No. of Printed Pages : 3

BIME-003

B.Tech. – VIEP – MECHANICAL ENGINEERING
(BTMEVI)

Term-End Examination

00639

December, 2017

BIME-003 : MACHINE DRAWING

Time : 3 hours *Maximum Marks : 70*

Note : *Question no.* **7** *is* ***compulsory****. Attempt any* ***three*** *questions from the remaining part. Use of scientific calculator is permitted.*

1. Describe the following terms with suitable examples : *7×2=14*

(a) Types of Lines

(b) Dimensioning Methods

(c) Part Drawing

(d) Orthographic Projection

(e) Sectional Views

(f) Scales

(g) Hidden Lines

2. Sketch how the following can be represented conventionally : *7×2=14*

(a) Glass

(b) Rubber

(c) Packing and Insulating Materials

(d) Internal Threads

(e) Slotted Head

(f) Diamond Knurling

(g) Holes on Circular Pitch

3. (a) Draw the different types of bolt heads. Take nominal dia of the bolt as 30 mm. Give all necessary proportions and uses. 7

(b) What are the functions of nuts and washers ? Draw free hand sketches of the following : 7

(i) Castle nut

(ii) Lock nut

(iii) Plain washer

(iv) Chamfered washer

4. (a) Draw the orthographic views of a gib head key suitable for a 50 mm diameter shaft. Also specify its functions and uses. 7

(b) Draw a free hand sketch of the sectional view from the front and from the side of a muff coupling. 7

5. (a) Sketch the front and top views of a double riveted lap joint for 9 mm thick plates when it has

(i) chain riveting, and

(ii) zigzag riveting. 7

(b) Describe the following terms with respect to a riveted joint using suitable examples : 7

(i) Pitch

(ii) Margin

(iii) Diagonal pitch

(iv) Overlap

6. (a) Differentiate between the following with suitable sketches : 7

(i) 2D and 3D Drawings

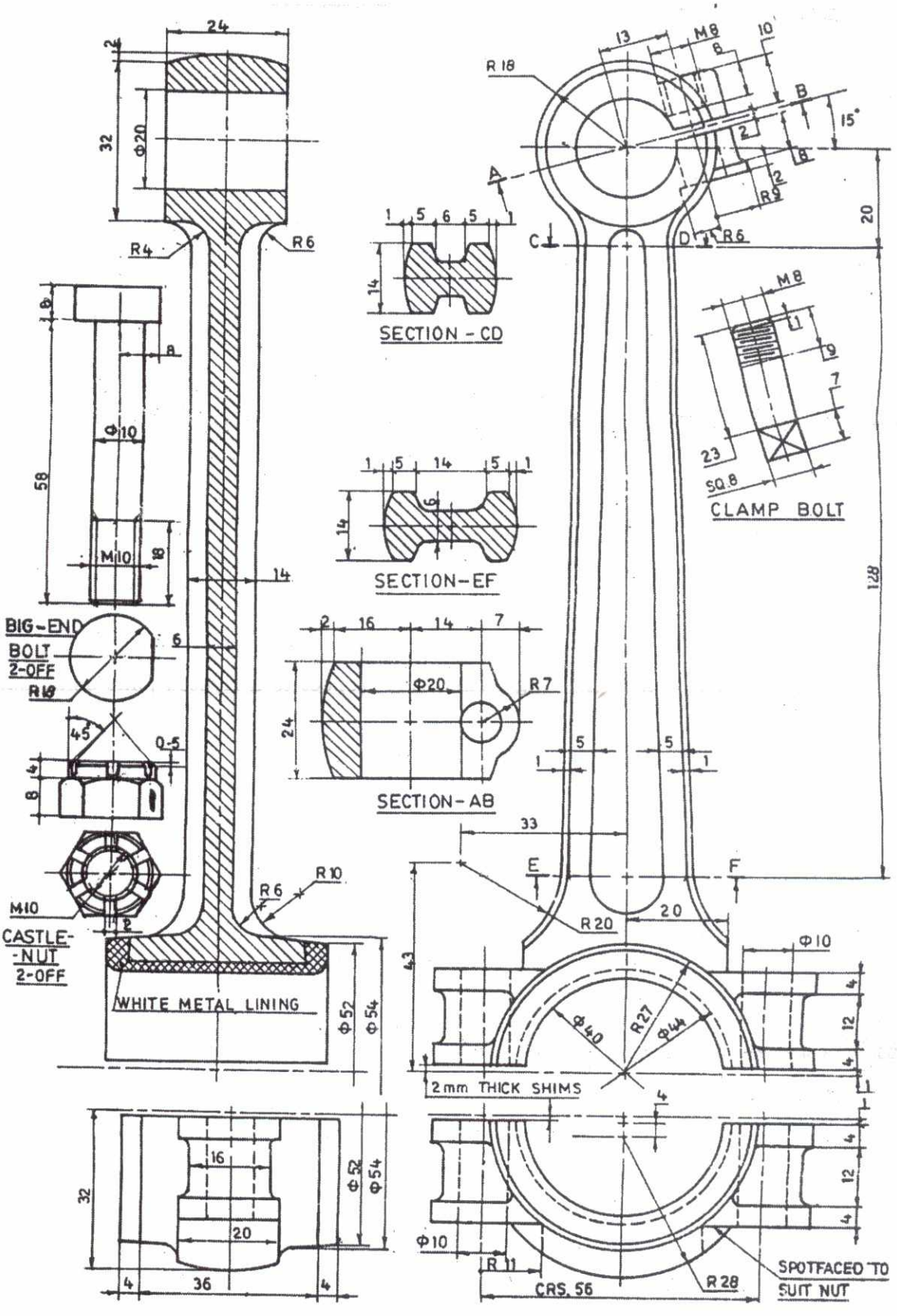
(ii) Wire-frame modelling and Solid modelling

(b) A gear has 30 teeth of involute profile, pitch circle diameter of 180 mm and pressure angle of 20°. Draw the profile of four complete teeth for the gear. Also draw the profile by approximate construction method. 7

7. The details of a connecting rod for a gasoline engine are given below. Draw the following views of the assembly : *18+10=28*

(a) Front view in full section

(b) Right side view


SECTION - CD
SECTION - EF
SECTION - AB
CLAMP BOLT
BIG-END BOLT 2-OFF
CASTLE-NUT 2-OFF
WHITE METAL LINING
2mm THICK SHIMS
SPOTFACED TO SUIT NUT
CRS. 56