

22649

22232

3 Hours / 70 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Answer each next main Question on a new page.
 - (3) Illustrate your answers with neat sketches wherever necessary.
 - (4) Figures to the right indicate full marks.
 - (5) Assume suitable data, if necessary.
 - (6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE of the following :

10

- (a) State the components of BMS.
- (b) State the application of heating process.
- (c) State the types of controller software used in BMS.
- (d) State the principle of operation of FAS.
- (e) Write the concept of chiller.
- (f) List typical DDC operator.
- (g) Give the function of smoke detector in FAS.

2. Attempt any THREE of the following :

12

- (a) Describe ventilation process and give its application.
- (b) Define :
 - (i) Relative humidity
 - (ii) Dew point temperature
- (c) Explain the concept of camera connectivity.
- (d) Suggest any four required entrance camera specification of Bank. Explain it.



- 3. Attempt any THREE of the following :** **12**
- (a) State the applications of FAS & CCTV system.
 - (b) Draw labelled sketch of AHU. Write routine maintenance activities for AHU.
 - (c) Explain use of Totalizing feature.
 - (d) Describe function of system level controller and zone level controller.
- 4. Attempt any THREE of the following :** **12**
- (a) Write benefits of access control system.
 - (b) Explain the role of BMS automation software.
 - (c) Draw the system architecture of CCTV system. Explain it in brief.
 - (d) Explain Demand limiting in brief.
 - (e) Compare operation level controller and management level controller in BMS.
- 5. Attempt any TWO of the following :** **12**
- (a) Describe Boiler system in HVAC with neat schematic. Suggest the possible unsafe conditions that could occur during its working.
 - (b) Draw Architecture of FAS and explain it.
 - (c) State design consideration and its effect on functional efficiency of building automation system.
- 6. Attempt any TWO of the following :** **12**
- (a) Write types of video management system and explain any one with diagram.
 - (b) List the information management features. Explain use of any two with suitable examples.
 - (c) Explain Humidifying process in HVAC with suitable example using psychometric chart. Assume suitable data.
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