Roll Number		

SET A

INDIAN SCHOOL MUSCAT
FINAL EXAMINATION
ENGINEERING GRAPHICS

CLASS: XII
21.11.2019

Sub. Code: 046

Time Allotted: 3 Hrs.
Max. Marks: 70

General Instruction: -

i) Attempt all the questions.
ii) Follow the SP: 46-2003 codes. (with first angle method)
iii) Missing and mismatching dimension if any may be assumed suitably.
iv) All dimensions are in millimeters.
v) Use both side of the drawing sheet, if necessary.

Q.1 Answer the following Multiple Choice Questions. Print the correct choice on your drawing sheet. 5

(i) To show the threaded hole in a NUT, the axial view consists of
- a) Two Thick circles
- b) Internal circle thick and the external as dotted
- c) Internal circle thick and the external circle as thin and broken
- d) Internal circle thin and external as thick and broken

(ii) Cut on the outer surface of a circular rod are called as
- a) The threads crest thread
- b) Root thread
- c) Internal thread
- d) External thread

(iii) Which of the following is represented by thin continuous lines?
- a) Centre lines
- b) Visible lines
- c) Extension lines
- d) Hidden lines

(iv) What is the purpose of an open bearing?
- a) To join two pipes
- b) To support the moving shaft
- c) To join two shafts
- d) To support the pipes

(v) Protected flange coupling is better than the unprotected flange coupling with regard to
- a) Protection from dirt
- b) Protection from water
- c) Protection from fire hazards
- d) Ensure safety

Q.2. (i) Construct an isometric scale of length 80mm. 3

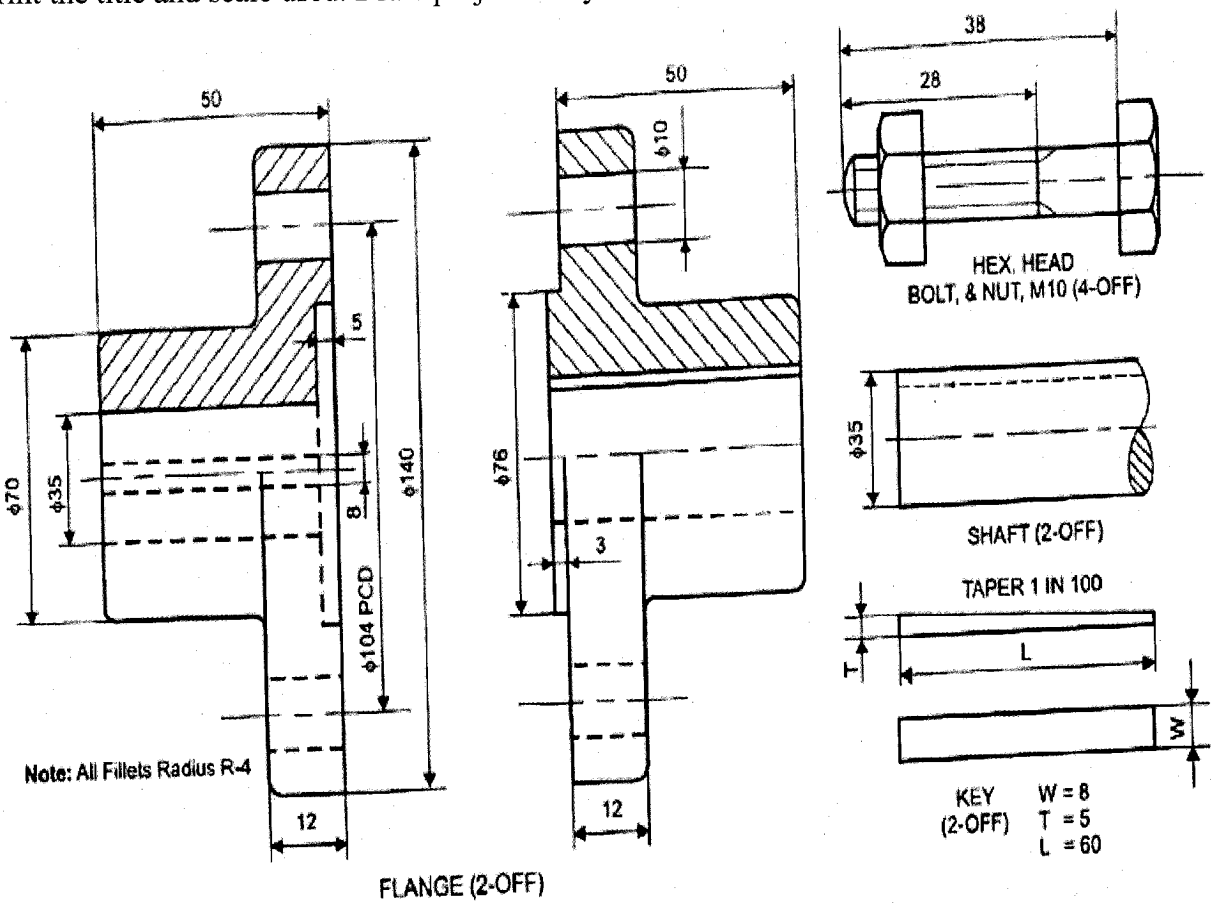
(ii) Draw an isometric projection of the frustum of a cone, having its axis perpendicular to the H.P. The upper diameter = 40 mm, lower diameter = 50 mm and height of frustum is 70 mm. Give all dimensions. Draw the axis and indicate the direction of viewing. 7

(iii) An upright Square Pyramid of 30 mm base edge and 60 mm height with two base edges parallel to V.P., is centrally placed on the top triangular face of a Triangular Prism of base edge 50 mm and height 40 mm resting on the H.P. having vertical axis with one base edge parallel to V.P. and nearer to the observer. Draw an isometric projection of the combination of the solids. Draw the common axis and indicate the direction of viewing. Give all the dimensions. 14

Q.3. Draw to scale 1:1, the standard profile of BSW thread, taking enlarged pitch as 30mm. Give standard dimensions. 8

Q.4. Sketch freehand the front view and top view of a socket head machine screw of size M10, keeping its axis perpendicular to H.P. Give standard dimensions. 5

Q.5. Figure, shows the details of the parts of a **UNPROTECTED FLANGE COUPLING**. Assemble these parts correctly and then draw to scale 1:1 its following views : 28
(i) Front view, upper half in section
(ii) Side view as viewed from left.
Print the title and scale used. Draw projection symbol.



Note: Figure not to scale. Use the given dimensions for drawing the solutions.

Fig. 1 **UNPROTECTED FLANGE COUPLING**

End of the Question Paper

Roll Number		

SET B

INDIAN SCHOOL MUSCAT
FINAL EXAMINATION
ENGINEERING GRAPHICS

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

21.11.2019 | Max. Marks: 70

General Instructions:

(i) All dimensions are in millimetres.

(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)

(iv) In no view of question 1, are hidden edges or lines required.

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

Q1 a) Construct an isometric scale. 03

(b) Draw the isometric projection to isometric scale of an inverted hexagonal pyramid of side 38 mm and height 75 mm, having one of the base sides perpendicular to VP. Indicate the direction of front view and mark all dimensions. 07

(c) Draw the isometric projection to isometric scale of the combination of a cone (diameter 44mm and height 60mm) resting vertically and centrally on the rectangular face of a pentagonal prism (side 34mm and height 80 mm).One of the side of the pentagon is perpendicular to VP. Indicate the direction of view and mark all dimensions. 14

Q2 a) Draw to scale 1:1, the sectional front view of a single rivet lap joint when the thickness of the plates to be joined is 25mm. 08

b) Sketch freehand the front view and top view of a socket head machine screw of diameter 25 mm keeping its axis vertical. Give standard dimensions. 05

Q3 Answer the following Multiple Choice Questions. Print the correct choice on your answer sheet 05

(i) Which of the following keys can easily be adjusted in the recess?

a. Rectangular taper key b. Woodruff key

c. Double headed feather key with gib head d. Cotter

(ii) Isometric view is a kind of .....

a. Perspective projection b. Oblique projection

c. Axonometric projection d. None of the above

(iii) The surface connecting crest and root is called .....

a. Pitch b. Crest c. Root d. Flank

(iv) The keys in the shafts for the couplings are placed perpendicular to each other to.....

a. Ensure proper alignment b. Make the joint intact.

c. Avoid sliding of one key into another d. None of the above

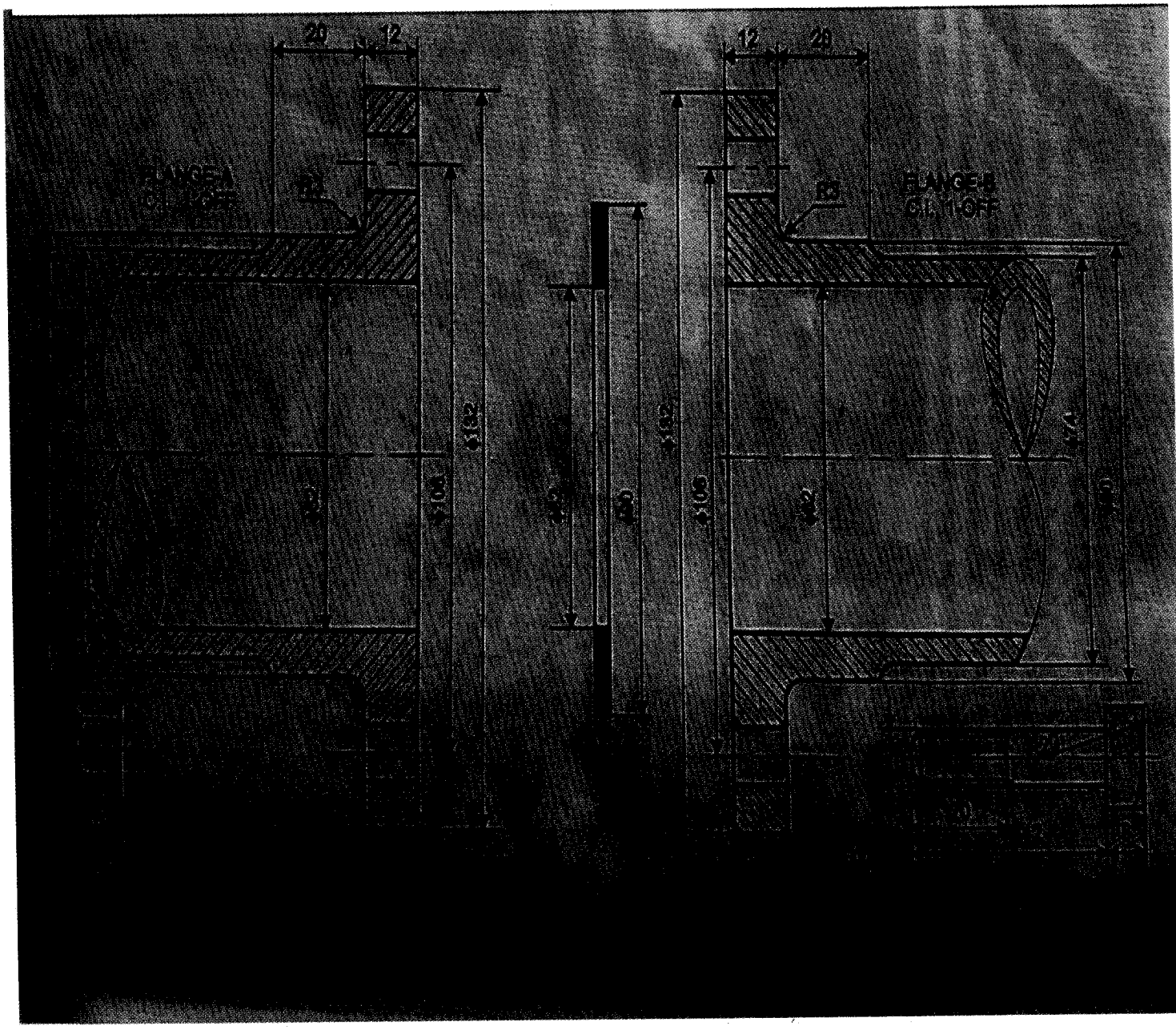
(v) In ..... Bearing the shaft is inserted end wise.

a. Open b. Bushed c. Both open and bushed d. None of the

Q4. Fig 1 shows details of ***FLANGED PIPE JOINT***. Assemble the parts correctly and draw the following views to scale 1:1. 28

a. Front view, lower half in section b. Left side view.

Print title and scale used. Draw the projection symbol and mark all dimensions.



End of the Question Paper