

Pre-Board - 1, 2019-20
Engineering Graphics (046)
Class – XII

Max. Marks: 70

Date: 16 /01/2020

Time Allowed: 3 Hrs.

General Instructions:

1. Attempt all the questions.
2. Use both sides of the drawing sheet, if necessary.
3. All dimensions are in millimeters.
4. Missing and mismatching dimensions, if any, may be suitably assumed.
5. Follow the SP: 46, 2003 revised codes. (with First angle method of projection)
6. Number your answers according to questions.

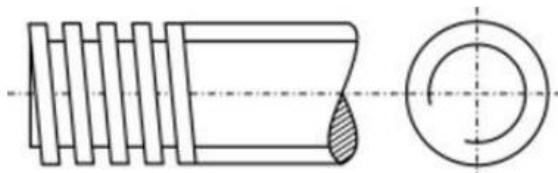
SECTION-A

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

i. The dimension lines are drawn as? [1]

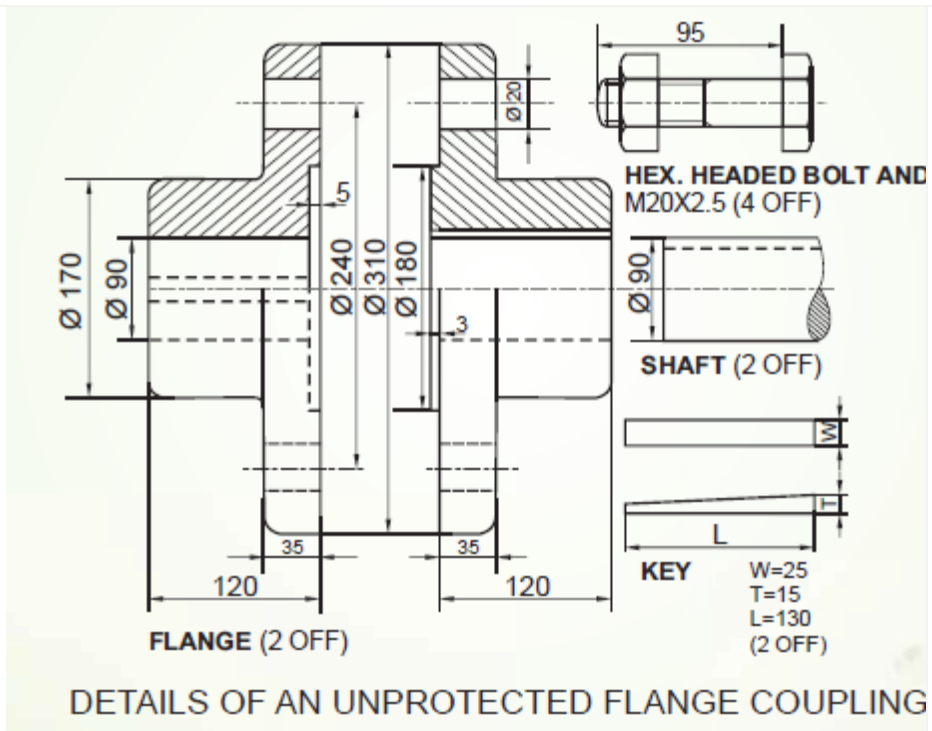
(a) Small dash lines
(b) Chain lines
(c) Wavy lines
(d) Thin continuous lines

ii. The figure given below shows the conventional representation of which threads? [1]



	<ul style="list-style-type: none"> (a) External square threads (b) External V-threads (c) Internal square threads (d) Internal V- threads 	
iii.	<p>Why Gib head is provided on a Gib head key?</p> <ul style="list-style-type: none"> (a) To facilitate the withdrawal of the key without disturbing the setting of the Hub. (b) For lubrication purpose (c) For the aesthetic sense (d) To reduce the cost of manufacture 	[1]
iv.	<p>What is the purpose of an Open bearing?</p> <ul style="list-style-type: none"> (a) To join two pipes (b) To support the moving shaft (c) To joint two shafts (d) To support the pipes 	[1]
v.	<p>Solid cast iron pulley is attached to the shaft by means of a _____.</p> <ul style="list-style-type: none"> (a) Rivet (b) Bolt (c) Key (d) Stud 	[1]
2.	<u>SECTION-B</u>	
	Answer the following:	
(i)	Construct an Isometric Scale.	[4]
(ii)	A frustum of triangular pyramid (base edge 40 mm, top edge 30 mm and height 60 mm) is kept with its axis perpendicular to H.P. One of the base edges is nearer to the observer and is parallel to V.P. Draw its isometric projection. Show the axis and indicate the direction of viewing. Give all dimensions.	[7]
(iii)	A vertical hexagonal prism (base edge 20 mm, height 70 mm) is placed centrally on the top circular face of a hemisphere (Diameter 80 mm). Two base edges of the prisms are perpendicular to V.P. the common axis is perpendicular ot H.P. Draw the isometric projection of the combination of solids. Show the common axis and indicate the direction of viewing. Give all dimensions.	[13]

3. (i)	Draw to scale 1:1 the front view and top view of a Hook bolt of size M20, keeping the axis vertical. Give standard dimensions.	[8]
	Or	
	Draw to scale 1:1, the sectional front view of a Single riveted lap joint for joining the plates of thickness 16mm. Give standard dimensions.	
(ii)	Keep the axis vertical, sketch freehand the front view of a Hexagonal socket head screw of size M10. Give standard dimensions.	[5]
	Or	
	Keep the axis parallel to both H.P. and V.P. Sketch freehand the front view and side view of a Plain stud of diameter 20 mm. Give standard dimensions.	
4.	Figure shows details of an unprotected Flange Coupling. This figure shows one view, each of the part no. 1, 2 and 3 and two views of part no.4. Draw to a scale 1:1, the following orthographic views. (i) Elevation, upper half in section (ii) Right hand side view, without section. Print the title and the scale used. Draw the projection symbol. Give 8 important dimensions.	[14] [8] [6]



Or

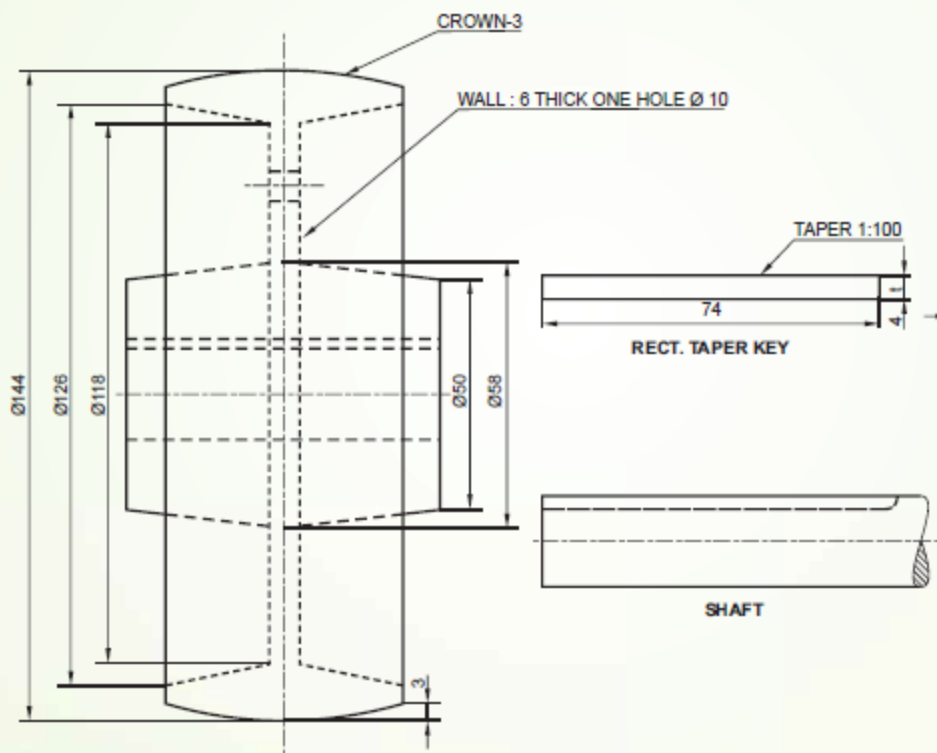
Draw the following Orthographic View of the properly assembled Solid C.I. pulley, shaft and Rectangular Taper Key. As shown in Fig.

- (a) Front view, upper half in section.
- (b) Side view.

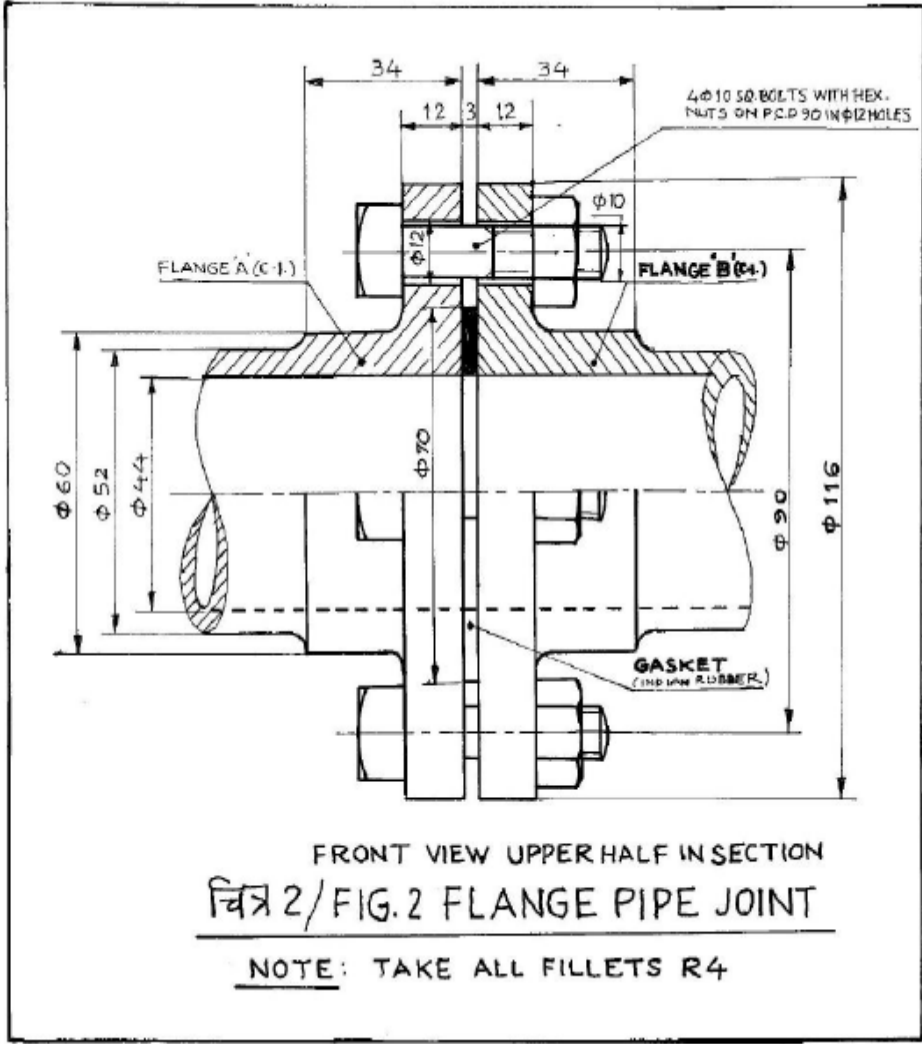
[14]
[8]

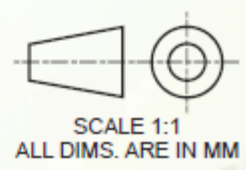
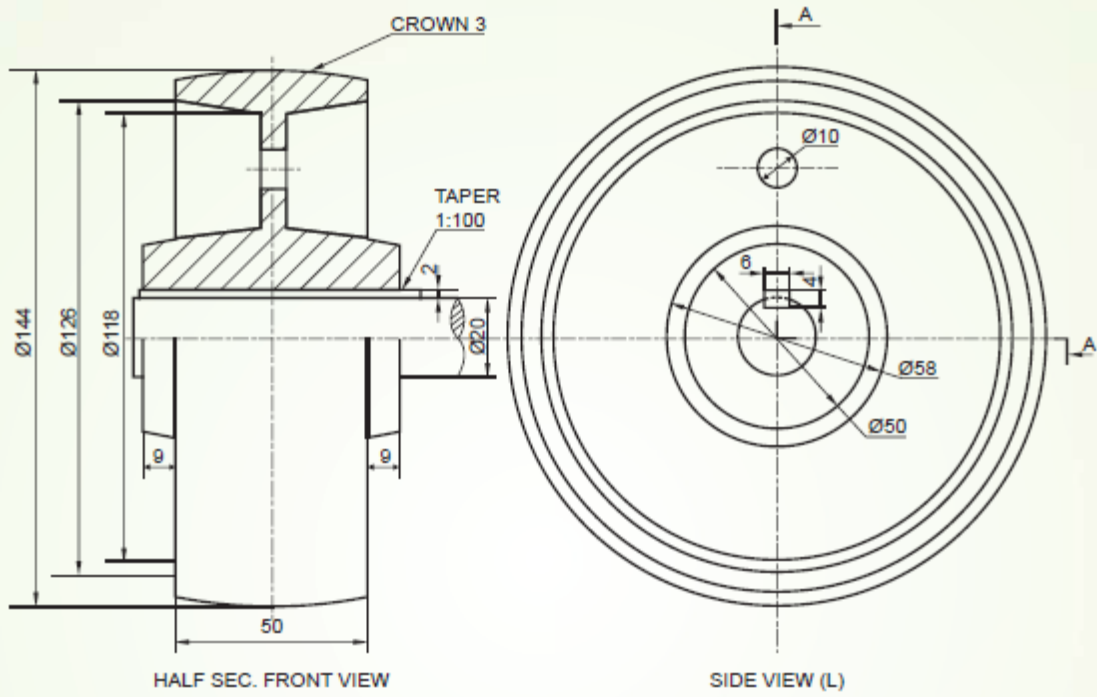
Print the titles of both and the scale used. Draw the projection symbol. Give 8 important dimensions.

[6]



DETAILS OF A SOLID CAST IRON PULLEY





SOLID C.I. PULLEY