

18.12.19(M)

**K. J. Somaiya College of Engineering, Mumbai-77**  
(Autonomous College Affiliated to University of Mumbai)  
End Semester Examination December 2019

**Set A****Max. Marks: 100**

Class: F. Y. B. Tech.

**Name of the Course:** Engineering Drawing

Course Code: 2UHC105

**Duration: 3hr.**Semester: **IV**

Branch: ALL

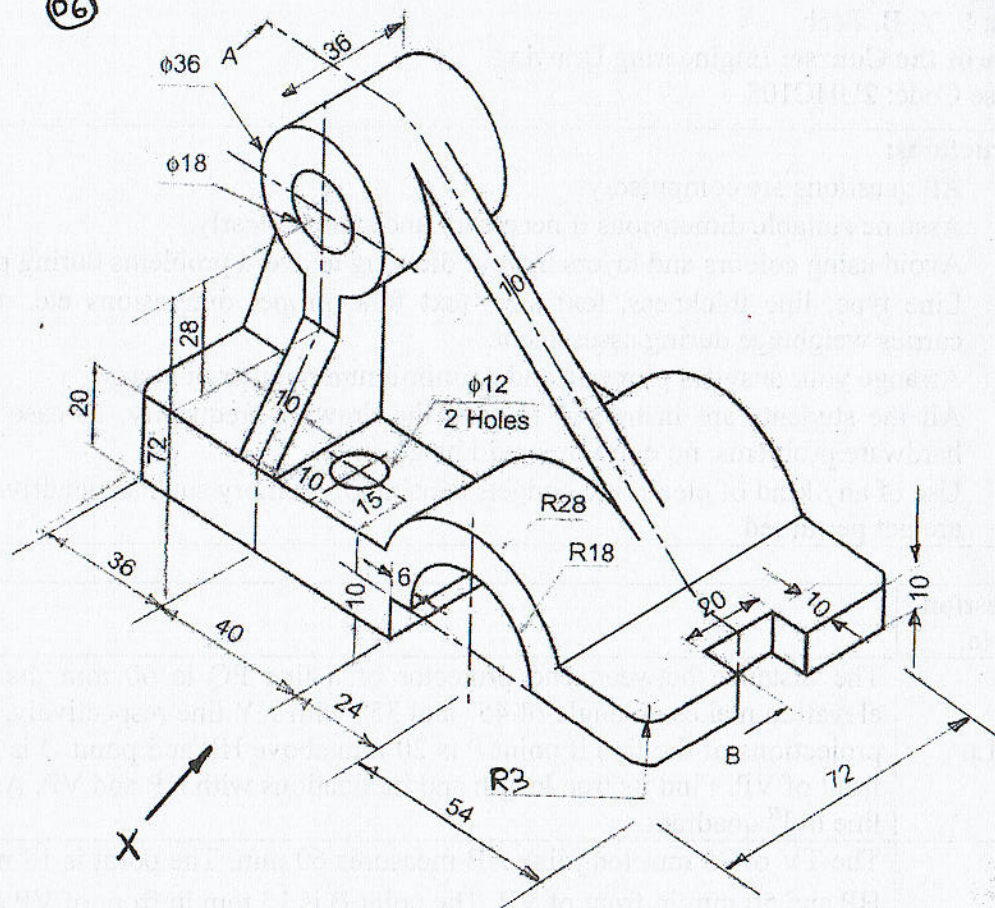
**Instructions:**

- All questions are compulsory.
- Assume suitable dimensions if necessary and state it clearly.
- Avoid using colours and layers in your drawing to avoid problems during printing
- Line type, line thickness, text size, text font, proper dimensions etc. at appropriate place carries weightage during assessment.
- Arrange your answers properly and on minimum number of pages.
- All the students are instructed to save the drawing frequently. In case of any software or hardware problems, no extra time will be given.
- Use of any kind of electronic gadgets capable of memory such as pendrive, mobile phone etc. are not permitted.

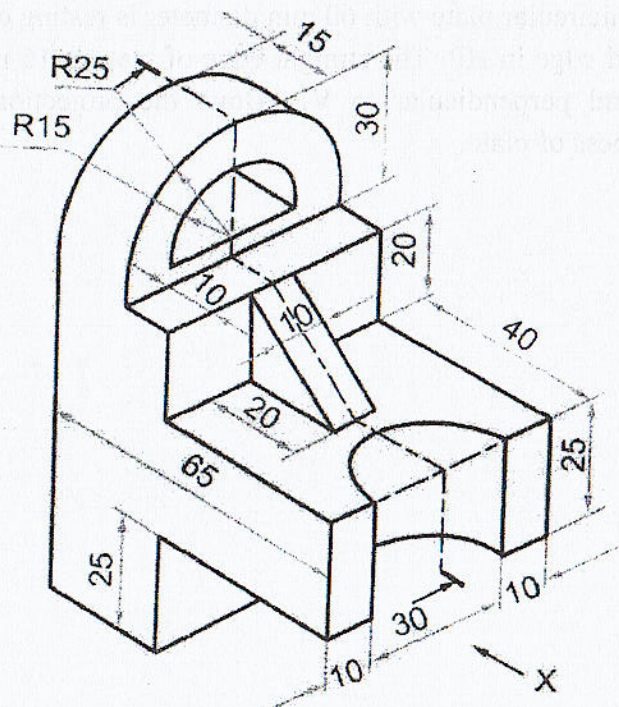
| Question No. |   | Max. Marks |
|--------------|---|------------|
| 1.a          | The distance between end projector of a line PQ is 60 mm. its plan and elevation makes an angle of $45^\circ$ and $35^\circ$ with XY line respectively. Draw the projections of the line if point P is 20 mm above HP and point Q is 25 mm in front of VP. Find its true length and inclinations with HP and VP. Assume the line in I <sup>st</sup> quadrant.   | 12         |
| 1.b          | <p>The TV of 75 mm long line AB measures 60 mm. The point A is 15 mm below HP and 50 mm in front of VP. The point B is 15 mm in front of VP and above HP. Draw the projections of line and determine its true inclinations with HP and VP.</p> <p align="center">OR</p> <p>A semicircular plate with 60 mm diameter is resting on its one of the point on curved edge in HP. The straight edge of plate is 15 mm from HP, parallel to HP and perpendicular to VP. Draw the projection of plate. Neglect the thickness of plate.</p> | 08         |



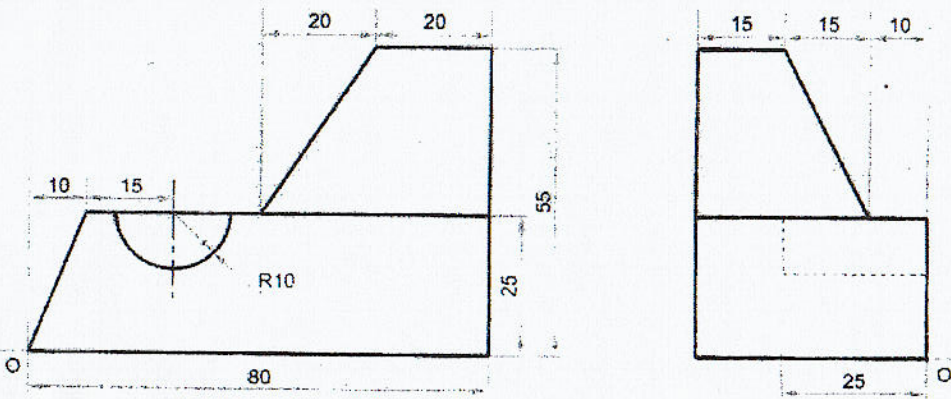
06



5





|     |   |    |
|-----|---|----|
| 3.b | <p>Figure shows FV and <math>\frac{S}{L}</math>V of an object. Draw the isometric view.</p>  <p style="text-align: center;">ELEVATION                      L.H.S.V.</p>   | 10 |
| 4   | <p>A pentagonal pyramid base edge 30 mm and axis height 70 mm long has one of its slant edge in HP. The plan of the slant edge in HP makes an angle of <math>30^\circ</math> to VP. Draw the projections if base is away from observer.</p> <p style="text-align: center;">OR</p> <p>A right circular cone with base diameter 60 mm and axis height 80 mm is resting on one point on the base circle rim on HP with apex 55 mm above HP. The axis of cone makes an angle of <math>45^\circ</math> to VP. Draw the projection of cone when apex is touching to VP.</p>   | 20 |
| 5   | <p>A hexagonal pyramid of 35 mm side of base and 65 mm axis height rest on its base on HP with one of its side of base perpendicular to VP. It is cut by the section plane perpendicular to HP, inclined at <math>30^\circ</math> to VP and 15 mm away from apex of pyramid. Draw sectional FV, TV, sectional SV and true shape of section. Assume the part of solid containing apex is retained.</p> <p style="text-align: center;">OR</p> <p>A right circular cylinder of 60 mm base diameter and 70 mm axis length, is resting on its base in HP. It is cut by a section plane passing through left-top corner and right-bottom corner. Draw FV, sectional TV, true shape of section. Also develop the lateral surfaces of reaming cylinder.</p> | 20 |



18.12.2019 (M)

**K. J. Somaiya College of Engineering, Mumbai-77**  
(Autonomous College Affiliated to University of Mumbai)  
**End Semester Exam**  
Nov- Dec 2019

**Set B**

**Max. Marks:** 100  
**Class:** F. Y. B. Tech  
**Name of the Course:** Engineering Drawing  
**Course Code:** 2UHC105

**Duration:** 3 Hrs.  
**Semester:** I & II  
**Branch:** All

**Instructions:**

- All Questions are Compulsory.
- Figures to the right indicate full marks.
- Illustrate your answers using figures, sketches, diagrams etc.
- Assume suitable dimensions if necessary and state it clearly.
- **Avoid using colours and layers in your drawings to avoid problems during printing.**
- Line type, line thickness, text size, text font, content of title block, proper dimensions etc. at appropriate place carries weightage during assessment.
- Arrange your drawings properly and on minimum number of pages.
- All the students are requested to save the drawings regularly. In case of any hardware or software problems, no any extra time will be allotted to you for unsaved work.
- Any kind of electronic gadgets capable of memory storage such as pen drive, mobile etc. are not permitted.

| Q. No |  | Max Marks                     |
|-------|--|-------------------------------|
| 1.    | <p>Answer of the following:</p> <p>(a) Top view of line AB is measured 90 mm and makes an angle <math>45^\circ</math> with reference line XY. The end A is in the VP and 50 mm from the HP. The end B is 12 mm from HP. Entire line AB is in second quadrant. Draw projections of line AB and find the true length and true inclination with HP and VP.</p> <p>(b) The top view of 75 mm long line PQ measures 50 mm. The end P is 15 mm above HP and 40 mm in front of VP. The end Q is 10 mm in front of the VP and lies in first quadrant. Draw projections of line PQ and find its inclinations with HP and VP.</p> <p><b><u>OR</u></b></p> <p>b) A rectangular plane of edges 40 mm and 65 mm is resting on an edge in the VP. The surface of the plane is inclined to the VP such that the front view is appears as a square. Draw projections of the plane.</p> | <p>12</p> <p>08</p> <p>08</p> |



Figure shows pictorial view of an Object. (Use First angle Projection method)

i) **Sectional Front View along section B-B;**

08

06

06



Figure shows pictorial view of an Object. (Use First angle Projection method)

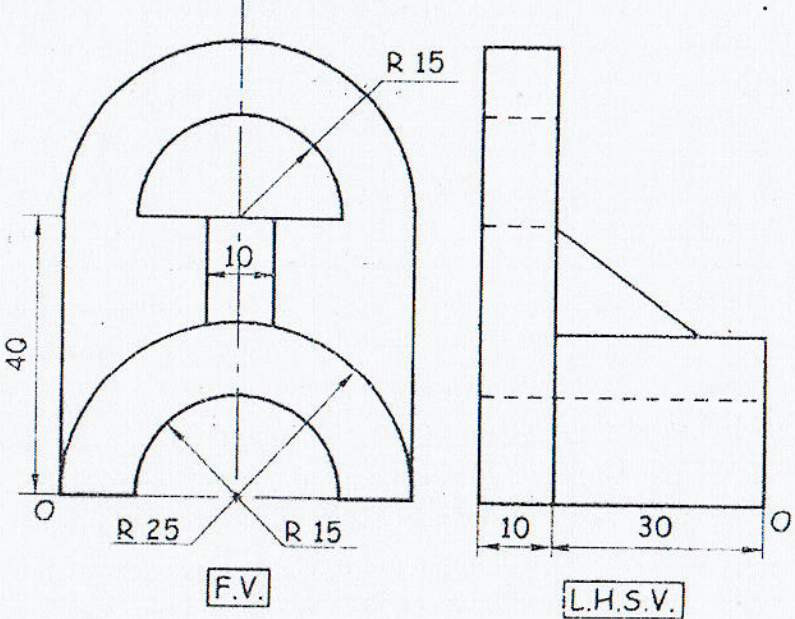
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05

ii) Top view,  
Note- Show approx. 6 to 8 important dimension in 2 views.



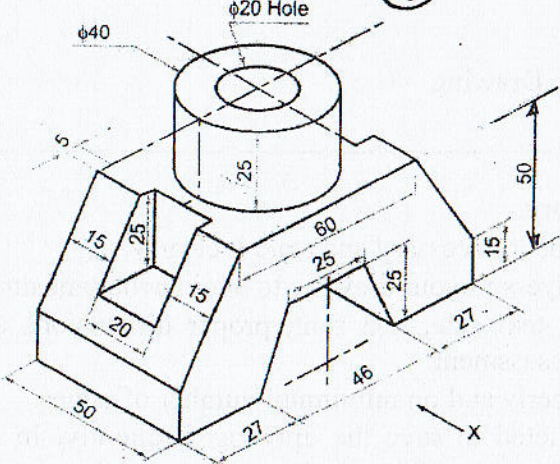
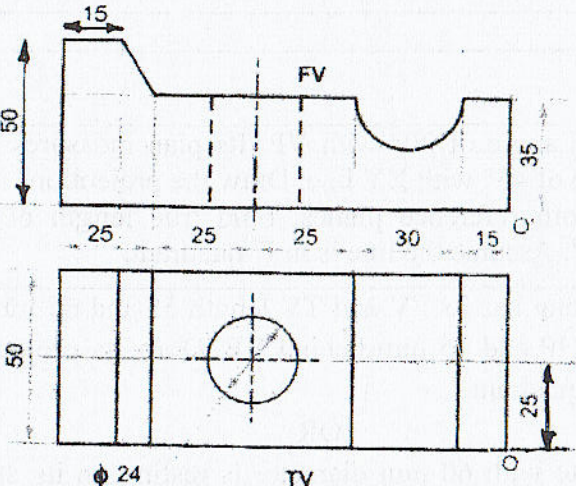


|      |   |              |
|------|---|--------------|
| 3(b) | <p>Figure shows Front View and Left Hand Side View of an object.<br/> <b>Draw the isometric view using natural scale.</b></p>  <p style="text-align: center;">[F.V.]                      [L.H.S.V.]</p>  | 10           |
| 4.   | <p>A square pyramid of 40 mm base side and 70 mm axis length is resting in the VP on one of its corner of base. The slant edge of the pyramid is inclined at an angle of <math>30^\circ</math> to the VP and <math>45^\circ</math> to the HP. Draw the projections of pyramid if the apex is nearer to the observer.</p> <p><b>OR</b></p> <p>A pentagonal prism, side of base 30 mm and length of axis 60 mm, has an edge of its base on the HP. The longer edge of prism is making an angle of <math>45^\circ</math> with the HP and TV of the same edge is making an angle <math>60^\circ</math> with reference plane. Draw the projections of solid.</p>   | 20<br><br>20 |
| 5.   | <p>A pentagonal pyramid of 35 mm side of base and 60 mm axis height has its base on HP. One side of the base is perpendicular to VP and left to the observer. An auxiliary plane inclined at <math>60^\circ</math> to HP, passes through the pyramid and cutting its axis at 25 mm from the apex. Draw - <b>Front View, Sectional Top View and True Shape of the section</b>. Also draw <b>development of the lateral surface</b> of the major part of the pyramid.</p> <p><b>OR</b></p> <p>A right circular cone of base diameter 60 mm and axis length 80 mm rests on its base on the HP. It is cut by a plane perpendicular to the VP and inclined at <math>60^\circ</math> to the HP. This plane bisects the axis of the cone. Draw - <b>Front View, Sectional Top View and True Shape of the section</b>. Also draw <b>development of the lateral surface</b> of the cone; if apex is removed.</p> | 20<br><br>20 |







|     |  |    |
|-----|--|----|
| 3.a | <p>For the pictorial view of an object shown below, draw using first angle method of projections a) FV in the direction of X, b) TV. (05)</p>    | 10 |
| 3.b | <p>Figure shows FV and TV of an object. Draw the isometric view.</p>    | 10 |
| 4   | <p>A pentagonal pyramid base edge 25 mm and slant edges 60 mm long is resting on one of its base corner with axis inclined at <math>30^\circ</math> to HP. Draw its projections if the base side opposite to the corner on the HP makes <math>40^\circ</math> to VP and apex nearer to observer</p> <p style="text-align: center;">OR</p> <p>A right circular cylinder of base diameter of 50 mm and axis height 70 mm has one of the point on base circumference in HP such that its axis is inclined at <math>30^\circ</math> to HP and the top view of axis is inclined at <math>45^\circ</math> to VP. Draw the projection of cylinder.</p>  | 20 |
| 5   | <p>A cone of 60 mm base diameter and 70 mm axis height is resting on HP on its base. It is cut by auxiliary cutting plane perpendicular to VP and inclined to HP such that the true shape of section is parabola of 60 mm height. Draw FV, sectional TV, sectional SV and true shape of section.</p> <p style="text-align: center;">OR</p> <p>A hexagonal pyramid base 25 mm side, axis 55 mm long has its base on HP, with an edge base parallel to VP. A section plane perpendicular to VP and inclined at <math>60^\circ</math> to HP bisects the axis of pyramid. Draw FV, sectional TV, true shape of section. Also, draw the development of lateral surfaces of pyramid removing apex.</p> | 20 |