

(OLD COURSE)

QP Code : 4541

(4 Hours)

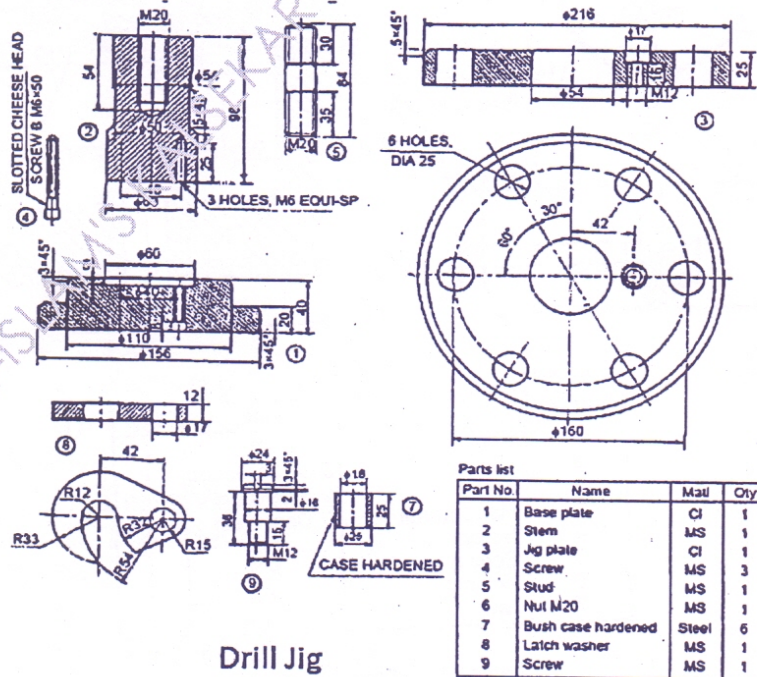
Max Marks - 100

- N.B.** (1) Question No.1 is compulsory.
 (2) Solve any four questions from remaining six questions.
 (3) Use your judgment for any unspecified dimension.
 (4) Use only drawing sheets for answering.

1. (a) A vertical square prism, base 50 mm side and 90 mm height, has one of its face inclined at 30° to the V.P. It is completely penetrated by another square prism, base 40 mm side and faces of which are equally inclined to the V.P. The axes of two prisms are parallel to V.P. and bisect each other at right angles. Draw the projections showing lines of intersection. Assume suitable length for the prisms. 10
- (b) A vertical cone of base diameter 90 mm and axis height 100 mm, has an axial triangular hole of 50 mm side cut through it one of the faces of the hole is perpendicular to V.P. and right side of the observer. Draw three views showing curve of intersection. 10

2. Figure shows the details of "Drill Jig". Assemble all the parts and draw the following views:-

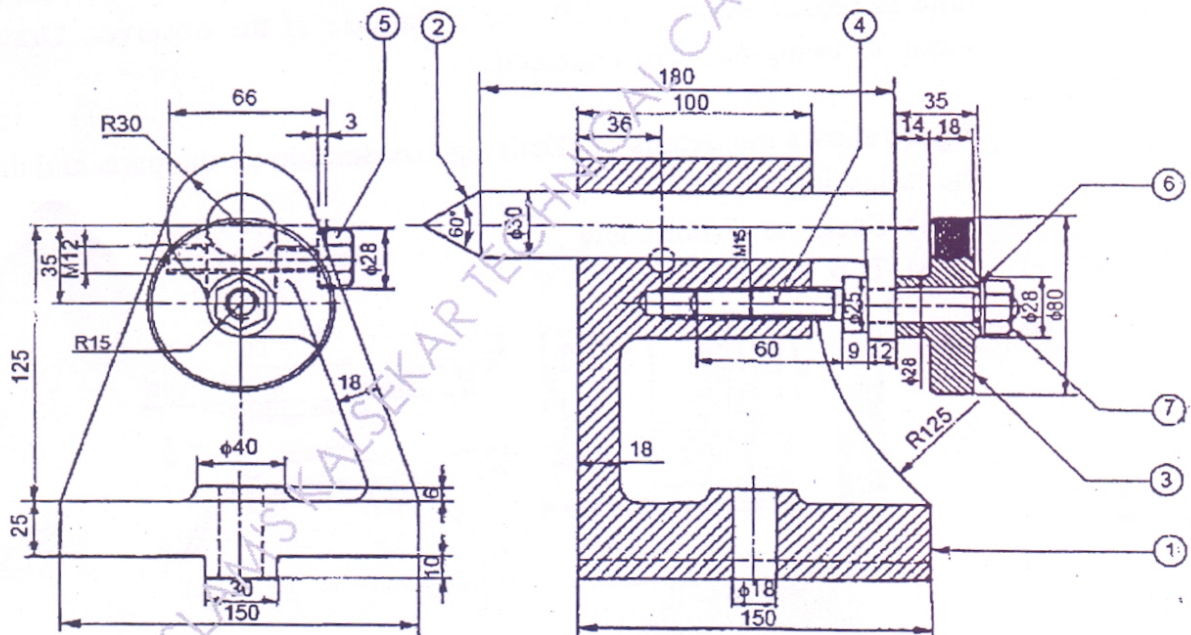
- a) Sectional Front View 12
 b) Top View 08



Drill Jig

3. Figure shows assembly of "Milling Tailstock". Draw the following details:

- a) Body : 04
 i) Sectional Front View 03
 ii) Right Hand Side View
- b) Hand Wheel : 03
 i) Upper half sectional Front View 02
 ii) Left hand Side View
- c) Center : 02
 i) Front View 02
 ii) Left hand Side View
- d) Screw (part no. 4) 02
 i) Front View 02
 ii) Right hand Side View



Parts list

Part No.	Name	Matl.	Qty.
1	Body	CI	1
2	Centre	Case hardened alloy steel	1
3	Hand wheel	Cast steel	1
4	Screw	MS	1
5	Screw	MS	1
6	Washer	MS	1
7	Nut	MS	1

Milling machine tail-stock

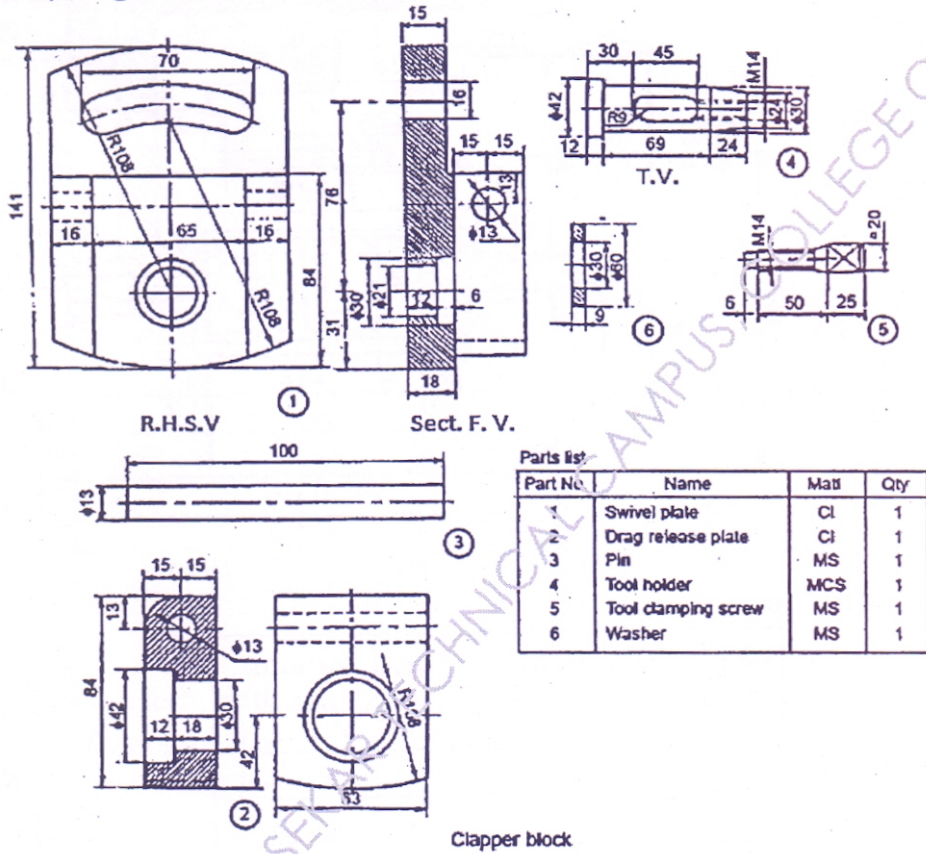
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4. Figure shows the details of "Clapper Block". Assemble all the parts and draw the following views:

- a) Sectional Front View
- b) Right hand Side View

12

08



5. Figure shows assembly of "Non Return Valve". Draw the following details:

- a) Cover :
 - i) Sectional Front View
 - ii) Top View
- b) Valve seat :
 - i) Sectional Front View
 - ii) Top View
- c) Valve :
 - i) Front View
 - ii) Top View
- d) Screw :
 - i) Front View
 - ii) Right hand Side View

04

03

03

02

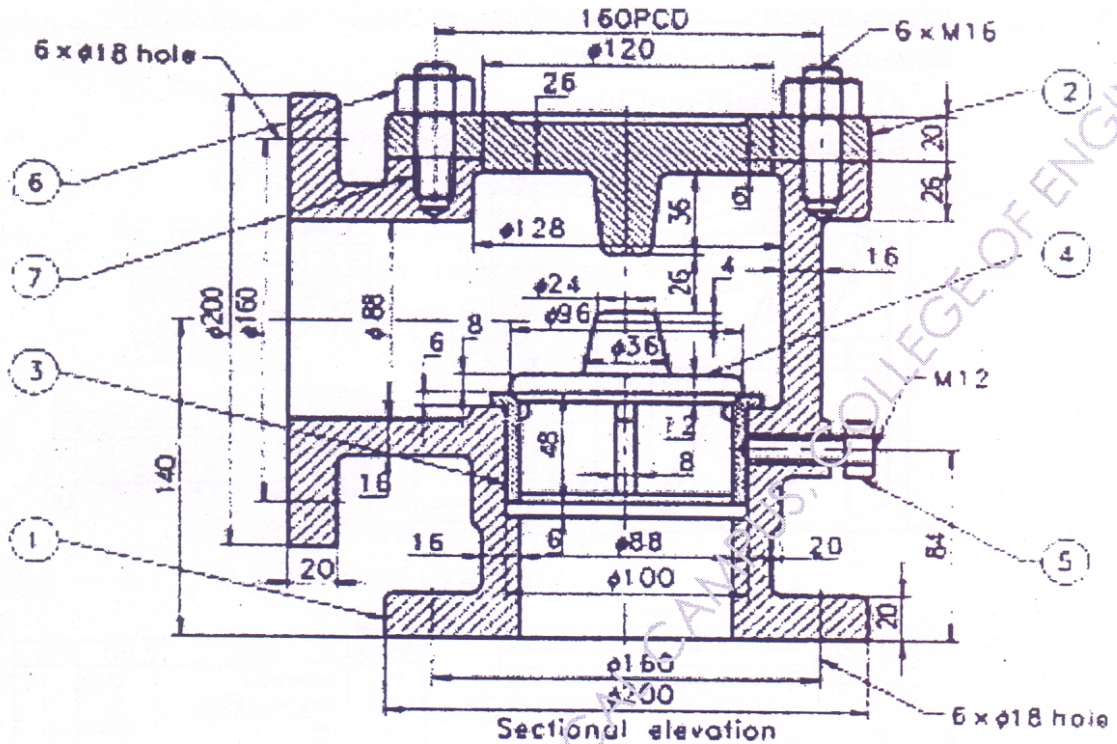
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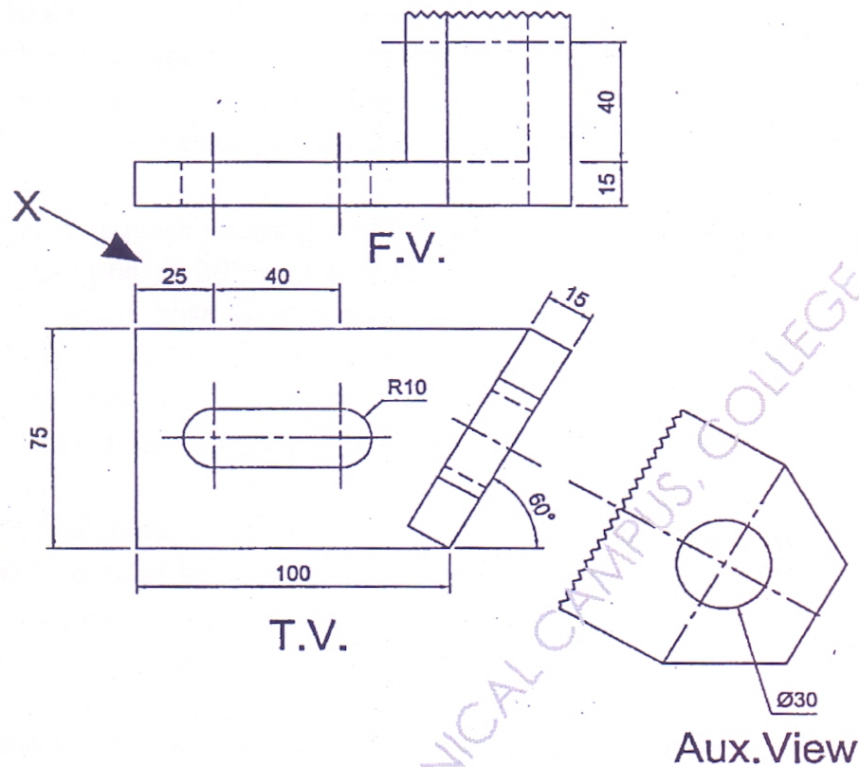
Item list

Item	Description	Qty.	Material
1	Body	1	C.I.
2	Cover	1	C.I.
3	Valve seat	1	Brass
4	Valve	1	Brass
5	Screw	1	M.S.
6	Nut	6	M.S.
7	Stud	6	M.S.

Non-return valve (assembly).

6. (a) Figure shows. Incomplete Front View, Top View and partial auxiliary view of an object. Draw the following views:
- Complete front view
 - Top view
 - Complete Auxiliary View

06
02
04



- (b) Define the term with suitable sketches :
- | | |
|-------------------------------|----|
| i) Tolerance Zone | 02 |
| ii) Upper and Lower deviation | 02 |
| iii) Maximum and minimum size | 02 |
| iv) Allowance | 02 |
7. (a) A pulley is to be fixed on shaft diameter of the hole is $30^{+0.023}_{+0.000}$. Shaft diameter is $30^{+0.042}_{-0.028}$. Determine the type of fit. Explain with neat sketch. 05
- (b) Make neat free hand sketches of the following any three, in two view each : 15
- Split muff coupling.
 - Old hams coupling.
 - Knuckle joint.
 - Fast and Loose Pully.
 - v)