22565

24225

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 : **5 × 2 = 10**

(a) State the basic requirements of chip formation.

(b) State the different types of cutting dies.

(c) State the ISO designation for carbide inserts.

(d) State the functions of locating devices.

(e) Define term : 'Fixtures'.

(f) Define term : 'Centre of pressure'.

(g) Define term : 'Bend allowance'.

2. Attempt any THREE of the following : **3 × 4 = 12**

(a) State any four conditions that tends the formation of continuous chips with Built-up edge.

(b) State the types of cutting tool materials with their applications.

(c) Explain 3-2-1 principles of location with neat sketch.

(d) State the difference between 'Jigs' & 'Fixtures'.

3. Attempt any THREE of the following : **3 × 4 = 12**

(a) State the types of 'Strip layout' and importance of the strip layout.

(b) Explain all the components of 'Drawing Die' used for the cup manufacturing.

(c) Explain 'Die clearance' in reference to blanking & punching operations with neat sketch.

(d) Explain 'Degree of freedom' with its importance while selection of locating & clamping devices.

(e) Define terms : (i) Bend radius (ii) Bend allowance with suitable sketch.

4. Attempt any TWO of the following : **2 × 6 = 12**

(a) Differentiate between 'Orthogonal metal cutting' and 'Oblique metal cutting' with neat sketch.

(b) Explain with suitable sketch "Tool sharpening method for single point cutting tool".

(c) Enlist the types of locator & explain working of locator.

5. Attempt any TWO of the following : **2 × 6 = 12**

(a) Explain the 'Drilling jigs' for suitable example with neat sketch.

(b) Explain the general assembly sketch for the 'Progressive die' with all components.

(c) Explain term 'Spring back' and state the causes and remedies for spring back avoidation.

6. Attempt any TWO of the following : **2 × 6 = 12**

(a) Explain 'Milling fixtures' for suitable example with neat sketch.

(b) Explain the methods of reducing cutting force in cutting tool dies with neat sketch.

(c) The washer with outer diameter 25 mm and inner diameter 10 mm are produced with the 1 mm MS sheet.

Calculate : (i) Clearance (ii) Size of punch & die