

SAMPLE QUESTION PAPER
SESSION-2014-15
Class - XII
ENGINEERING GRAPHICS (SUBJECT CODE -046)

Time: 3hrs

Maximum Marks: 70

General Instructions: -

- i) *Attempt all the questions.*
- ii) *Follow the SP: 46-2003 revised codes (with First Angle method of projection).*
- iii) *Missing and mismatching dimension, if any, may be assumed suitably.*
- iv) *All dimensions are in millimeters.*
- v) *Use the given dimensions in figures instead to scale.*

1. Answer the following Multiple Choice Questions. Print the correct choice on your drawing sheet.

(1 X 5= 5)

- (i) Which machine part is called as "HEADLESS BOLT"?
 - (a) Nut
 - (b) Screw
 - (c) Stud
 - (d) Rivet

- (ii) A Square drawn in isometric projection appears as?
 - (a) Square
 - (b) Rhombus
 - (c) Rectangle
 - (d) Trapezium

- (iii) In first angle projection the order of object, plane and observer, as viewed from the front is?
 - (a) Object, Plane and Observer
 - (b) Object, Observer and Plane
 - (c) Plane, Observer and Object
 - (d) Observer, Object and Plane

- (iv) What is the thread angle in degree of a Metric thread?
 - (a) 60°

(b) 45°

(c) 75°

(d) 90°

(v) In which type of bearing the Bush is split into two halves?

(a) Footstep Bearing

(b) Bushed Bearing

(c) Simple Plummer Block

(d) Open Bearing

2. (i) Construct an isometric scale of length 70 mm. **(4)**

(ii) Draw the isometric projection of the frustum of triangular pyramid having top base edge 30 mm and bottom base edge 50 mm with a height of 70 mm resting on its longer base keeping one of its base edges parallel to the V.P. and nearer to the observer. Give the direction of viewing, axis and dimensions. **(7)**

(iii) Draw an Isometric Projection of a square pyramid resting vertically and centrally on the top pentagon face of a pentagonal prism, having one rectangular face parallel to V.P. while nearer to the observer. Side of the square base = 30 mm, height of pyramid = 50 mm, side of the pentagon = 35 mm and height of the prism = 50 mm. Give the direction of viewing, axis and dimensions. **(13)**

3. (i) Draw to scale 1:1 the standard profile of a **Metric Screw Thread(external)**, taking enlarged pitch 45 mm. Give standard dimensions. **(8)**

OR

Draw to scale 1:1 the Front view and Plan of a **Square Headed Bolt** when its axis is perpendicular to H.P. Take the diameter of the bolt as 24mm, and length as 110 mm. Give standard dimensions.

(ii) Sketch freehand the front view and top view of a **60° Counter Sunk Head Rivet** of diameter 20 mm. Keep the axis vertical. Give standard dimensions. **(5)**

OR

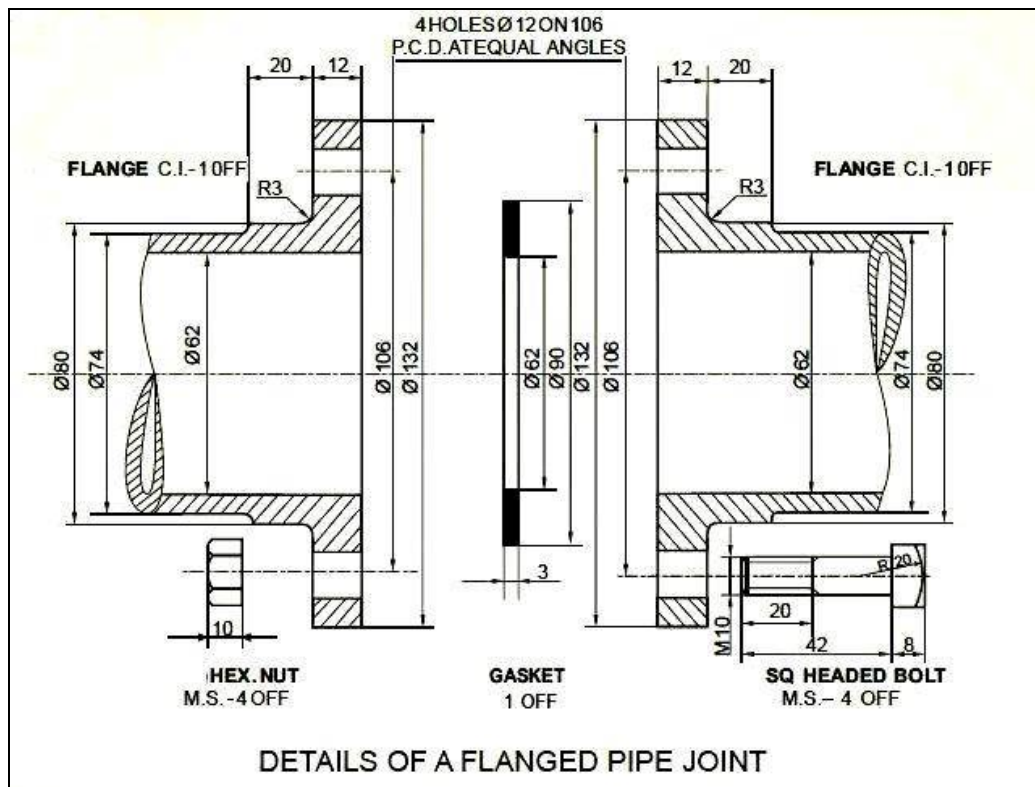
Sketch freehand the Front view and Top view of a **Plain Stud** of diameter = 20mm, keeping its axis vertical. Give standard dimensions.

4. The figure given below, shows the details of the parts of a **Flanged Pipe joint**. Assemble these parts correctly and then draw, to scale 1:1, its following views:

(i) Front view, top half in section (14)

(ii) Side view as viewed from left. (8)

Write title and scale used. Draw projection symbol. Give 6 important dimensions. (6)



OR

The figure given below shows the assembly of an 'Open Bearing'. Disassemble the parts and draw the following views to scale 1:1:

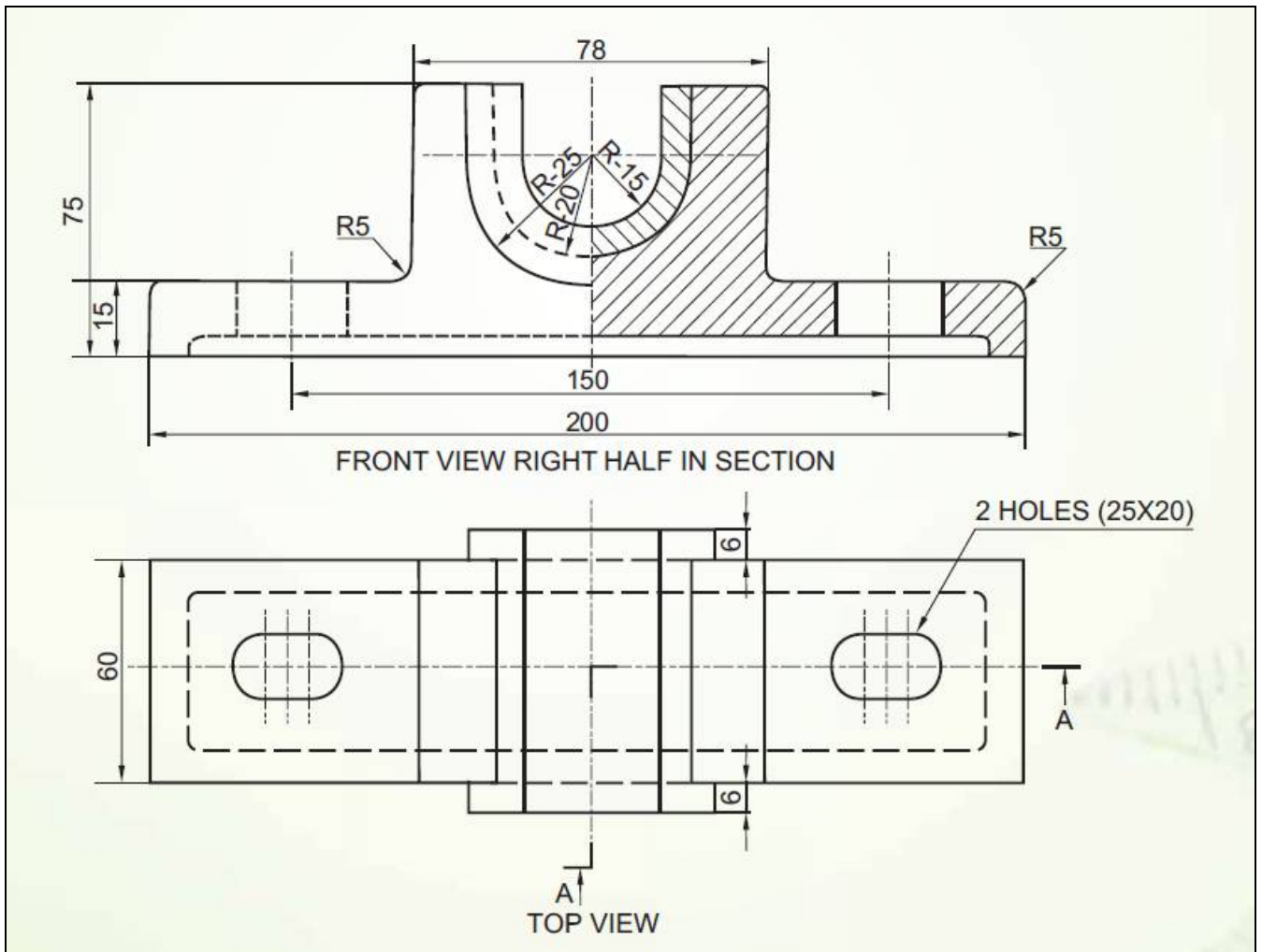
(a) BODY (14)

- (i) Front view, left half in section.
- (ii) Top view, without section.

(b) BUSH (8)

- (i) Front view, left half in section.
- (ii) Side view, viewing from left.

Print titles of both and the scale used. Draw the projection symbol. Give '6' important dimensions. (6)



OPEN BEARING