Reg. No. : □□□□□□□□□□

Question Paper Code: 44706

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2021

Fourth Semester

Mechanical Engineering

14UME406 – MACHINE DRAWING

(Regulation 2014)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (2 x 20 = 40 Marks)

1. (a) Sketch the actual and conventional representation for the following elements:
        external thread, splined shaft, helical tension spring, chain wheel and bearing.
                                                                                      (20)

Or

   (b) (i) Briefly discuss about the importance of tolerance allocation and differentiate
             unilateral and bilateral tolerances.   (10)

         (ii) Explain in detail about the selection of fits with examples.   (10)

2. (a) (i) Sketch and illustrate the terminologies of surface finish / profile.   (10)

         (ii) With a neat sketch explain the symbols for surface finish obtained by different
             machining process.   (10)

Or

    (b) (i) Compare and contrast the permanent and temporary fastening system with
             suitable examples.   (10)

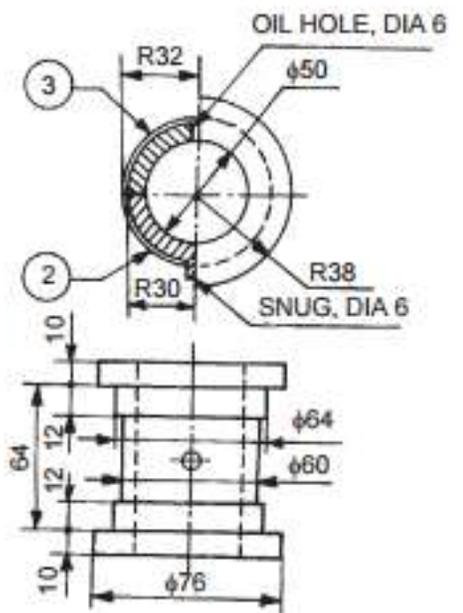   (ii) List the nomenclatures of external thread and explain with a neat sketch. (10)
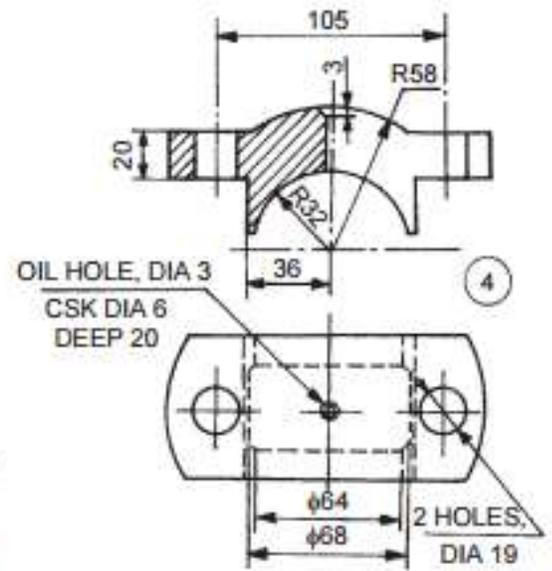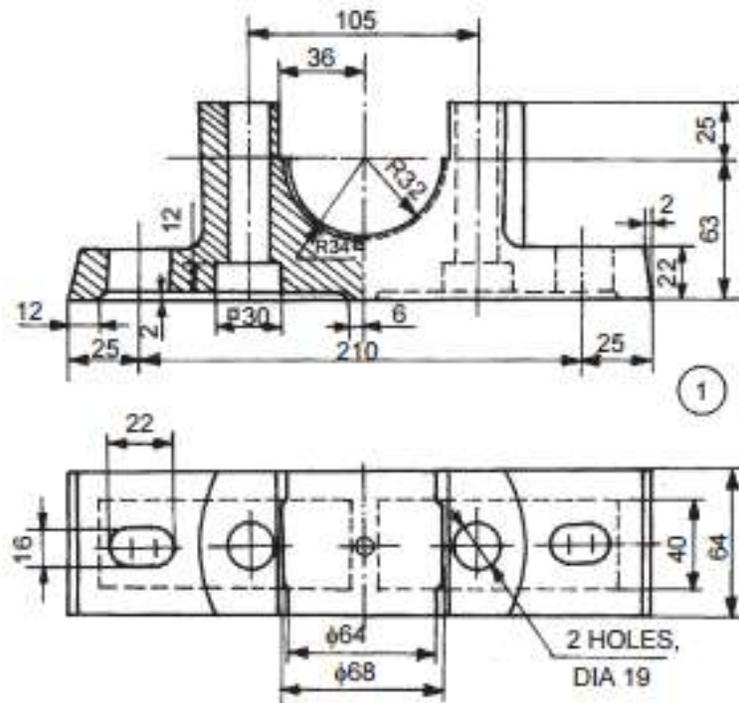
(a) Assemble the parts of a knuckle joint, shown in figure and draw, (i) sectional view from the front and (ii) view from above. (60)
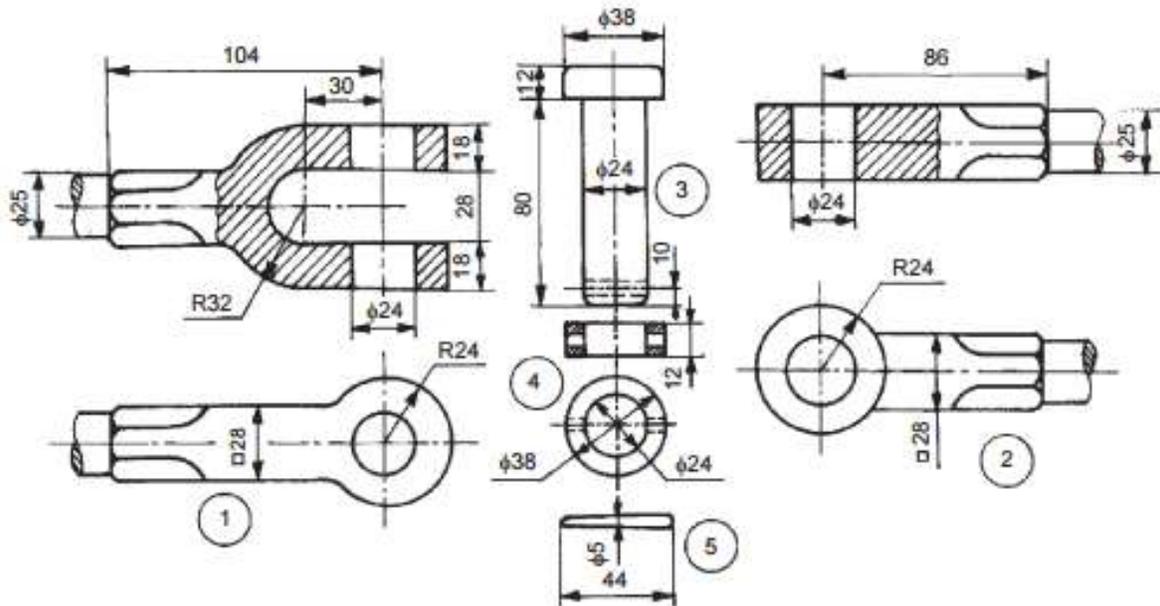
Parts list

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

3. (a) Assemble the parts of universal coupling as shown in Figure 1 and draw,
   (i) Half sectional front view and
   (ii) Top view (60)

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Part 1 — Base

105
36
25
R32
12
63
R34
22
12 | 25 | 2 | ⌀30 | 6 | 210 | 25
(1)

22
16
40
64
⌀64
⌀68
2 HOLES, DIA 19

Part 4 — Cap

105
R58
20
3
R32
36
(4)

OIL HOLE, DIA 3
CSK DIA 6
DEEP 20
⌀64
⌀68
2 HOLES, DIA 19

Parts 2 & 3 — Bearing brass

OIL HOLE, DIA 6
R32
⌀50
(3)
(2)
R30
R38
SNUG, DIA 6

10
64 | 12 | 12 | 10
⌀64
⌀60
⌀76

Part 5 — Bolt with nuts

⌀16
130
▢28
12
(5)

Parts list

Sl. No.	Name	Matl.	Qty.
1	Base	CI	1
2	Bearing brass	Bronze	1
3	Bearing brass	Bronze	1
4	Cap	CI	1
5	Bolt with nuts	MS	2

3

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