Roll Number		

Code Number 46/2

INDIAN SCHOOL MUSCAT
FIRST PRELIMINARY EXAMINATION 2017
ENGINEERING GRAPHICS

CLASS: XII | Sub. Code: 046 | Time Allotted: 3 Hrs

14.12.2017 | Max. Marks: 70

General Instructions:

1. ***Attempt all questions.***
2. ***Follow SP-46-1988 Codes. Use first angle method of projection.***
3. ***Missing and mismatching dimensions should be assumed suitably.***
4. ***All dimensions are in millimeters.***
5. ***In no view of question 2, hidden edges/lines are required.***
6. ***Number your answer figures according to your questions.***
7. ***In question 4, hidden lines or edges are to be shown in the views without section.***

1. Answer the following multiple choice questions. Print the correct choice on your drawing sheet.

I. Which Machine part is a small cylindrical piece of a metal having a head, body and a tail and while adjoining two parts, the tail is made into the form of head.

a) Snug b) Rivet
c) Both a and b d) None of these

II. Which Machine part having key seat is semicircular in shape but the keyway is rectangular.

a) Wood ruff Key b) Cotter
c) Both a and b d) None of these

III. The groove cut on the shaft to accommodate a key is called

a) Flange b) Pitch
c) Keyway d) Load

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IV. The convex curvature tends to keep the belt in the middle of the rim is called as

a) Chamfering b) Caulking
c) Fullering d) Crowning

V. _____ is the device used to join two shafts end to end or to increase the length of the shaft or to connect shafts of different machines.

a) Coupling b) Riveting
c) All of these d) None of these

2.(a) Construct an Isometric scale of length 80 mm. 3

2.(b) Draw the isometric projection of an inverted hexagonal pyramid (base hexagonal edge = 30 mm, top hexagonal edge = 50 mm, height 80 mm) with two base edges perpendicular to V.P and its axis perpendicular to the H.P. Give all the dimensions and indicate the direction of viewing. 7

2.(c) An upright cone (diameter = 50 mm and height 70 mm) is placed centrally on the top rectangular face of a pentagonal prism (base side = 50 mm and axis = 80 mm). The pentagonal prism is resting on one of its face edges on H.P with axis parallel to V.P and H.P both. Draw the isometric projection of this combination of solids. Give the dimensions and indicate the direction of viewing. 14

3. Draw to scale 1:1, the front view and side view of the assembly of square headed bolt with a hexagonal nut and a washer, with the diameter of bolt as 30mm, keeping their axis parallel to V.P and H.P and two of the opposite sides of the square head of the bolt and of the hexagonal nut, parallel to V.P. 8

4. Sketch freehand the Front view and Top view of a grub screw of size M2O, keeping its axis vertical. Give standard dimensions. 5

5. Assemble the Protected Flange Coupling, Shaft with Nut –Bolt as shown in Fig-1 and draw the following views. 28

a) Front view, Lower half in section.
b) Side view looking from the Right end.
c) Give 8 important dimensions, Title, Projection symbol and Scale