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Total Number of Pages : 01

B.Tech  
PEME5307

**6<sup>th</sup> Semester Back Examination 2018-19**  
**COMPUTER INTEGRATED MANUFACTURING**  
**BRANCH : MECH**  
**Time : 3 Hours**  
**Max Marks : 70**  
**Q.CODE : F129**

**Answer Question No.1 which is compulsory and any five from the rest.**  
**The figures in the right hand margin indicate marks.**

- Q1 Answer the following questions: (2 x 10)**
- a) Define automation? State the elements of a automated system?
  - b) State the priciples for automation?
  - c) Define the following terms with respect to a manufacturing system  
(i) Production rate (ii) Plant capacity (iii) utilization and availability
  - d) Differentiate between flexible and fixed automation?
  - e) Give the anatomy of a articulated robot?
  - f) What do you mean by CNC machine tools and how it is different from DNC machine tool?
  - g) What are the advantages and limitations of CAD/CAM technology?
  - h) State the different types of PLC programming languages?
  - i) Name some velocity sensor?
  - j) Why pneumatic actuators are preferred in factory set-up robots?
- Q2 a) Expalin the Automated storage and retrieval system? (5)**  
**b) State the different automation strategies? (5)**
- Q3 a) Discuss the different types of production function. (5)**  
**b) Describe online robot programming? Also state its advantages and limitations? (5)**
- Q4 a) Give a complete classification of CNC machine tools? (5)**  
**b) Explain with a block diagram the implementation of a CAD process on a CAD/CAM system? (5)**
- Q5 a) What are the objectives of computer aided quality control? How do you intehrate computer aided quality control with CAD/CAM? (5)**  
**b) With the help of an example, explain the implementation of Concurrent Engineeringin product development? (5)**
- Q6 a) What is part family classification and coding? State its importance in group technology (5)**  
**b) With the help of a flow chart show the steps in Retrieval type computer added process planning (CAPP)? (5)**
- Q7 What do you mean by Production flow analysis (PFA) of grouping of parts. Give one suitable example and explain the steps involved in PFA? (10)**
- Q8 Write short answer on any TWO : (5 x 2)**
- a) Cellular manufacturing
  - b) Programmable logic controller(PLC)
  - c) NC programming languages
  - d) FMS