

Code: 9A21301

R09

B.Tech II Year I Semester (R09) Supplementary Examinations, May 2013

**AIRCRAFT ENGINEERING DRAWING WITH CAD**

(Aeronautical Engineering)

Time: 3 hours

Max. Marks: 70

All questions are to be answered  
First angle projection to be adopted.

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1. Answer any two of the following:

**[5x2=10 M]**

- (a) Draw the following thread profiles and mark proportions.
  - i) Whitworth thread.
  - ii) Buttress thread.
  - iii) ACME thread.
  - iv) Square thread.
  - v) B.S.W. thread.
- (b) (i) Draw sunk key with proportions.  
(ii) Draw wood rough key with proportions.
- (c) Explain the following types of drawings:
  - (i) Production drawing. (ii) Exploded assembly drawing. (iii) Schematic assembly drawing.
  - (iv) Drawing for instruction manual. (v) Drawing for catalogue.

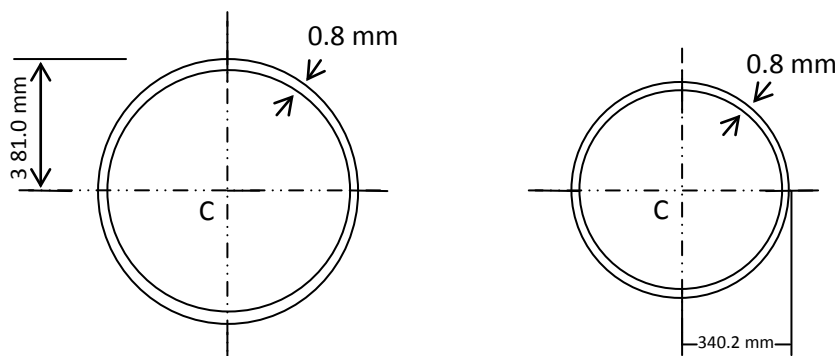
2. Answer any two of the following:

**[10x2=20 M]**

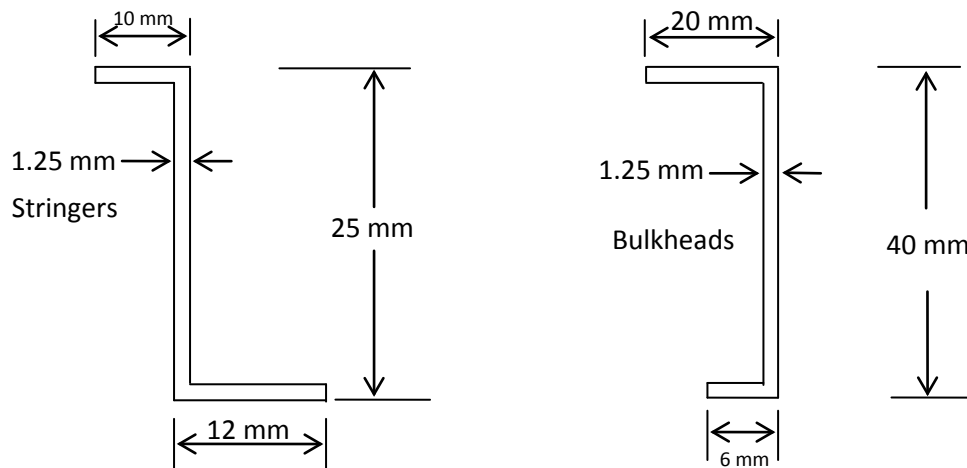
- (a) Draw three views of a hexagonal headed bolt of nominal diameter 25 mm and length 100 mm with a hexagonal nut and washer in place.
- (b) Draw the top view and sectional front view of a single riveted lap joint. Take the thickness of plate as 12 mm.
- (c) Draw different types of welding symbols used and indicate conventions.

3

Assemble and draw sectional and top view of fuselage model based on drawings of parts shown in figures below (outer skin radius = 381.0 mm, inner skin radius = 340.2 mm, bulk head cross section web height is 40 mm, stringer web height is 25 mm). Assume the number of stringers are 16, bulkheads are 3 (one at middle, two at two ends) and length of the fuselage is 300 mm.

**[20 M]**

Contd. in page 2

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- 4 (a) Explain, what are the four coordinate systems used in AutoCAD.  
(b) Explain the following AutoCAD commands with examples:
- PL.
  - Z.
  - Move.
  - Ellipse.
  - Limits.
  - Line.

**[10+10 M]**

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