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# INDIAN SCHOOL MUSCAT FIRST PRELIMINARY EXAMINATION ENGINEERING GRAPHICS 

CLASS: XII
17.01.2019

Subject Code: 046

## General Instructions:

(i) All dimensions are in millimeters.
(ii) Missing and mismatching dimensions, if any, may be suitably assumed.
(iii) Follow the SP: 46-2003 revised codes (with first angle method of projection).

1. Answer the following Multiple-Choice questions. Print the correct choice on your drawing sheet.
I. An external thread is represented by
a) Discontinuous, Minor diameter circle
b) Continuous, Minor diameter circle
c) Discontinuous, Major diameter circle
d) Continuous, Major diameter circle
II. The length of a bolt is its total length
a) Including the height of bolt head
b) Excluding the width of chamfering circle
c) Including the thickness of bolt head
d) Excluding the height and thickness of bolt head
III. Which is the modified form of square thread?
a) V-Thread.
b) Metric Thread.
c) Knuckle Thread.
d) B.S.W Thread
IV. 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.
V. Name the portion between the rim and the hub of a cast iron pulley
a) Shaft.
b) Gap.
c) Bush.
d) Web.
2. a) Construct an isometric scale of length 110 mm
b) Construct an isometric projection of the frustum of a cone, having its axis perpendicular to the HP. The top diameter $=40 \mathrm{~mm}$ and base diameter $=50 \mathrm{~mm}$ and height of frustum is 70 mm . Give all dimensions. Draw the axis.
c) A square pyramid of 30 mm base edge and 60 mm high with two base edges parallel to VP is centrally placed on the top face of a triangular prism of base edge 50 mm and height 40 mm resting on the HP having vertical axis with one base edge, in front, parallel to VP. Draw an isometric projection of the combination of the solids. Draw the common axis and indicate the direction of viewing. Give all the dimensions.
3. Draw to scale $1: 1$, the front and side view of an assembly of a SQUARE HEADED BOLT (Across flats) of nominal diameter, $\mathrm{d}=30 \mathrm{~mm}$, with a hexagonal nut (Across corners) and a washer, keeping the axis horizontal. Length of the bolt $=120 \mathrm{~mm}$, threaded portion of bolt $=80 \mathrm{~mm}$ and thickness of washer $=4 \mathrm{~mm}$. Give all the standard dimensions.
4. Sketch freehand the front view and the top view of a round head machine screw of diameter $=20$ keeping its axis vertical. Give all the standard dimensions.
5. Figure shows the parts of a Protected flange coupling (having socket and spigot arrangement).

Assemble these parts correctly and then draw the following views to a scale full size:
i. Front view, upper half in section.
ii. Right hand side view.

Print the title and the scale used. Draw the projection symbol.


## End of the Question Paper

