



B.E DEGREE EXAMINATIONS: NOV /DEC 2024

(Regulation 2018)

Forth 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. Explain the importance of machine drawing in manufacturing. | CO1 | [K ₂] |
| 2. Differentiate between part drawing and assembly drawing. | CO2 | [K ₂] |
| 3. Describe two common types of sections used in machine drawing. | CO1 | [K ₂] |
| 4. How are internal and external threads conventionally represented in drawings? | CO2 | [K ₂] |
| 5. Name two types of screwed fastenings and describe their applications. | CO5 | [K ₂] |
| 6. Define the following (i) clearance fit and (ii) interference fit | CO3 | [K ₁] |
| 7. What are the differences between hole basis and shaft basis systems? | CO3 | [K ₁] |
| 8. Interpret BOM and its Importance | CO4 | [K ₂] |
| 9. What is the purpose of using form tolerances in a drawing? | CO3 | [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)

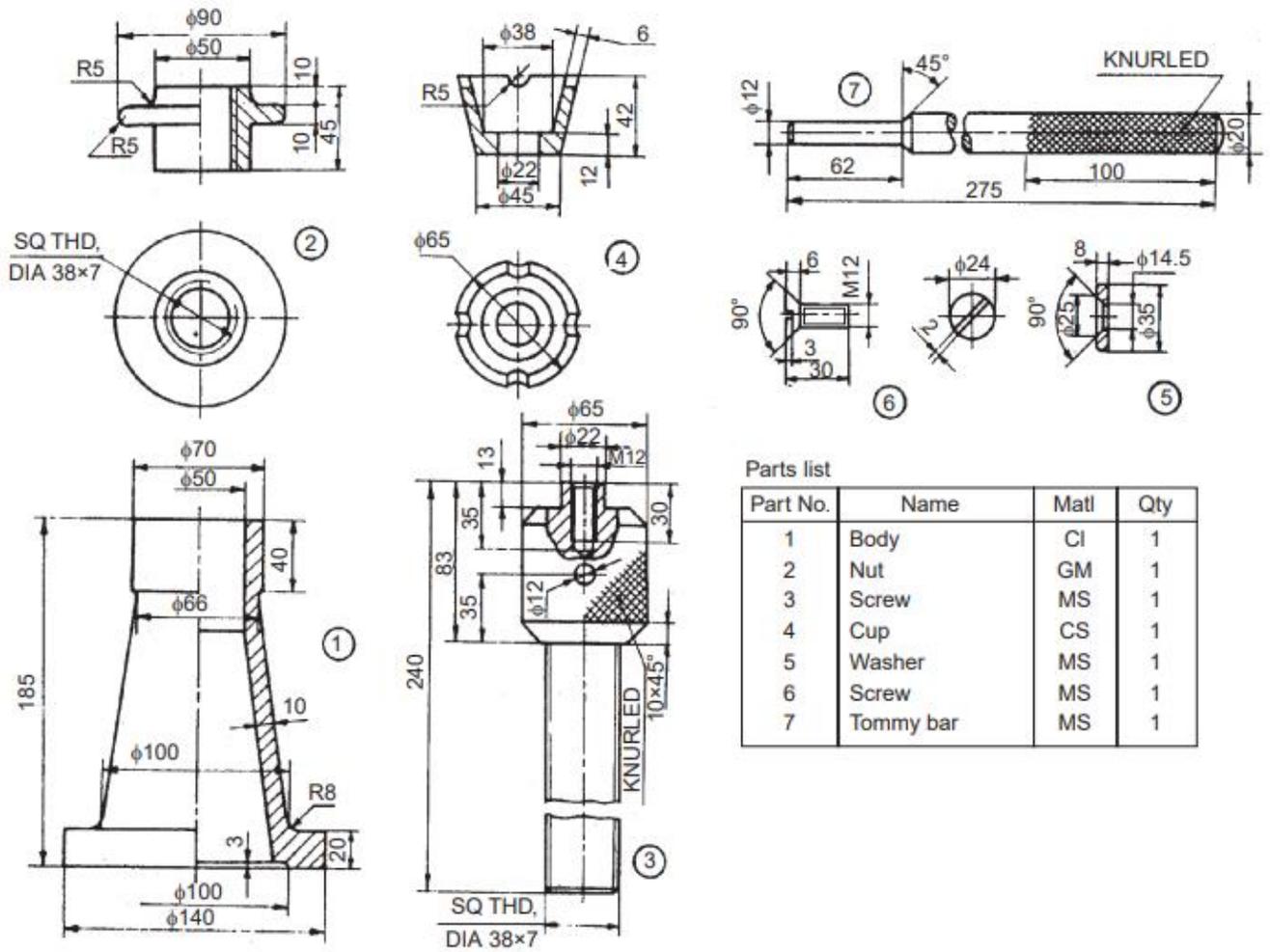
(Answer not more than 400 words)

- | | | |
|---|-----|-------------------|
| 11. A hole and shaft have a basic size of 50 mm, and are to have a clearance fit with a maximum clearance of 0.05 mm and a minimum clearance of 0.02 mm. The hole tolerance is to be twice the shaft tolerance. | CO3 | [K ₃] |
|---|-----|-------------------|

Determine the limits for both the hole and the shaft:

- (a) Using a hole basis system
- (b) Using a shaft basis system

- | | | | |
|-----|--|-----|-----------------------|
| 12. | Draw the sectional front view of a given figure1. (Screw Jack). | CO6 | [K ₄] |
| 13. | Draw the sectional top view of a given figure 1. (Screw Jack). | CO6 | [K ₄] |
| 14. | Draw the front view of a given figure 2. (Universal Coupling) | CO6 | [K ₄] |
| 15. | Draw the Left side view of a given figure 2. (Universal Coupling) | CO6 | [K ₄] |
| 16. | a) Explain types of sections such as full and half sections. | 8 | CO2 [K ₂] |
| | b) Show the conventional representation of the following | 8 | CO1 [K ₂] |
| | (i) Square on Shaft (ii) Bearings and (iii) Straight and Diamond Knurling and (iv) Holes on circular pitch | | |



Parts list

Part No.	Name	Matl	Qty
1	Body	CI	1
2	Nut	GM	1
3	Screw	MS	1
4	Cup	CS	1
5	Washer	MS	1
6	Screw	MS	1
7	Tommy bar	MS	1

Figure 1. (Screw Jack)

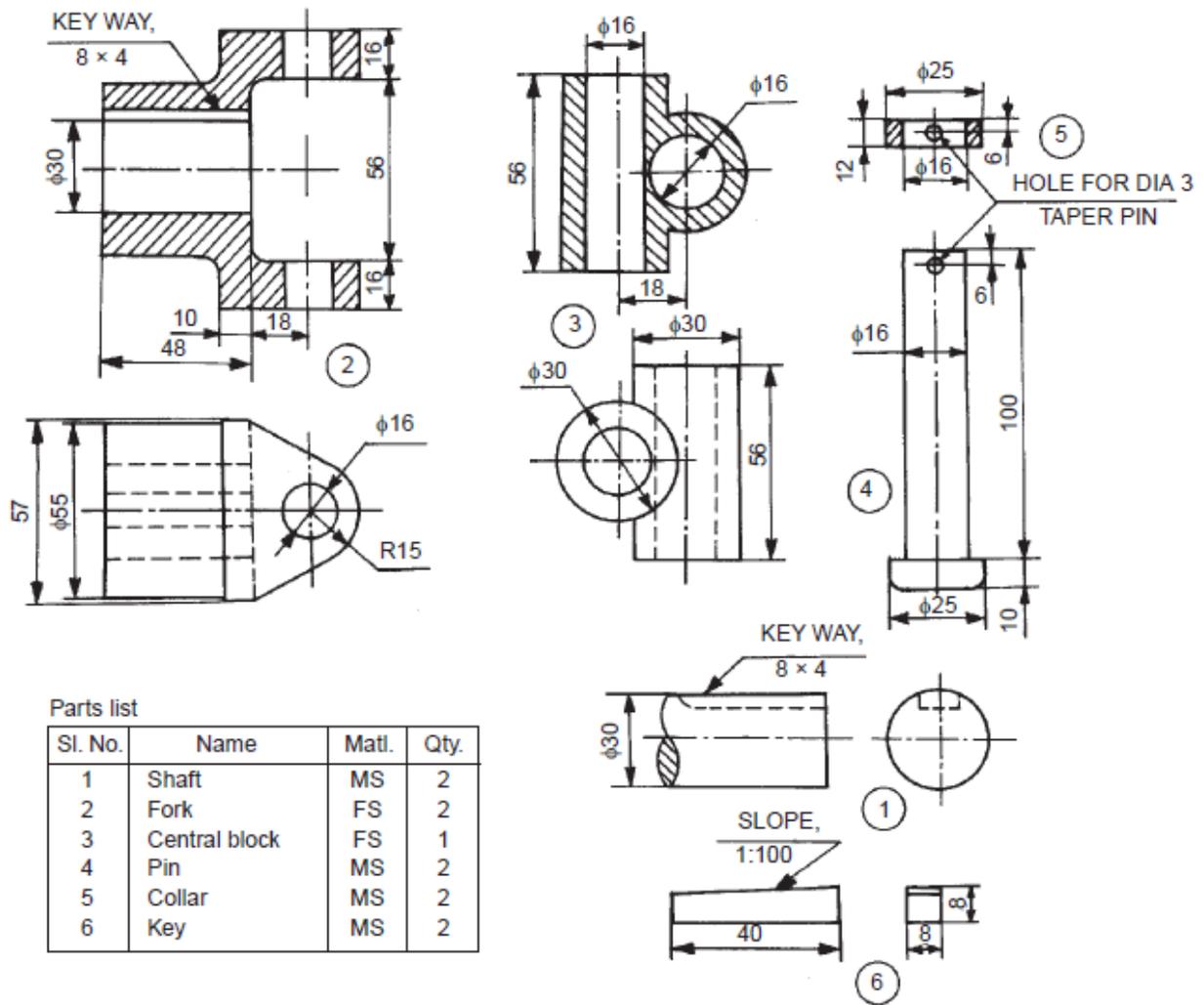


Figure 2 (Universal Coupling)
