

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE- SEMESTER-VII (NEW) EXAMINATION – WINTER 2020****Subject Code:2171713****Date:28/01/2021****Subject Name:Building Automation****Time:10:30 AM TO 12:30 PM****Total Marks: 56****Instructions:**

1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) What are the different phases of fire? Draw a block diagram of Fire Detection and alarm System **03**  
(b) State the purpose of usage of Closed circuit television (CCTV). **04**  
(c) Draw system architecture of Building Automation System (BAS). Brief about BAS components. **07**
- Q.2** (a) State the advantages and limitations of biometric system: **03**  
(b) How smart card differs from Proximity card. **04**  
(c) Explain in brief AHU and FCU **07**
- Q.3** (a) Explain Building information model **03**  
(b) Explain relays and contacts used in FAS. **04**  
(c) Explain typical air handling unit with basic operation. Also brief about chillers **07**
- Q.4** (a) Explain perimeter protection in detail with its type. **03**  
(b) Differentiate between smart building and Green building. **04**  
(c) Explain working principle and application of different type of Smoke detectors. **07**
- Q.5** (a) Explain the different levels of security systems **03**  
(b) State the different way of authentication process carried out in access control system. **04**  
(c) Explain in detail architecture of IBMS **07**
- Q.6** (a) Brief about different type of output devices of alarm **03**  
(b) Explain in brief about Dome camera and their use **04**  
(c) Write a short note on HVAC system **07**
- Q.7** (a) Explain in brief about EPABX system and its component. **03**  
(b) Draw and Explain the block diagram of access control systems. **04**  
(c) State the component of analog CCTV system and IP based CCTV System. State the difference between NVR and DVR. **07**
- Q.8** (a) Explain working principle and application of different type of Smoke detectors **03**  
(b) Brief about lighting requirement in the smart building **04**  
(c) Explain working principle and application of different type of heat detectors. **07**

\*\*\*\*\*