Faculty of Engineering & Technology

Fifth Semester B.E. (Mechanical Engg.)

(C.B.S.) Examination

ADVANCED PRODUCTION PROCESSES

Time—Three Hours] [Maximum Marks—80

INSTRUCTIONS TO CANDIDATES

(1) All questions carry marks as indicated.

(2) Solve **SIX** questions as follows :

Que. No. **1 OR** Que. No. **2**

Que. No. **3 OR** Que. No. **4**

Que. No. **5 OR** Que. No. **6**

Que. No. **7 OR** Que. No. **8**

Que. No. **9 OR** Que. No. **10**

Que. No. **11 OR** Que. No. **12**

(3) Due credit will be given to neatness and adequate dimensions.

(4) Illustrate the answers with necessary figures/ drawings wherever necessary.

(5) Assume suitable data wherever necessary.

1. (a) Explain Abrasive Jet Machining (AJM) with neat sketch. What are its advantages, limitations and application ? 7

(b) Describe Ultrasonic Machining (USM) process with its advantages and limitation. 6

OR

2. (a) Describe the Electro Chemical Machining (ECM). What are the advantages and disadvantages of this process ? 7

(b) Explain the principle of Electrical Discharge Machining (EDM) process. What are its advantages and disadvantages ? 6

3. (a) Explain the Plasma Arc Welding (PAW) with neat sketch. Comment on its advantage, limitation and application. 7

(b) With neat sketch explain Tungsten Inert Gas (TIG) Welding. Also give its advantages and applications. 6

OR

4. (a) What is Electron Beam Welding ? Explain the process with the help of neat sketches, stating its advantages and applications. 7

(b) Explain with neat sketch Laser Beam Welding (LBW) process. What are its advantages, disadvantages and applications ? 6

5. (a) Explain constructional features of Capstan Lathe with neat sketch. 7

(b) Explain in brief main parts of Turret Lathe. How it differs from Capstan Lathe ? 7

OR

6. (a) Draw the tool layout for the component shown in Fig. Q. 6. 9

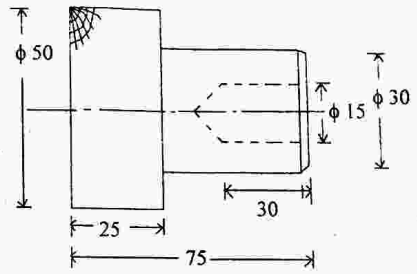

Fig. Q. 6

(b) What do you mean by nano fabrication ? Give its salient features. 5

7. (a) How presses are classified ? Explain with neat sketch. 7

(b) Explain Drawing die and its operation with neat sketch. 6

OR

8. (a) Draw a neat sketch to show the details of a cutting die set. Explain "Press Terminology" and its various element. 7

(b) Explain the following cutting operations :

(i) Blanking

(ii) Lancing

(iii) Perforating

(iv) Slitting. 6

9. (a) List various types of locators commonly used and explain it with the help of a sketch. 7

(b) What is jigs and fixtures ? Explain their needs in interchangeable manufacturing. 6

OR

10. (a) Explain 3-2-1 principle or six point location principle in case of jigs and fixtures with neat sketch. Also comment why it is widely practiced ? 7

(b) Explain following type of jig :

(i) Box type jig.

(ii) Open type jig. 6

11. (a) Explain Lapping process in detail. 7

(b) Explain Honing process in detail. 7

OR

12. (a) Explain superfinishing process in detail. 7

(b) Explain finishing process by grinding in detail with neat sketch. 7