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Total No. of Pages : 04

Total No. of Questions : 09

B.Tech.(AE/ANE/IE/ME) (Sem.-3rd)

MACHINE DRAWING

Subject Code : ME-207

Paper ID : [A0804]

Time : 4 Hrs.

Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

SECTION-A

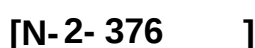
I. Write briefly :

- i. Draw the symbol of first angle projections.
- ii. Explain requirements of production drawing.
- iii. Write note on code IS:296.
- iv. Draw free hand sectional front view of woodruff key arrangement.
- v. Illustrate interference fit by drawing neat sketch.
- vi. What is Oldham's coupling?
- vii. What is union pipe joint?
- viii. Differentiate between pitch and lead.
- ix. Which materials are used to manufacture piston and connecting rod?
- x. Name various types of welded joints.

- 2) Draw double rivetted zig-zag lap joint of 12mm thick plates using snap headed rivets. Show at least three rivets in the plan view and add a sectional elevation. Mark the dimensions in term of the rivet diameter d .
- 3) Draw the three views of hexagonal headed bolt of size M24. The length of the bolt is 80mm and thread length is 54mm.
- 4) Draw the free hand sectional front view and side view of cotter joint.
- 5) Explain various conventional representations used for sectioning.
- 6) Draw free hand sectional front view of pipe flanged joint.

7) Following figure shows the details of a Hooke's Joint. Assemble the parts and draw the following views :

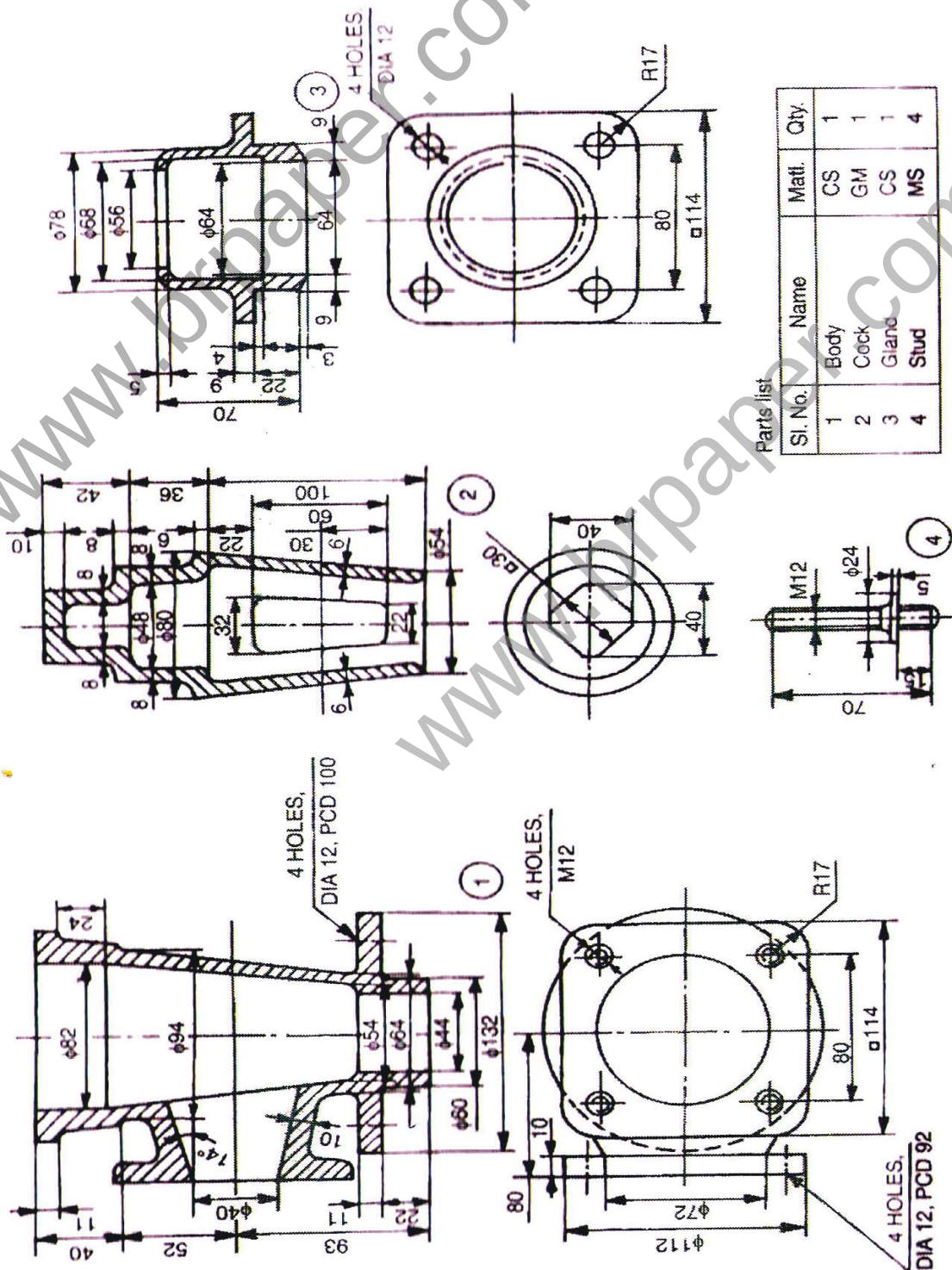
- (a) Front View (Upper Half Section)
- (b) Right Hand Side View



8) Following figure shows the details of a blow off valve. Assemble the parts and draw the following views :

(a) Front View (Left Half Section)

(b) Top View



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- Technical drawing of a mechanical assembly, showing six numbered parts and their dimensions.
- Part 1:** Main vertical body. Dimensions include: overall height 165, base diameter $\Phi 140$, base thickness 20, main body diameter $\Phi 100$, knurled section diameter $\Phi 65$ and length 45, and a recessed base with diameter $\Phi 100$ and depth 3. Material/finish: SQ 40x6 RH.
- Part 2:** Top cap. Dimensions include: overall height 9.9, central hole diameter $\Phi 12$, and outer diameter $\Phi 25$.
- Part 3:** Long threaded rod. Dimensions include: overall length 165, base diameter $\Phi 40$, and thread specification SQ 40x6 RH.
- Part 4:** Conical bush. Dimensions include: overall height 30, base diameter $\Phi 45$, and central hole diameter $\Phi 25$.
- Part 5:** Small circular washer. Dimensions include: outer diameter $\Phi 35$, inner hole diameter $\Phi 13$, and thickness 2.5.
- Part 6:** Small circular plug. Dimensions include: outer diameter $\Phi 12$, inner hole diameter $\Phi 12$, and height 1.5.
- Assembly Details:**
- Top cap (2) is secured with a screw (7) and a washer (5).
 - The main body (1) has a knurled section (3) for grip.
 - The base of the main body (1) is recessed (4) for mounting.
 - The threaded rod (3) passes through the main body (1) and the conical bush (4).
 - The conical bush (4) is secured with a plug (6).