MAY 2008

2008 MAHARSHI DAYANAND UNIVERSITY

B.E IIIV SEMESTER REGULAR EXAMINATION

MECHANICAL ENGINEERING

FLEXIBLE MANUFACTURING SYSTEM

TIME : 3 HOUR
MARK : 80

ANSWER ANY FIVE QUESTIONS ALL QUESTIONS CARRY EQUAL MARKS

1.(a) Discuss the evolution of automation in manufacturing.

(b) Discuss important automation stratgies.

(c) What is the importance of buffer storage in automated systems?

2. Discuss the concerns in the design of automated assembly system. Discuss different system with the help of neat sketches.

3. (a) Discuss the concept of composite part. How does it support the process of machine cell design?

(b) Briefly discuss the part classification and cooling systems.

4. (a) In the context of a Flexible manufacturing system discuss different types of material handling and storage systems.

(b) Sketch a simple FMS and discuss its working in the context of its control system.

5. (a) Sketch and discuss different types of links and joint in robots.

(b) What are end effectors in robots?

(c) Discuss the importance of sensors in robots.

6. Write notes on th following:

(a) Programming technology for Robots

(b) Work cell unit

(c) Robotic simulation

7. Explain the following:

(a) Accuracy and repeatability in robots

(b) Benifits of FMS

(c) Transfer machines

8. Discuss the operations for which robots are used in manufacturing system. What are the typical conditions for which application fo robot tecnology is essential.