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



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

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| **Code :** | **18ME3039** | **Duration :** | **3hrs** |
| **Sub. Name :** | **COMPUTER INTEGRATED MANUFACTURING SYSTEMS** | **Max. marks :** | **100** |

**ANSWER ANY FIVE QUESTIONS (5 x 16 = 80 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Explain the types of Production operations in a typical discrete product manufacturing industry. | CO1 | 8 |
| b. | An industry has designed a new product line and is planning to manufacture this product line. The new line consists of 50 different product types, and each product type is required 5000 units annually. The products average 50 components each, and the average number of processing steps required for each component is 10. All parts will be made in the factory. Each processing step consumes an average time of 60 seconds. Determine (i) how many products, (ii) how many parts, and (iii) how many production operations will be required each year (iv) how many workers will be needed for the plant, if it operates one eight-hour shift for 250 days/year. | CO1 | 8 |
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| 2. | a. | Explain the reasons, features and structures of grouping components using ‘Parts classification and coding systems’. | CO2 | 9 |
| b. | Brief on the Generative CAPP method. | CO2 | 7 |
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| 3. | a. | List any four benefits of MRP systems. | CO3 | 2 |
| b. | Illustrate the three phases of Shop Floor Control (SFC) with a suitable sketch. | CO3 | 12 |
| c. | ‘Data collection terminal available at each workstation is more convenient for workers’ – why? | CO3 | 2 |
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| 4. | a. | Demonstrate the concept of supervisory control with an industrial example. | CO4 | 8 |
| b. | Brief on any two types of non-contact non-optical inspection techniques. | CO4 | 8 |
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| 5. | a. | Elaborate on any four functions of a computer control system in an automated manufacturing system. | CO5 | 10 |
| b. | Explain the AGV unit load-carrier with a neat sketch. | CO5 | 6 |
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| 6. | a. | Brief on the process of identifying business opportunities. | CO1 | 6 |
| b. | Explain the automatic identification system using Barcode technology. | CO3 | 10 |
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| 7. | a. | Elaborate on any four advantages of computer aided quality control. | CO4 | 10 |
| b. | With a neat sketch, brief the LAN configured DNC system. | CO5 | 6 |
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| **COMPULSORY QUESTION (1 x 20 = 20 Marks)** | | | | |
| 8. | a. | Brief any three functions of human labours in a Flexible Manufacturing System. | CO6 | 6 |
| b. | Illustrate head changing FMS and variable mission manufacturing system using suitable sketches. | CO6 | 14 |