

**Sample Question Paper**  
**Scheme – I**

**ProgrammeName** : **Production Engineering**  
**Programmecode** : **PG/PT**  
**Semester** : **Sixth**  
**Course Title** : **Process Engineering**  
**Marks** : **70**

**22664**

**Time: 3 Hrs.**

**Instructions:**

- (1) All questions are compulsory.
- (2) Illustrate your answers with neat sketches wherever necessary.
- (3) Figures to the right indicate full marks.
- (4) Preferably, write the answers in sequential order.

**Q.1) Attempt any FIVE of the following.**

**(10 Marks)**

- a) Define product analysis with suitable example.
- b) State the use of process flow chart.
- c) State the basic elements of part drawing.
- d) Define the term “Bill of material”.
- e) Write the essential details of route sheet.
- f) Define Product cycle in manufacturing.
- g) State the any two applications of group technology.

**Q.2) Attempt any THREE of the following.**

**(12 Marks)**

- a) Differentiate between function and group layout.
- b) Explain the concept of computer aided process planning (CAPP).
- c) Describe the element of product analysis for design for production.
- d) Describe the role of process engineering department.

**Q.3) Attempt any THREE of the following.**

**(12 Marks)**

- a) List the gauging and inspection methods to select appropriate inspection gauges for the part given on part drawing.
- b) Describe the term in context with process planning
  1. Major/Principal operations
  2. Auxiliary and supporting process operations.
- c) Describe the information required for process planning.
- d) State the use of tool layout in process planning with example.

**Q.4) Attempt any Three of the following.**

**(12 Marks)**

- a) Describe any two methods of eliminating operations.
- b) Define a component family and state the procedure to sort the components into families.
- c) List-out basic requirements for coding system of material.
- d) Differentiate between Generative type and variant type of CAPP.
- e) State the applications of 3D scanner in process plan.

**Q.5) Attempt any TWO of the following.**

**(12 Marks)**

- a) Perform product analysis to manufacture hexagonal headed bolt on identified criteria for process plan and also prepare the process flow chart.
- b) From a production drawing of lathe tool post given in fig 1., interpret the part drawing on general characteristics and
  1. Prepare Tolerance chart
  2. Prepare bill of material
  3. Suggest machine and tooling for generating internal thread (M18) on part no. 1
  4. State the meaning of symbol SQ. M18 X 1.5 and 

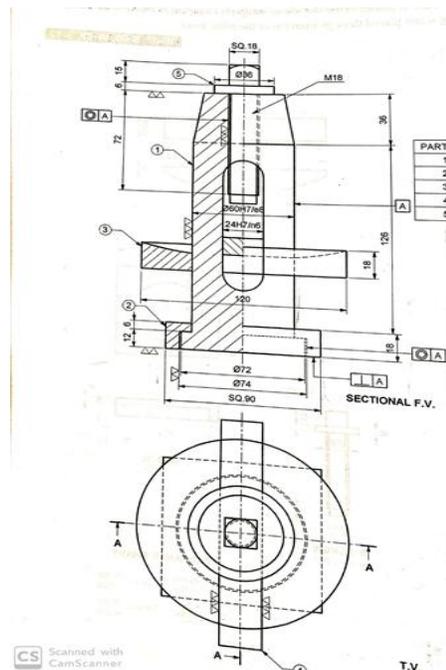


Figure No. 1

- c) Prepare a Process sheet for manufacturing washer of size  $\text{Ø}30$  OD x  $\text{Ø}20$  ID x 3 mm thick from  $\text{Ø}35$  X 5 mm thick raw mild steel material.

**Q.6) Attempt any TWO of the following.**

**(12 Marks)**

- a) Describe the steps to develop the relevant coding system and construct a component family with example.
- b) Relate the contribution of CAPP in implementation of CIM.
- c) Describe the machine and tool selection procedure for process planning.

**Sample Test Paper I**  
**MSBTE Outcome based Curriculum**  
**Scheme – I**

**Programme Name : Production Engineering**  
**Programme Code : PG/PT**  
**Semester : Sixth**  
**Course : Process Engineering**  
**Marks : 20**

**22664**

**Time: 1 hour**

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**Instructions:** All questions are compulsory

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3. Assume suitable data if necessary
4. Preferably, write the answers in sequential order

**Q.1 Attempt any FOUR.**

**(8 Marks)**

- a. State any two function of product engineering department.
- b. List the four element of product design.
- c. State the criteria on which part analysis from part drawing is done.
- d. Define process planning.
- e. Classify process operations with examples of each.
- f. What information will get from Bill of Material ?

**Q.2 Attempt any TWO**

**(12 Marks)**

- a. Describe the functions of Process engineering department.
- b. Explain tolerance analysis of part drawing.
- c. Describe the following related to operation sheet
  1. machining parameter
  2. Measuring gauges.

**Sample Test Paper II**  
**MSBTE Outcome based Curriculum**  
**Scheme – I**

**Programme Name : Production Engineering**  
**Programme Code : PG/PT**  
**Semester : Sixth**  
**Course : Process Engineering**  
**Marks: 20**

**22664**

**Time: 1 hour**

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**Instructions:** All questions are compulsory

1. Illustrate your answers with neat sketches wherever necessary
2. Figures to the right indicate full marks
3. Assume suitable data if necessary
4. Preferably, write the answers in sequential order

**Q.1 Attempt any FOUR.**

**(8 Marks)**

- a. State the principle of group technology
- b. Define Part family and machine cell.
- c. List the applications CAPP.
- d. Define CIM
- e. List the open source CAPP software's available now a days.
- f. Give basic requirements for the coding system.

**Q.2 Attempt any TWO.**

**(12 Marks)**

- a. State the advantage and disadvantage of group technology.
- b. Describe generative type of CAPP with application.
- b. List-out applications of 3D scanner in process plan.