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

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**End Semester Examination – Nov/Dec – 2018**

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| **Code :** | **17BM3017** | **Duration :** | **3hrs** |
| **Sub. Name :** | **HOSPITAL AUTOMATION** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Explain the various methods to maintain the battery. | CO1 | 7 |
| b. | Illustrate the energy conservation techniques used in hospitals. | CO1 | 5 |
| c. | List and explain various power generation sources used in hospital. | CO1 | 8 |
| (OR) | | | | |
| 2. | a. | Elaborate on the requirement of uninterrupted power supply and how renewable energy plays a vital role in it. | CO1 | 10 |
| b. | Give the types of batteries used in hospitals and explain their features. | CO1 | 10 |
|  |  |  |  |  |
| 3. | a. | Hospitals rely on air compressors for most essential services in patient care. – Justify. | CO2 | 6 |
| b. | List the various types of compressors available in industry. With a neat diagram explain the construction and working of the compressor that is used in the hospitals. | CO2 | 14 |
| (OR) | | | | |
| 4. |  | With neat block diagram explain the following air dryer systems  a. Refrigerant Type Dryers.  b. Regenerative Desiccant Type Dryer. | CO2 | 20 |
|  |  |  |  |  |
| 5. | a. | Analyse the hazards that can occur on medical electrical equipment. | CO6 | 14 |
| b. | Explain the application of flow measurement in hospital equipments. | CO5 | 6 |
| (OR) | | | | |
| 6. | a. | Elaborate on the importance of fire safety in hospitals and how it is implemented. | CO6 | 12 |
| b. | List out the prevention mechanism taken in hospital for safety of the patients. | CO6 | 8 |
|  |  |  |  |  |
| 7. | a. | Explain in detail about physiological effects of electricity in patients. | CO6 | 10 |
| b. | Elaborate on the fire safety features that is to be installed in the hospitals. | CO4 | 10 |
| (OR) | | | | |
| 8. | a. | Elaborate on the benefits of piezo-resistive force sensors for medical device applications. | CO4 | 12 |
| b. | List the differences between ON-OFF, PID and Fuzzy Controller. | CO5 | 8 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. |  | The hospitals needs to be a technology driven place in terms of patient care and safety – Justify with a case study. | CO3 | 20 |