INDIAN SCHOOL MUSCAT
FINAL TERM EXAMINATION
ENGINEERING GRAPHICS

CLASS: XII   Subject Code: 046   Time Allotted: 3 Hrs
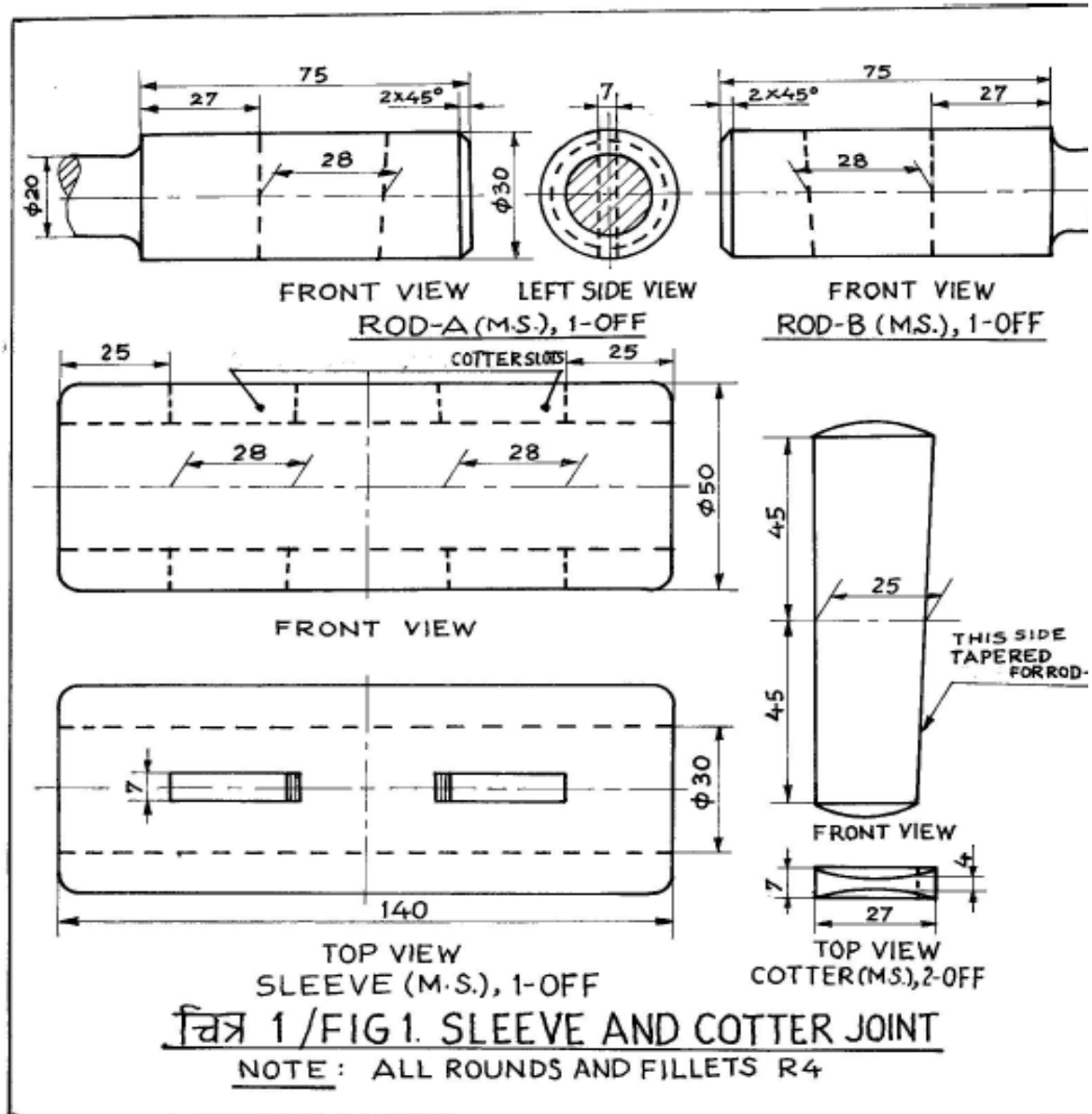
13.11.2018   Maximum Marks: 70

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 question2, are hidden edges or lines required.
(vii) In question 4, hidden edges or lines are to be shown in views without section.
(viii) Number your answers according to questions.

1.   Answer the following Multiple-Choice questions. Print the correct choice on your drawing sheet.   5

     I.   Which packing material is used in pipes, to keep it tight and leak proof?
          a)   Nut   b) Bolt   c) Rivet   d) Gasket

     II.   Which key is used to prevent slackening of the joint besides holding the jaws of strap from opening wide when the cotter is used?
          a)   Woodruff Key   b) Rectangular Taper Key
          c) Double headed feather Gib Key   d) Cotter Key

     III.   In isometric projection, the three principal axes are inclined at what angles with the horizontal base line?
          a)   30°,90°,60°   b) 30°,120°,30°   c) 60°,90°,60°   d) 30°,90°,30°

     IV.   All screw threads are based upon the curve?
          a)   Helix   b) Involute   c) Parabola   d) Cycloid

     V.   A key seat is a slot cut in the hub of a rotating part and in shaft to insert a
          a)   Wheel   b) Washer   c) Key   d) Sleeve and Cotter Joint

2.   a)   Construct an isometric scale of length 110 mm   3

    b)   Draw the isometric projection of a frustum of a pentagonal pyramid having longer base side 40 mm and shorter base side 30 mm with axis of 70 mm resting on its longer base side base keeping one of its base side parallel to the V.P. and nearer to the observer.   7

    c)   Draw an isometric projection of a vertical regular hexagonal pyramid resting vertically and centrally having two of its base edge's perpendicular to V.P on the top rectangular face of a horizontal square prism with its square end's perpendicular to V.P. Side of the square = 50 mm, length of the prism = 100 mm, side of the hexagon = 30 mm and height of the pyramid = 60 mm.   14

3. Draw to scale 1:1, the standard profile of metric screw thread (internal) taking enlarged pitch as 50 mm. Give standard dimensions.   8

4. Sketch freehand the front view and top view of a cheese head screw of size M20, keeping its axis vertical. Give standard dimensions.   5

5. Figure shows the details of the parts of a SLEEVE AND COTTER JOINT. Assemble these parts correctly, and the draw the following views using scale 1:1   28
     i.   Front view, lower half in section.
     ii.   Right hand side view.
     iii.   Print the title and the scale used. Draw the projection symbol.

FRONT VIEW   LEFT SIDE VIEW
ROD-A (M.S.), 1-OFF

FRONT VIEW
ROD-B (M.S.), 1-OFF

FRONT VIEW

TOP VIEW
SLEEVE (M·S.), 1-OFF

FRONT VIEW

TOP VIEW
COTTER (M.S.), 2-OFF

चित्र 1 / FIG 1. SLEEVE AND COTTER JOINT

NOTE : ALL ROUNDS AND FILLETS R4

End of the Question Paper