## INDIAN SCHOOL AL WADI AL KABIR
## SAMPLE PAPER 1

**CLASS: XII**                                                               **MM:70 marks**
**Time: 3 hrs.**

### ENGINEERING GRAPHICS (046)

**General Instructions:**

i. Attempt all the questions.
ii.Use both sides of the drawing sheet, if necessary.
iii.All dimensions 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.Number your answers according to questions.

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                                                                                **5 x 1 = 5**

**Q.1.**i) Lines which are parallel to the isometric axes are called as --------

  a) Parallel lines                                    b) Isometric lines

  c) Vertical lines                                    d) Slant lines


  ii) Which one of the following is not a V- thread profile?

  a)  BSW thread                                    b) Metric thread external

  c)  Square thread                                  d) Metric thread internal


  iii)  A machine element which supports and guides a rotating shaft is called:


  a) Pulley                                          b) Cotter


  c)  Coupling                                        d) Bearing


iv) Gib is always provided in conjunction with:
  a) Cotter                                          b) Bolt


  c) Rivet                                           d) Key

v) For joining cables, ropes and wires of electric poles, which one of the following is an adjustable temporary joint?

a) Knuckle joint

b) Flange pipe joint

c) Tie – Rod joint

d) Cotter joint

**Q.2**. (a) Construct an isometric scale of length 80 mm. **4**

(b) Draw the isometric projection of a cylinder of 75 mm and diameter of 50 mm resting on its base keeping the axis parallel to VP. **8**

(c) Draw an isometric projection of hemisphere resting centrally on its curved surface, on the top horizontal rectangular face of an equilateral triangular prism, keeping two triangular faces parallel to the VP. Side of equilateral triangle = 50mm, length of the prism = 70 mm and diameter of the hemisphere = 60 mm. **12**

**Q.3.** (a) Draw to scale 1:1, the standard profile of a Metric thread Internal taking enlarged pitch as 50 mm. Give standard dimensions. **8**

**OR**

Draw to scale 1:1, the front view, top view and side view of a hexagonal nut of size M30, keeping the axis perpendicular to HP. Give standard dimensions.

(b) Sketch free hand the front view and top view of a Flat head Rivet of diameter 20 mm, keeping its axis vertical. Give standard dimensions. **5**

**OR**

Sketch free hand the front view and side view of a Collar stud with diameter 20 mm, when its axis is parallel to VP and HP. Give standard dimensions.
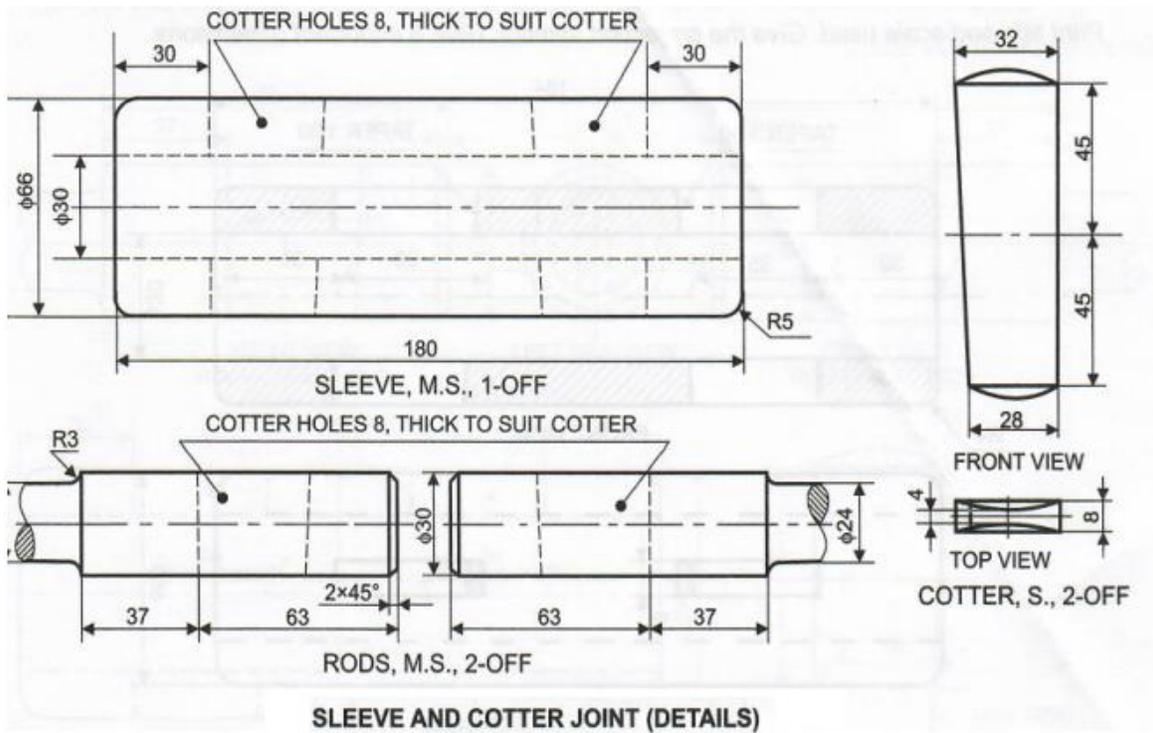
**Q.4.** The figure shows the details of the parts of a Sleeve and Cotter Joint. Assemble these parts correctly and then draw the following views to scale 1:1.

 (a) Front view upper half in section,

 (b) Right hand side view

 (c) Print titles and scale used. Draw projection symbol. Give 8 main dimensions.          **28**



SLEEVE AND COTTER JOINT (DETAILS)

**OR**

The figure shows the assembly of the parts of a flanged pipe joint. Disassemble the parts and draw the following views of the components to scale 1:1, keeping them in the same position with respect to HP and VP.

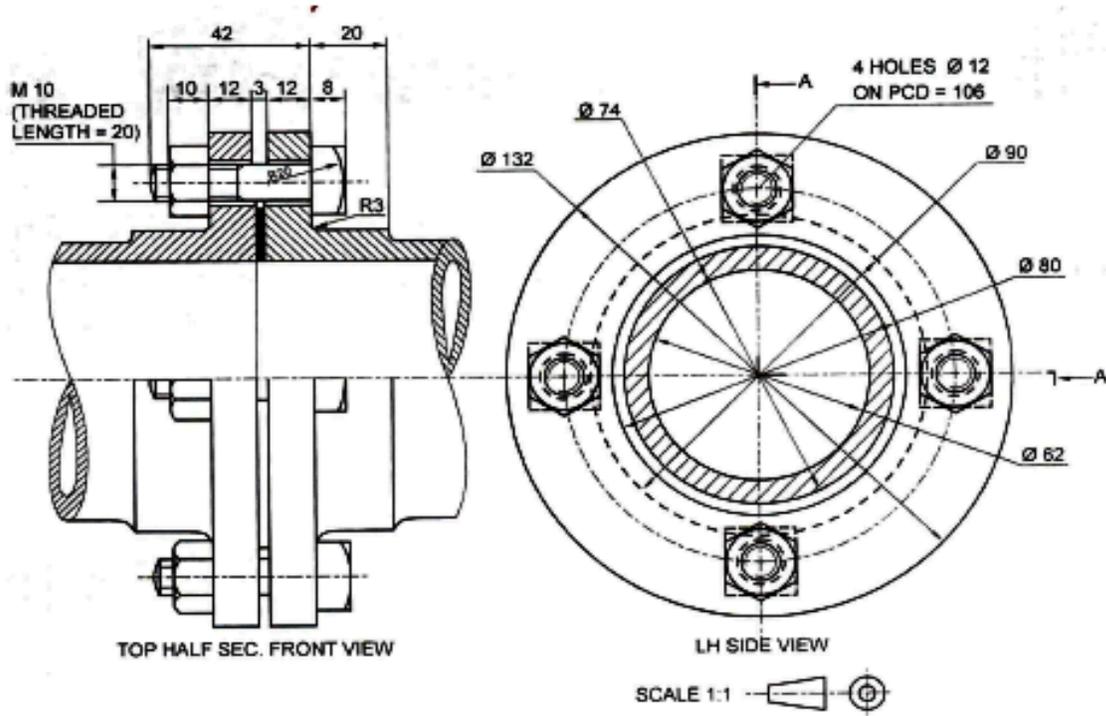(i) Flange B

   a) Front view, upper half in section

   b) Right hand side view

(ii) Gasket

       a) Full sectional front view

       b) Left hand side view

       c)Print the titles of both and scale used. Draw the projection symbol and give 6 important

       dimensions.



**ASSEMBLY OF A FLANGED PIPE JOINT**

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