

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

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  
**SIXTH SEMESTER B.TECH DEGREE EXAMINATION, APRIL 2018**

**Course Code: ME306**

**Course Name: ADVANCED MANUFACTURING TECHNOLOGY (ME)**

Max. Marks: 100

Duration: 3 Hours

*Use of approved Data book permitted.*

**PART A**

*Answer any three full questions, each carries 10 marks.*

Marks

- |   |   |      |
|---|---|------|
| 1 | a) Explain powder metallurgy process.   | (4)  |
|   | b) With neat sketches explain the principal methods used to produce metallic powders in powder metallurgy.  | (6)  |
| 2 | Draw relay ladder diagram for the following sequential operations .Start button pressed, table motor started, package moves to the position of the limit switch and stops. Auxiliary features required are emergency stop, red light to indicate stop condition and green light to indicate package moving condition. Draw input and output connection diagrams also. | (10) |
| 3 | a) What are the different word address formats used in part programming?  | (5)  |
|   | b) Mention the purpose of miscellaneous functions in part programming. Write any 2 M – codes with their applications.   | (5)  |
| 4 | What is meant by interpolation in NC systems? Explain different types of interpolations.  | (10) |

**PART B**

*Answer any three full questions, each carries 10 marks.*

- |   |  |      |
|---|--|------|
| 5 | What are the functions and desirable properties of dielectric fluid in EDM?<br>Explain desirable properties of electrode material used in EDM? | (10) |
| 6 | a) Describe advantages and limitations of Ion beam machining.  | (4)  |
|   | b) Describe the mechanism of material removal in Ion beam machining  | (6)  |
| 7 | a) What are the advantages and disadvantages of Laser Beam Machining process?  | (4)  |
|   | b) With a neat sketch explain Electron Beam Machining process.   | (6)  |
| 8 | What are the advantages and disadvantages AWJM? Describe the applications of AWJM.   | (10) |

**PART C**

*Answer any four full questions, each carries 10 marks.*

- 9 a) What is Laminated Object Manufacturing? Explain the process with sketches. (10)
- 10 a) What is LIGA process? Explain it with neat sketches. (10)
- 11 a) With neat sketch explain Abrasive Flow Finishing Process. (5)
- b) With a neat sketch explain Diamond turn machining process. (5)
- 12 Explain Magnetorheological Abrasive Flow Finishing process with suitable diagram. (10)
- 13 With a neat sketch explain Selective Laser Sintering. (10)
- 14 Explain the working of laser engineered net shaping with sketch. (10)

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