



B.E. DEGREE EXAMINATIONS: APRIL / MAY 2023

(Regulation 2018)

Fourth Semester

AUTOMOBILE ENGINEERING

U18AUI4204: Machine Drawing

COURSE OUTCOMES

- CO1:** Interpret the conventional representation of components.
CO2: Construct part drawings with required views and dimensions.
CO3: Apply the knowledge of Limits, Fits and Tolerances in the drawings.
CO4: Build part and assembly drawings according to BIS with Bill of Materials.
CO5: Identify and draw the different types of Screwed Fastenings.
CO6: Make use of CAD software to model and draft components and assemblies.

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

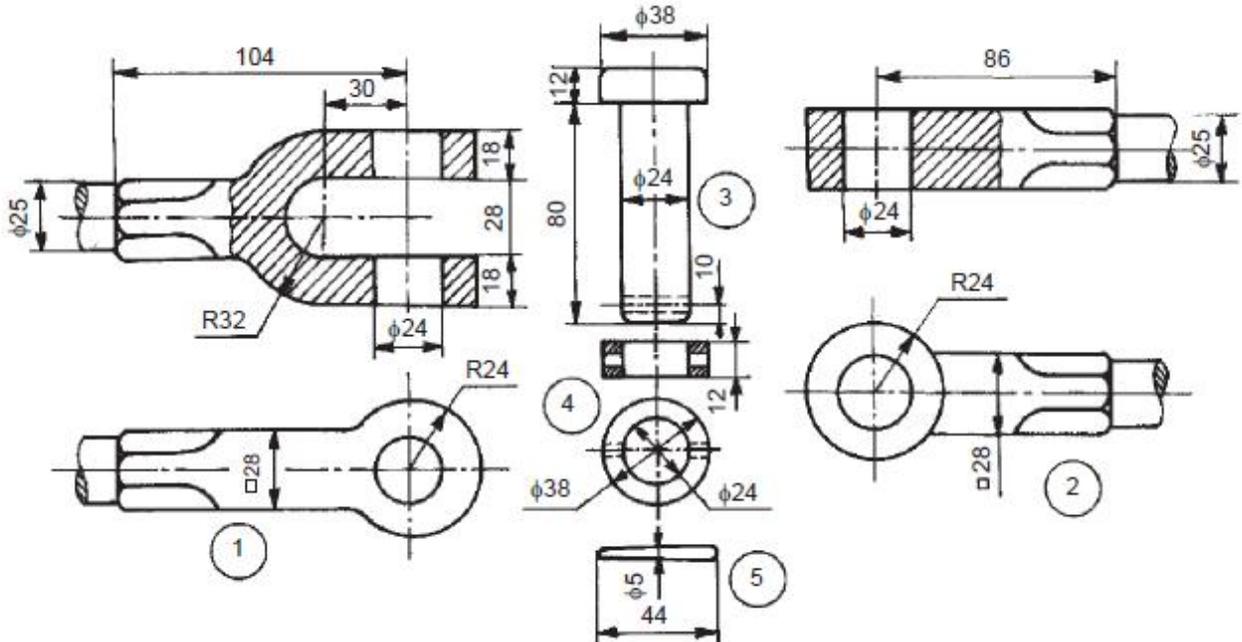
PART A (10 x 2 = 20 Marks)

(Answer not more than 40 words)

- | | | |
|--|-----|-------------------|
| 1. Enumerate different types of engineering Drawings. | CO1 | [K ₁] |
| 2. Sketch a conventional representation of the following.
a) Straight Knurling and b) Bearings | CO1 | [K ₃] |
| 3. Give the shape identification symbols for the following.
(i) Diameter (ii) Radius (iii) Control radius and (iv) Spherical radius | CO2 | [K ₂] |
| 4. List out the parts that are not usually sectioned. | CO2 | [K ₁] |
| 5. What is the purpose of using limits, fits, and tolerances in manufacturing? | CO3 | [K ₁] |
| 6. State between clearance fit and transition fit. | CO3 | [K ₂] |
| 7. Explain BOM and its Importance | CO4 | [K ₂] |
| 8. List the Standard sizes of drawing sheets as per BIS | CO4 | [K ₁] |
| 9. What are the various applications of screwed fasteners ? | CO5 | [K ₂] |
| 10. Differentiate between the following:
(a) Bolt and Screw, (b) Machine Screw and Set Screw | CO5 | [K ₂] |

**Answer any FIVE Questions:-
PART B (5 x 16 = 80 Marks)
(Answer not more than 400 words)**

11. State the need for Sectional View and explain in detail about its types. CO1 [K₃]
12. Draw the sectional front view of a given figure1. (Knuckle Joint). CO6 [K₄]
13. Draw the sectional top view of a given figure 1. (Knuckle Joint). CO6 [K₄]
14. Draw the front view of a given figure 2. (Universal Coupling) CO6 [K₄]
15. Draw the Left side view of a given figure 2. (Universal Coupling) CO6 [K₄]
16. A hole and shaft have a basic size of 25 mm, and are to have a clearance fit with a maximum clearance of 0.02 mm and a minimum clearance of 0.01 mm. The hole tolerance is to be 1.5 times the shaft tolerance. Determine: limit for both hole and shaft (a) using a hole basis system (b) using a shaft basis system. CO3 [K₃]



Parts list

Sl. No.	Name	Matl.	Qty.
1	Fork end	Forged steel	1
2	Eye end	Forged steel	1
3	Pin	Mild steel	1
4	Collar	Mild steel	1
5	Taper pin	Mild steel	1

Figure 1. (Knuckle Joint)

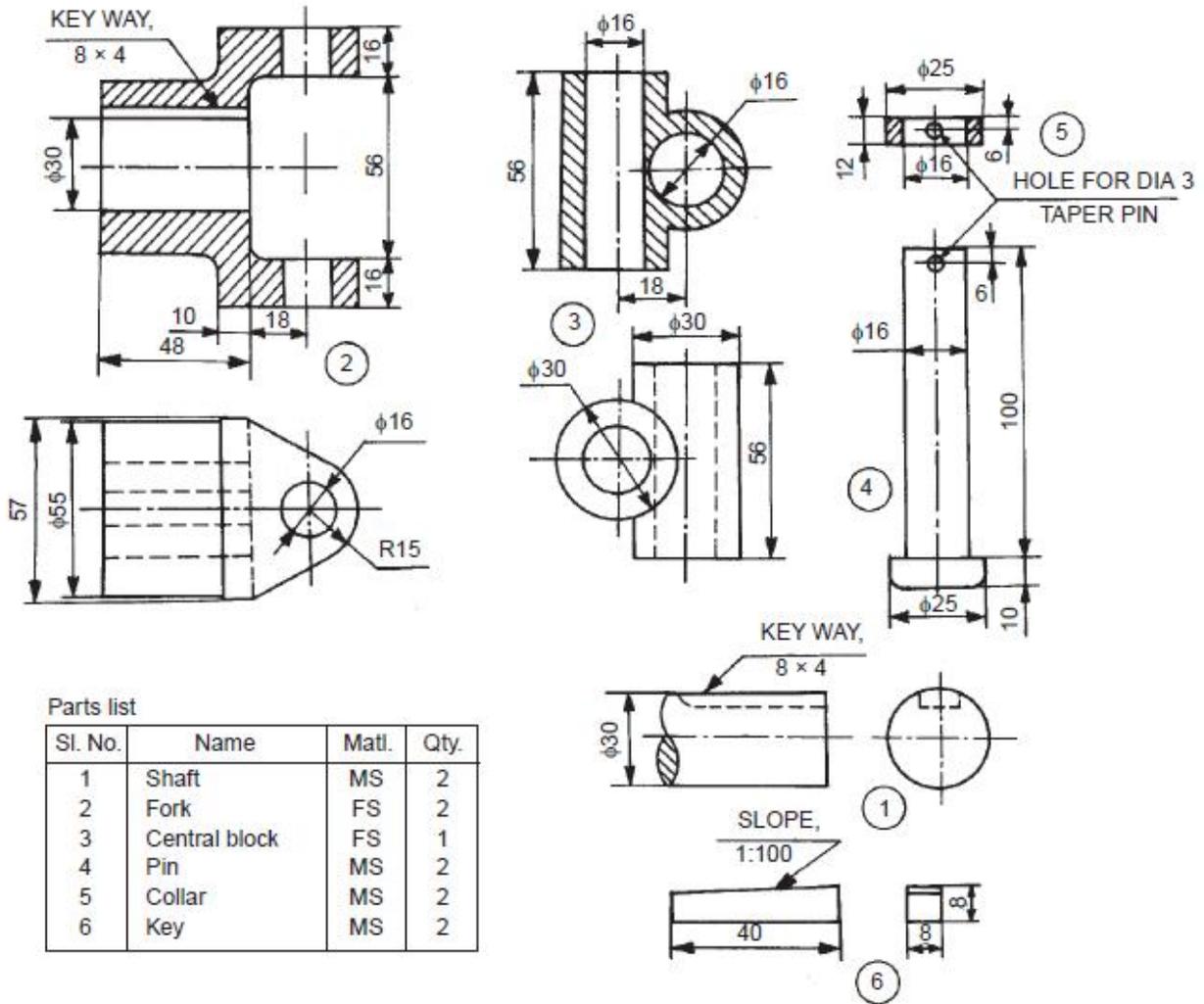


Figure 2 (Universal Coupling)
