to dwellings i.e, natural and mechanical means. Briefly explain each one of them. (8 marks)

QUESTION THREE- [20MARKS]

- (a) Discuss the following three methods of fire prevention and control.
 - (i) Hose reel installations (4 marks)

- (ii) Gas extinguishers (4 marks)
- (iii) Smoke, fire and heat detectors (4 marks)
- (b) State three advantages and two disadvantages of preventive maintenance. (5 marks)
- (c) Under health and safety at work regulations, state three duties of an employer in regard to health and safety. (3 marks)

QUESTION FOUR - [20MARKS]

- (a) Write short notes under the following headings,
- (i) solid fuel direct systems (4 marks)
- (ii) gaseous fuel direct systems (4 marks)
- (b) Briefly describe the following types of maintenance
- (i) Routine maintenance (3 marks)
- (ii) Preventive maintenance (3 marks)
- (c) State and explain any two methods of improving physical security in a building. (6 marks)

QUESTION FIVE - [20MARKS]

- (a) State and explain any three methods of indirect heat systems (12 marks)
- (b) Define the following terminologies as used in air conditioning.
- (i) Dew point (1 mark)
- (ii) Dry bulb temperature (1 mark)
- (iii) Latent heat (1 mark)
- (iv) Relative heat (1 mark)
- (c) The main cause of electrical accidents on sites are from electrical equipment or lighting, from overhead electric power lines and from underground cables, state at least four checkpoints. (4 marks)