# 22664

**23124**

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

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

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

(3) Figures to the right indicate full marks.

(4) Assume suitable data, if necessary.

(5) Use of Non-programmable Electronic Pocket Calculator is permissible.

(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 the terms -

i) Product Analysis

ii) Process Analysis.

b) State the four functions of Product Engineering department.

c) State the objectives of Tolerance analysis.

d) State any four general characteristics of part drawing analysis.

e) State the uses of Route sheet.

f) Define the term Group Technology.

g) Define the term Computer Aided Process Planning (CAPP).

**Marks**

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

a) State the information required for process planning with suitable example.

b) State the classification of operations. Give example of Auxillary and supporting operations.

c) Explain Tolerance analysis.

d) Explain the difference between route sheet and operation sheet.

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

a) State the basic requirements for the coding system.

b) Define Group Technology and state it's applications.

c) State the applications of 3D scanner in process plan.

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

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

a) Explain the role of process engineering department.

b) Explain process planning procedure.

c) Explain inspection methods in process engineering.

d) List open source softwares in computer aided process planning.

e) Explain general guidelines for Design for Machining (DFM).

**Marks**

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

a) Explain product cycle in manufacturing with sketch.

b) Explain the concept of Bill of materials (BOM) with sketch and example.

c) Explain :-

i) A type component families.

ii) B type component families.

iii) C type component families.

State examples of each components families.

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

a) Explain following categorisation of surfaces.

i) Locating surface.

ii) Functional surface.

iii) Clamping surface.

b) Explain criterias for process plan.

c) Describe computer aided process planning (CAPP) with sketch.