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**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_\_

**End Semester Examination – Nov/Dec - 2016**

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|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **12EE253** | **Duration :** | **3 hrs** |
| **Sub. Name :** | **Building Automation** | **Max. marks :** | **100** |

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| **Q. No.** | **Questions** | | **Marks** |
| **PART-A(10X1=10 MARKS)** | | | |
| 1. | \_\_\_\_\_\_\_\_\_\_\_ are the physical quantities that need to be measured in HVAC systems. | | (1) |
| 2. | What are the different types of cables used in domestic wiring? | | (1) |
| 3. | A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is an active fire protection device used to extinguish or control small fires, often in emergency situations. | | (1) |
| 4. | Name the mechanical installations required for fire safety systems. | | (1) |
| 5. | Power factor is given by\_\_\_\_\_\_\_\_\_\_\_. | | (1) |
| 6. | Differentiate power and energy. | | (1) |
| 7. | DVR Engine consists of \_\_\_\_\_\_,\_\_\_\_\_\_\_\_\_\_\_\_\_. | | (1) |
| 8. | Mention the types of face recognition algorithms. | | (1) |
| 9. | What is the role of sequence number in TCP? | | (1) |
| 10. | Higher shutter speed results in \_\_\_\_\_\_\_\_\_\_ | | (1) |
| **PART B(5 X 3= 15 MARKS)** | | | |
| 11. | Discuss the data collection procedure for optimal selection of cable. | | (3) |
| 12. | Enumerate the importance of energy saving. | | (3) |
| 13. | Discuss the different conditions at which the alarm signals are required in fire pumps. | | (3) |
| 14. | Write the structure of TCP segment. | | (3) |
| 15. | What is integrated building automation system? | | (3) |
| **PART C(5 X 15= 75 MARKS)** | | | |
| 16. | a. | Summarize the features, characteristics and drawbacks of building automation system. | 10 |
| b. | Mention the basic characteristics to be considered for selecting the cables to automate the building. | 5 |
| (OR) | | | |
| 17. |  | Construct and discuss an automation system for level control with necessary diagrams. | 15 |
| 18. | a. | Discuss about reactive power requirement and power quality issues and its effect on energy consumption. | 10 |
| b. | Draw and explain the working of energy meter. | 5 |
| (OR) | | | |
| 19. |  | Explain the concept of meter networking and discuss in detail about monitoring of energy parameter. Enumerate the merits and demerits. | 15 |
| 20. |  | Construct and explain about an automated fire safety system with necessary diagrams for a library building by properly selecting and placing the fire extinguisher. | 15 |
| (OR) | | | |
| 21. | a. | Explain the process of cable selection, installation guidelines and best installation practices. | 10 |
| b. | Mention the different fire behavior indicators. How will you react based on the different indicators? | 5 |
| 22. |  | Summarize the implementation of a security system for a building using the different biometric features of a human body. | 15 |
| (OR) | | | |
| 23. |  | Explain the concept of video management. Elaborate on CCTV basics, digital video recording and its special features. | 15 |
| 24. | a. | What are the benefits of integrated systems and the challenges faced? | 5 |
| b. | Discuss the complete integrated energy management system of a building. | 10 |
| (OR) | | | |
| 25. | a. | Discuss the complete integrated safety system of a building. | 8 |
| b. | Make a layout of a complete BAS for a highly secure and valuable building. | 7 |

ALL THE BEST