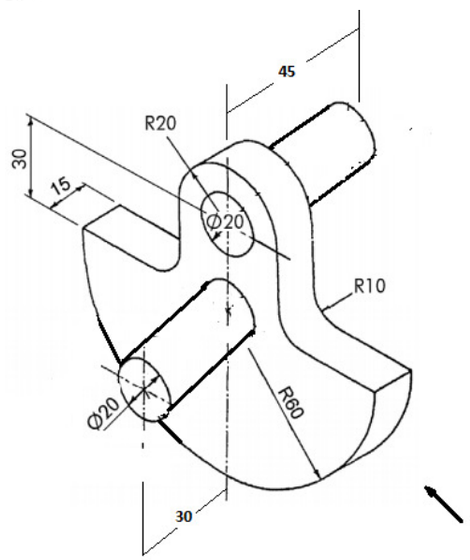
Q.5 i. Draw two different types of cylinder liner used in I.C. Engine. **2**

ii. Pictorial view of overhung crankshaft is shown in figure draw front view, top view and side view **8**



OR iii. A cam is to give the following motion to a knife-edged follower: **8**

(a) Outstroke during 60° of cam rotation

(b) Dwell for the next 30° of cam rotation

(c) Return stroke during next 60° of cam rotation

(d) Dwell for the remaining 210° of cam rotation.

The stroke of the follower is 40 mm and the minimum radius of the cam is 50 mm. The follower moves with uniform velocity during both the outstroke and return strokes. Draw the profile of the cam when Axis of the follower passes through the axis of the cam shaft

Q.6 Attempt any two:

i. Write procedure for assembly of Socket Spigot joint using CAD software. **5**

ii. Explain any five commands used for drawing 2D assembly of Single plate clutch using CAD software. **5**

iii. Explain any five commands used for drawing 3D assembly of Knuckle Joint **5**

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Total No. of Questions: 6 *Total No. of Printed Pages:4*

Enrollment No.....

Faculty of Engineering

End Sem (Odd) Examination Dec-2019

AU3CO12 Automotive Component Drawing

Programme: B.Tech. Branch/Specialisation: AU

Duration: 3 Hrs. **Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

Q.1 i. This is the theoretically exact size from which limits of size are determined: **1**

(a) Actual Size (b) Dimensioned size (c) Production size (d) Basic size

ii. Which symbolic representation will be used in drawing for Seam weld? **1**

(a)  (b)  (c)  (d) 

iii. Type of key suitable for tapered shaft is **1**

(a) Feather key (b) Gib head key

(c) Screw head key (d) Woodruff key

iv. A Gib is used with cotter to **1**

(a) Avoid shearing of cotter (b) Give more strength to cotter

(c) Reduce slipping of cotter (d) Allow more taper on cotter

v. Which of the following item is made of aluminium alloy? **1**

(a) Piston ring (b) Piston (c) Connecting rod (d) Crankshaft

vi. Connecting rods are generally of the following form **1**

(a) Forged eye section (b) Forged round section

(c) Forged square section (d) Cast iron square section

vii. The plate which acts as a packing between cylinder block and cylinder head is called **1**

(a) Chaplet (b) Liner (c) Gasket (d) Flange

viii. _____ serve as a support and enclosure for moving parts. **1**

(a) Cylinder block (b) Cylinder head

(c) Crank case (d) Connecting rod

ix. EXTEND command is used to Extend **1**

(a) A line only (b) A line or arc (c) Only arc (d) Spline

x. FILLET command is used to modify corners with an arc of **1**

(a) Any radius (b) Radius within a possible range

(c) Only zero radius (d) Very large radius

P.T.O.

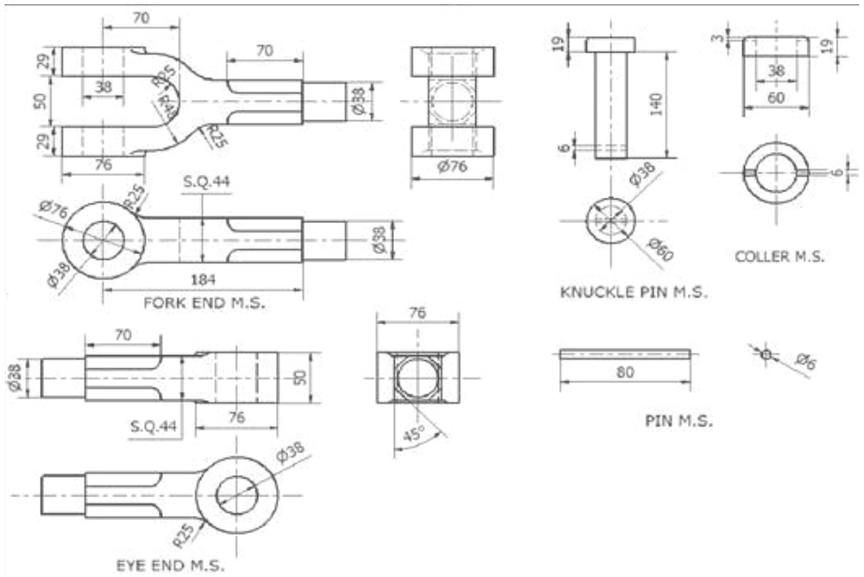
Q.2 i. Give dimensioned sketches of the following forms of screw threads: Square, Buttress **2**

ii. Draw the three view (front, top, side) of a hexagonal headed bolt 24mm diameter and 100mm long with a hexagonal nut and a washer assume rough rule dimension. **8**

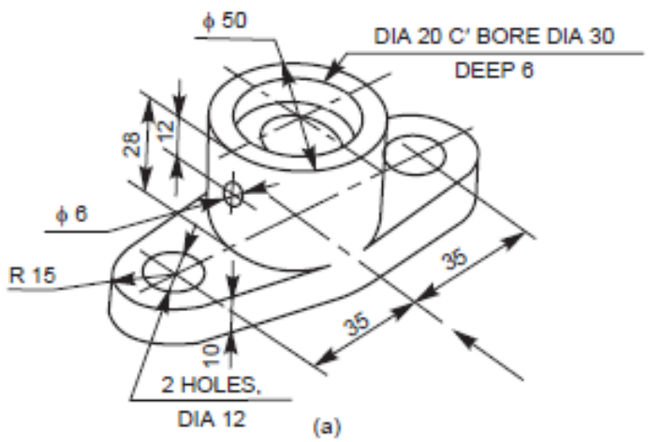
OR iii. Draw the sectional front view and top view of the double riveted lap joint, zig-zag riveting takes thickness of plate 13mm and diameter of rivet 18mm. **8**

Q.3 i. Draw any two types of key used to join hub and shaft. **2**

ii. Assemble the parts of knuckle joint and draw front view and top view. **8**

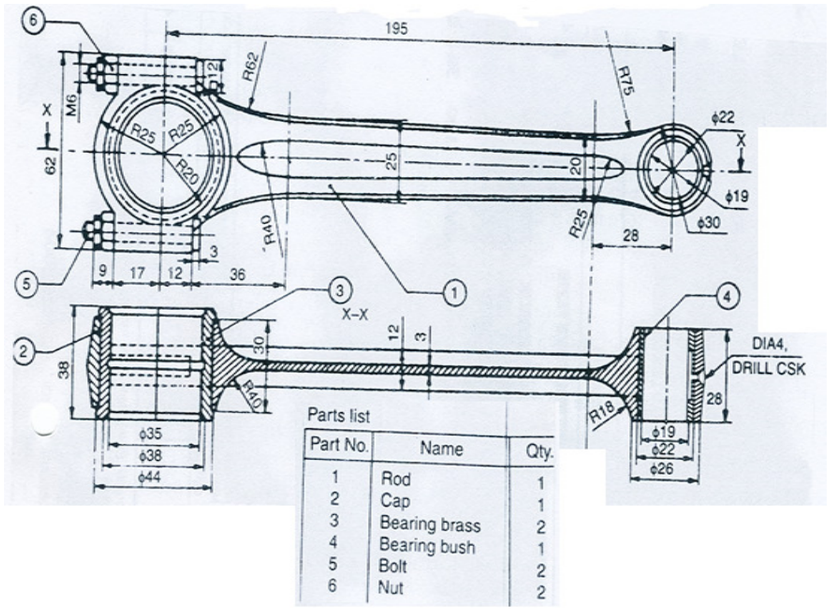


OR iii. Draw full Sectional front view, top view of bearing part shown in fig.: **8**

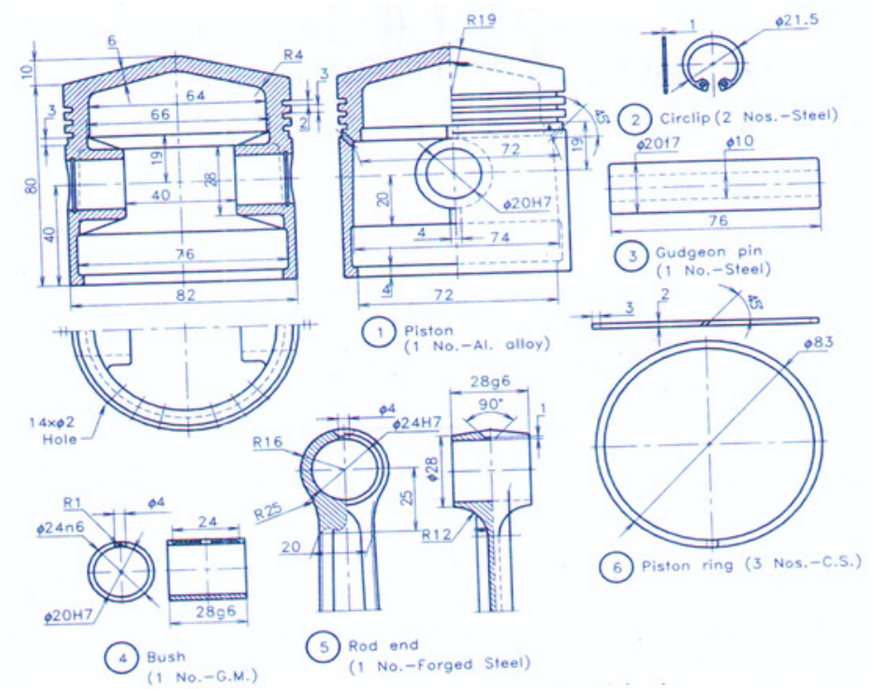


Q.4 i. Draw different types of cross section of connecting rod. **2**

ii. Draw disassembly of connecting rod shown in figure. **8**



OR iii. Draw Front view fully assembled left half in sectioned and top view of Piston connecting rod assembly **8**



P.T.O.

Marking Scheme
AU3CO12 Automotive Component Drawing

Q.1 i. This is the theoretically exact size from which limits of size are determined: **1**
(d) Basic size

ii. Which symbolic representation will be used in drawing for Seam weld? **1**
(c) 

iii. Type of key suitable for tapered shaft is **1**
(d) Woodruff key

iv. A Gib is used with cotter to **1**
(c) Reduce slipping of cotter

v. Which of the following item is made of aluminium alloy? **1**
(b) Piston

vi. Connecting rods are generally of the following form **1**
(a) Forged eye section

vii. The plate which acts as a packing between cylinder block and cylinder head is called **1**
(c) Gasket

viii. _____ serve as a support and enclosure for moving parts. **1**
(a) Cylinder block

ix. EXTEND command is used to Extend **1**
(b) A line or arc

x. FILLET command is used to modify corners with an arc of **1**
(b) Radius within a possible range

Q.2 i. Dimensioned sketches **2**
1 mark for each (1 mark * 2)

ii. Front View with dimension 3 marks **8**
Top View with dimension 3 marks
Side View with dimension 2 marks

OR iii. Front View with dimension 4 marks **8**
Top View with dimension 4 marks

Q.3 i. Any two types of key used to join hub and shaft. **2**
1 mark for each (1 mark * 2)

ii. Assemble the parts of knuckle joint **8**
Front View with dimension 4 marks
Top View with dimension 4 marks

OR iii. Draw full Sectional front view, top view **8**
Front View with dimension 4 marks
Top View with dimension 4 marks

Q.4 i. Types of cross section of connecting rod **2**
1 mark for each type (1 mark * 2)

ii. Disassembly of connecting rod shown **8**
2 marks for each component with dimension (2 marks *4)

OR iii. Draw Front view fully assembled left half in sectioned and top view of Piston connecting rod assembly **8**
Front View with dimension 4 marks
Top View with dimension 4 marks

Q.5 i. Two different types of cylinder liner used in I.C. Engine **2**
1 mark for each type (1 mark * 2)

ii. Pictorial view of overhung crankshaft **8**
Front View with dimension 3 marks
Top View with dimension 3 marks
Side View with dimension 2 marks

OR iii. Displacement diagram 3 marks **8**
Cam profile 5 marks

Q.6 Attempt any two:

i. Procedure for assembly of Socket Spigot joint using CAD software. **5**
1 mark for each step (1 mark *5)

ii. Any five commands used for drawing 2D assembly of Single plate clutch using CAD software. **5**
1 mark for each command (1 mark *5)

iii. Any five commands used for drawing 3D assembly of Knuckle Join **5**
1 mark for each command (1 mark *5)

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