22664

22223

3 Hours / 70 Marks Seat No. | | | | | | | | |

Instructions – (1) All Questions are *Compulsory.*

(2) Answer each next main Question on a new page.

(3) Illustrate your answers with neat sketches wherever necessary.

(4) Figures to the right indicate full marks.

(5) Assume suitable data, if necessary.

(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE of the following: **10**

a) Define product engineering.

b) State the use of process flow chart.

c) State the need of visualization of part.

d) Write two uses of BOM.

e) Define product cycle in manufacturing.

f) Write two functions of auxiliary tools.

g) Enlist two applications of group technology.

Marks

2. Attempt any THREE of the following: **12**

a) Write four functions of process engineering department.

b) Explain categorization of surfaces on part using part drawing.

c) Describe machine and tool selection procedure.

d) Explain cellular layout with sketch.

3. Attempt any THREE of the following: **12**

a) State the criteria used for product analysis.

b) Explain Route sheet.

c) State the information recorded on operation sheet.

d) Record the information required for process planning of gear box manufacturing.

4. Attempt any THREE of the following: **12**

a) Define group technology and give two applications.

b) State the basic requirements for the product coding.

c) Explain CAPP.

d) Explain the contribution of CAPP in implementation of CIM.

e) Explain variant type and generative type CAPP and compare.

5. Attempt any TWO of the following: **12**

a) Describe the process of inspection and gauging using part drawing.

b) Prepare a process sheet for manufacturing washer of size ϕ 30 OD $\times$ ϕ 20 ID $\times$ 3 mm thick from ϕ 35 $\times$ 5 mm thick M.S. bar.

c) Explain the CAPP implementation techniques and give example for each.

Marks

6. Attempt any TWO of the following: **12**

a) Draw simple sketches of A, B and C type families and note the difference.

b) Explain the concept and general guidelines for Design For Machining (DFM) with example.

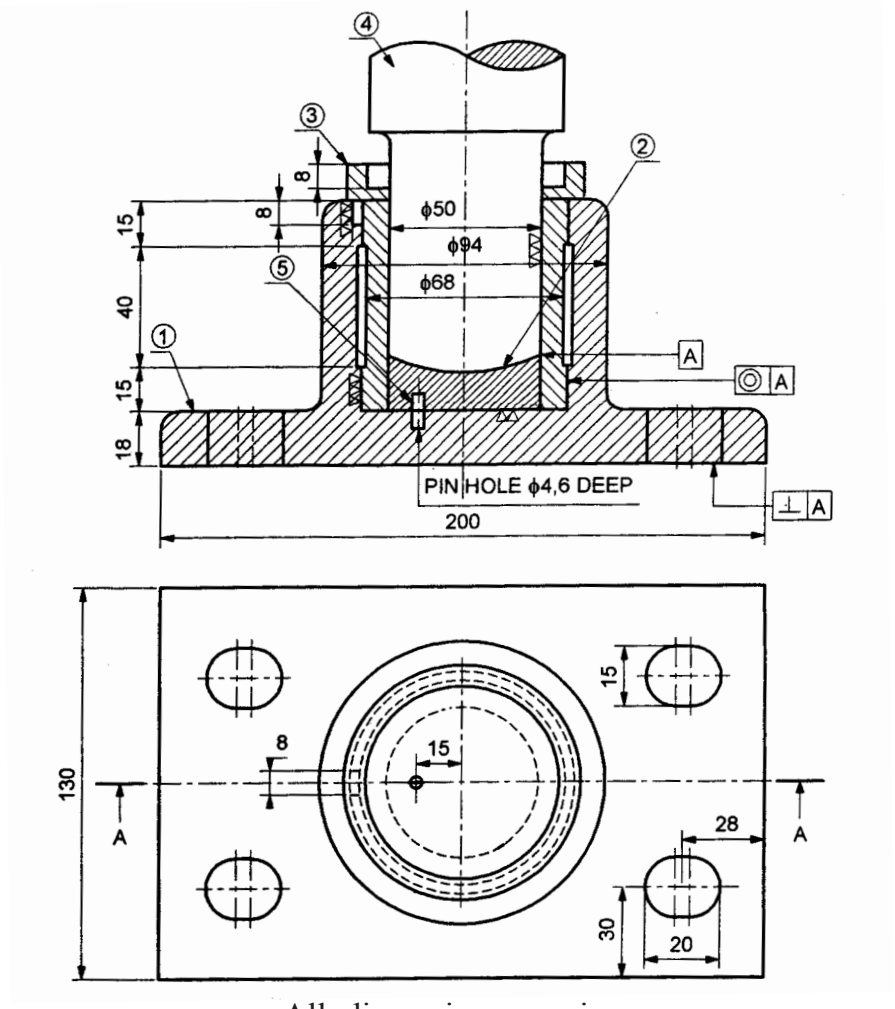
c) From a production drawing of foot step bearing in Fig. No. 1., interpret the part drawing on general characteristics and

i) Prepare tolerance chart

ii) Prepare bill of material

iii) Suggest machine and tooling for generating internal ϕ 50 on part no. 3.

iv) State the meaning of various symbols used.



All dimensions are in mm

Fig. No. 1.