Roll Number		

SET A

INDIAN SCHOOL MUSCAT
ANNUAL EXAMINATION
ENGINEERING GRAPHICS

CLASS: XI | Sub. Code: 046 | Time Allotted: 3 Hrs.

20.02.2020 | Max. Marks: 70

General Instructions:

- Attempt all questions.
- Follow SP-46-1988 Codes. Use first angle method of projection.
- Missing and mismatching dimensions should be assumed suitably.
- All dimensions are in millimeters.
- Use both sides of the drawing sheet.

1. Construct a trapezion, given diagonal = 80 mm, sides are 30 mm and 70 mm. 3

2. Draw an arc of radius 70 mm tangential externally to a circle of radius 20 mm and internally to another circle of radius 30 mm. The centers of the two circles are 60 mm apart. Also mark the point of tangency. 4

3. Construct a parabola using intersecting arcs method, given the distance between its focus and the directrix as 60 mm. 7

4. I. Draw the orthographic projections of a following points 4
   a) Point 'E' 25 mm above the HP and in the VP.
   b) Point 'F' 30 mm below the HP and in the VP.
   c) Point 'G' 35 mm in front of the VP and in the HP.
   d) Point 'H' 40 mm behind the VP and in the HP.

   II. A rectangular lamina of size 30x60 rests on HP on one of its smaller edges. Its plane makes an angle of 45° to HP. Draw its orthographic projections. 6

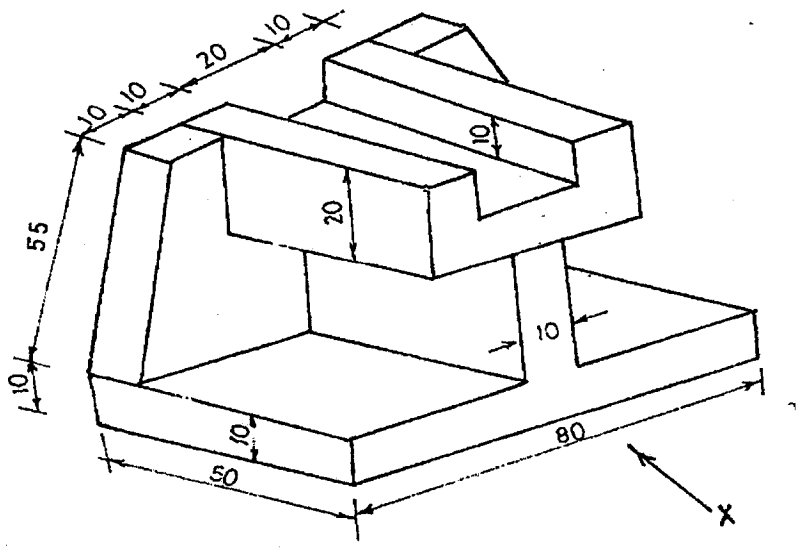
5. Draw the projections of a pentagonal prism, base 30mm sides and axis 60mm long, resting on one of its rectangular faces on the ground, with the axis inclined at 45° to the VP. 10

6. A hollow square prism, outside base edge 40 mm, height 70 mm and thickness 10 mm is resting on its base on the HP. One of its vertical faces is inclined at 45° to the VP. A section plane inclined at 30° to the HP and perpendicular to the VP passes through the axis 25 mm from the top end cuts the hollow 12

prism. Draw the following views a) Front view b) Sectional top view c) True shape of the section

7. Draw the development surface of an equilateral triangular pyramid, base edges 30 mm and height of pyramid 50 mm. 6

8. Draw the orthographic projection of a following machine blocks. Mark all the dimensions and print the views. 10



9. Construct the isometric projection of a circle of 60 mm diameter, having its surface perpendicular to HP and VP. 8

End of the Question Paper

Roll Number		

SET B

INDIAN SCHOOL MUSCAT
ANNUAL EXAMINATION
ENGINEERING GRAPHICS

CLASS: XI | Sub. Code: 046 | Time Allotted: 3 Hrs.

20.02.2020 | Max. Marks: 70

General Instructions:

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- All dimensions are in millimeters.
- Use both sides of the drawing sheet.

1. Construct a rhomboid given the diagonals = 80 mm and 50 mm. Angle between the diagonals = 60°. 3

2. Center lines of two meter gauge railway tracks are at a distance of 5 m. It is required to connect them by a reverse curve (Ogee Curve) starting from point A on the track to a point B on the second track such that the straight line distance AB is equal to 14 m. The point of tangency of the two curves is 6 m from A. Draw the centre line of the curve. 4

3. Construct an ellipse of major axis 110 mm and minor axis 70 mm by intersecting arc method. 7

4. I. a. A point 'U' on H.P. and 25 mm behind V.P. 4
   b. A point 'V' on V.P. and 20 mm above H.P.
   c. A point 'W' on V.P. and 20 mm below H.P.
   d. A Point 'H' 40 mm behind the VP and in the HP.

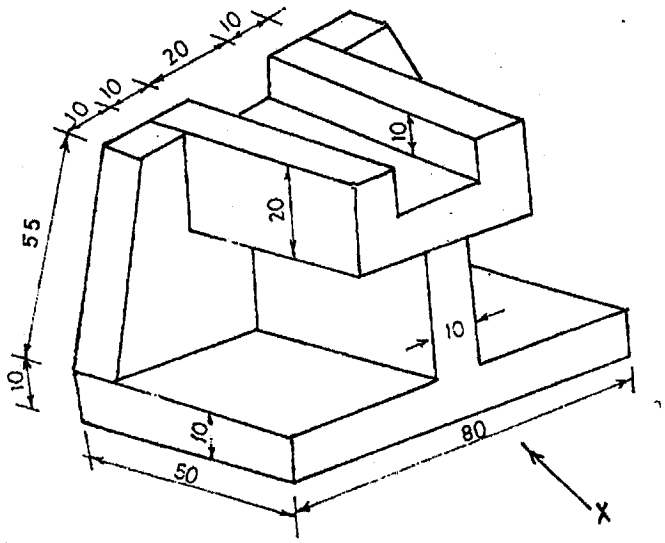
   II. A triangular lamina of edge 40 mm is resting on VP on one of its edges. Its plane makes an angle 30° to VP. The corner nearer to HP is 30 mm away from it. Draw its orthographic projections. 6

5. A cone of diameter of base 60 mm and the axis 50 mm long is lying on the HP on one of its generators. Draw the projections of the cone. 10

6. A hollow square prism, outside base edge 40 mm, height 70 mm and thickness 10 mm is resting on its base on the HP. One of its vertical faces is inclined at 45° to the VP. A section plane inclined at 30° to the HP and perpendicular to the VP passes through the axis 25 mm from the top end cuts the hollow prism. Draw the following views a) Front view b) Sectional top view c) True shape of the section. 12

7. Draw total development surface of a hexagonal pyramid base edges 25 mm and height of pyramid 50 mm. 6

8. Draw an orthographic projection of the following machine blocks. Give all dimensions and print the views. 10



9. Construct the isometric projection of a circle of 60 mm diameter, having its surface vertical and parallel to VP. 8

End of the Question Paper