PRE-BOARD EXAMINATION-2020-21

SUBJECT – ENGINEERING GRAPHICS

Class: XII (CBSE) **Total Marks: 80**

Date……. **Time: 3 hrs.**

General Instructions:

(i) Attempt all the questions.

(ii) Use both sides of the drawing sheet, if necessary.

(iii) All dimensions are in millimeters.

(iv) Missing and mismatching dimensions, if any, may be suitably assumed.

(v) Follow the SP: 46- 2003 revised codes (with First angle method of projection).

(vi) In no view of question 2, hidden edges or lines are required.

(vii) In question 4, hidden edges or lines are to be shown in views without section.

(viii) Give your answers according to questions.

1. Answer the following multiple choice questions. Print the correct choice on your drawing sheet. **(5)**

(i) An inclined edge in isometric projection is drawn by

a) Using angle of inclination b) Drawing a line at 30^0 to the horizontal

c) Drawing a line at 90^0 to the vertical d) Using the co-ordinates

(ii) Name the thread profile used on the neck of glass bottles etc.

a) Metric thread b) Square thread

c) BSW thread d) Knuckle thread

(iii) Cut on the outer surface of a circular rod are called

a) The threads Crest thread b) External thread

c) Root thread d) Internal thread

(iv) Name the material of the bush in the bush-bearing.

a) Gun metal b) High carbon steel

c) Cast iron d) Mild steel

(v) Which one of the following is represented by thin continuous lines?

a) Centre lines b) Visible lines

c) Extension lines d) Hidden lines

2. (i) Construct an isometric scale. **(4)**

(ii) Construct the isometric projection of a right regular hexagonal prism, with side of the hexagonal base = 40 mm and height of axis = 50 mm, resting on H.P. on its base, with two of its opposite rectangular faces, parallel to V.P. and axis perpendicular to H.P. Draw the axis and indicate the direction of viewing. Give all dimensions. **(7)**

(iii) A hexagonal prism of base edge=30 mm and height=60 mm with two base edges perpendicular to V.P. is placed centrally and vertically on top of a cylinder of diameter= 50 mm and height =40 mm. Draw the Isometric projection of the combination. Draw the common axis and indicate the direction of viewing. Give all the dimensions. **(13)**

3. (i) Draw to scale 1 : 1, the standard profile of a **METRIC SCREW THREAD** (external), taking an enlarged pitch = 50 mm. Give all the standard dimensions. **(8)**

OR

Draw to scale 1:1, the front view and top view of a **Hexagonal Nut** of diameter 25 mm, keeping the axis perpendicular to H.P. Give standard dimensions.

(ii) Sketch free hand the front view and top view of a **Snap Head Rivet** of diameter 30mm, taking its axis vertical. Give all the standard dimensions. **(5)**

OR

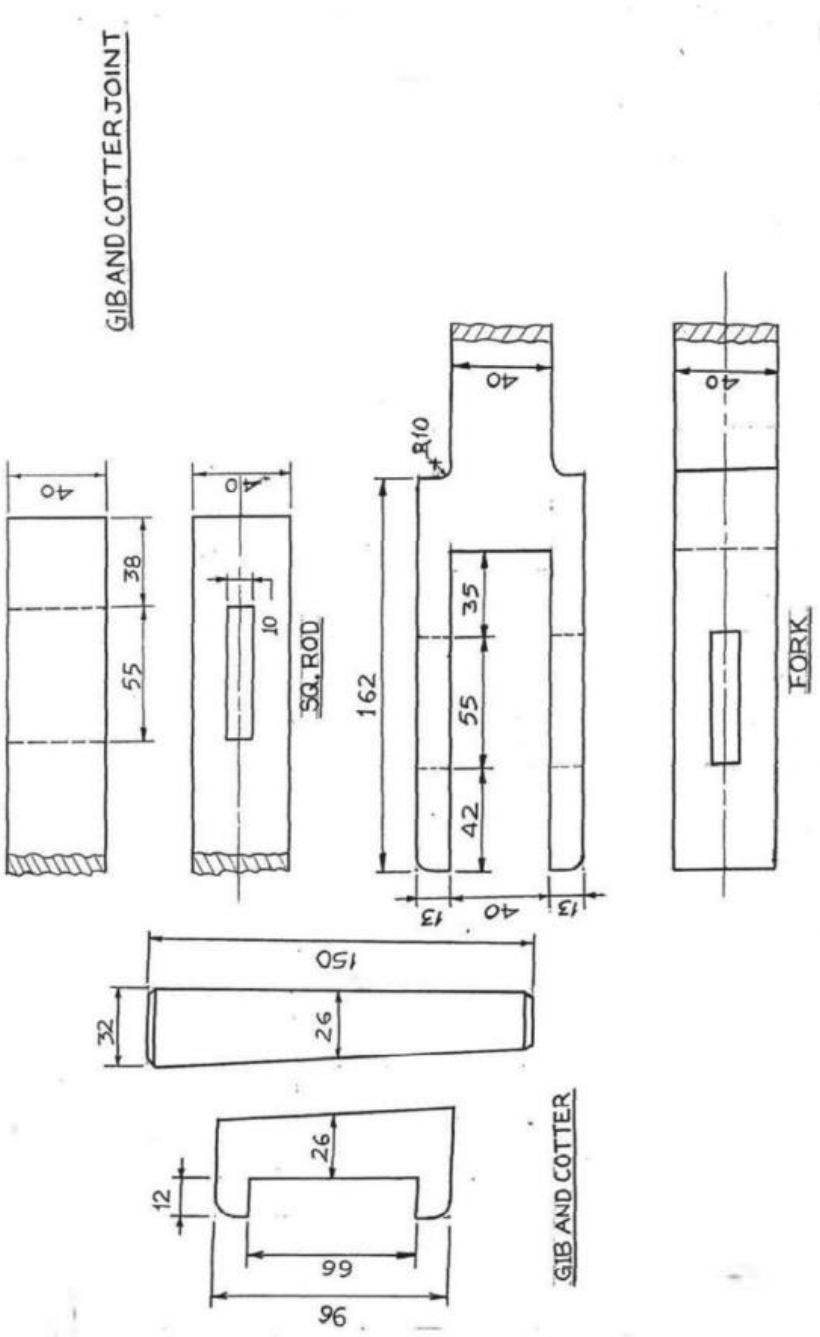
Keep the axis parallel to both H.P. and V.P. sketch freehand the front view and side view of a **Plain stud** of diameter 20 mm. Give standard dimensions.

4. Figure shows the detail drawings of different parts of **GIB AND COTTER JOINT** for joining two square rods. Assemble all the parts correctly and draw the following views to scale 1:1. **(14)**

(a) Front View, Upper Half in section. **(8)**

(b) Side View, viewing from the left hand side. **(6)**

Print title, scale used and draw the projection symbol. Give '8' important dimensions.



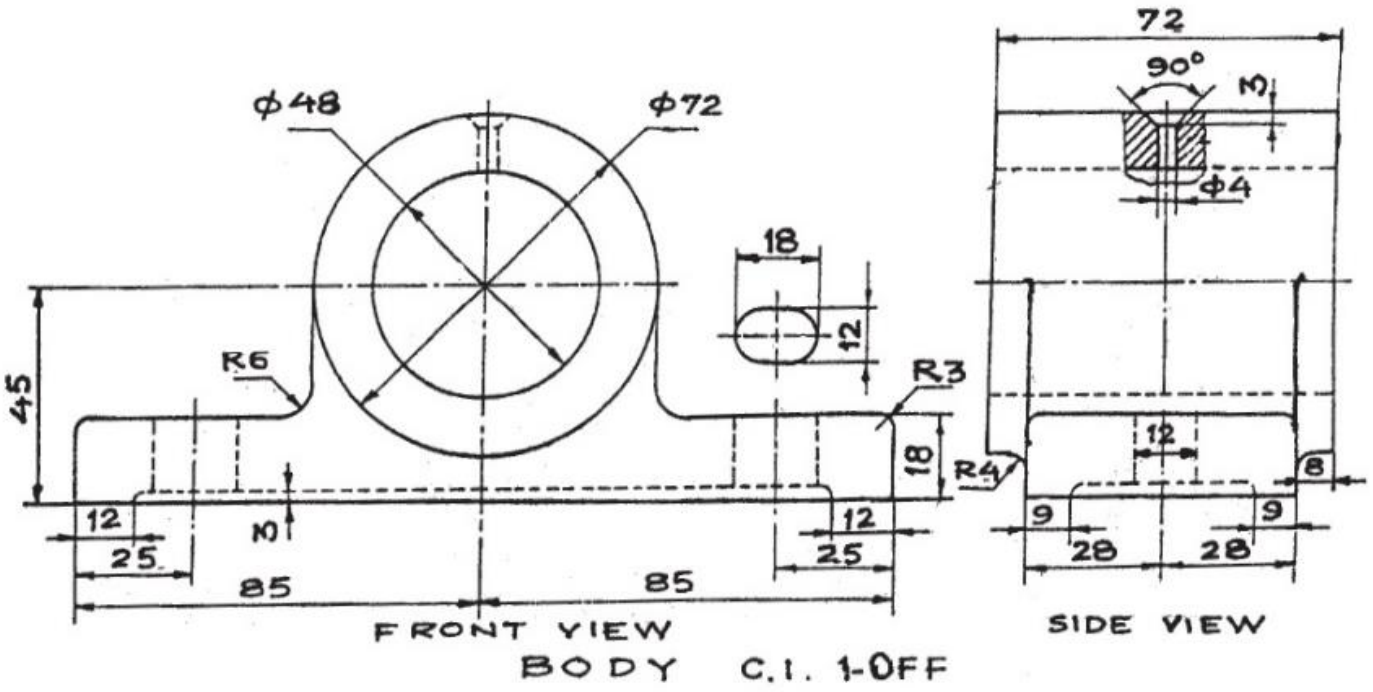
OR

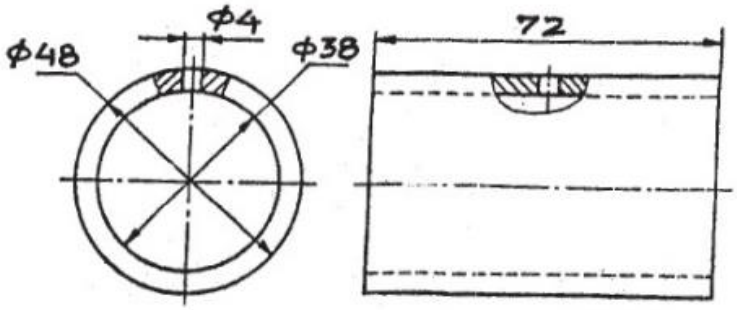
Fig. 2 shows the details of the parts of a **Bush Bearing**. Assemble these parts correctly and then draw its following views to scale 1 : 1 : **(14)**

(a) Front view, right-half in section. **(8)**

(b) Top view **(6)**

Print title and scale used. Draw projection symbol. Give six important dimensions.





DETAILS OF BUSH BEARING

FIG. NO 2

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