INDIAN SCHOOL MUSCAT
SECOND PRELIMINARY EXAMINATION
ENGINEERING GRAPHICS

CLASS: XII   Sub. Code: 046   Time Allotted: 3 Hrs

13.02.2019   Max. Marks: 70

General Instructions:

(i)   All dimensions are in millimetres.

(ii)   Missing and mismatching dimensions, if any, may be suitably assumed.

(iii)   Follow the SP: 46, 2003 revised codes. (with First angle method of projection)

(iv)   In no view of question 1, are hidden edges or lines required.

(v)   In question 4, hidden edges or lines are to be shown in views without section.

Q1   Construct an isometric scale.   03
A

B   Draw the isometric projection to isometric scale of an inverted pentagonal pyramid of side   07
     38 mm and height 75 mm, having one of the base sides perpendicular to VP. Indicate the
     direction of front view and mark all dimensions.

C   Draw the isometric projection to isometric scale of the combination of frustum of a   14
     triangular pyramid having one of its sides perpendicular to VP (base side =30 mm , top
     side = 45mm,height = 55mm), resting vertically and centrally on the rectangular face of a
     hexagonal prism (side = 45 mm , height = 80 mm). One of the sides of the prism is parallel
     to VP .Indicate the direction of view and mark all dimensions.
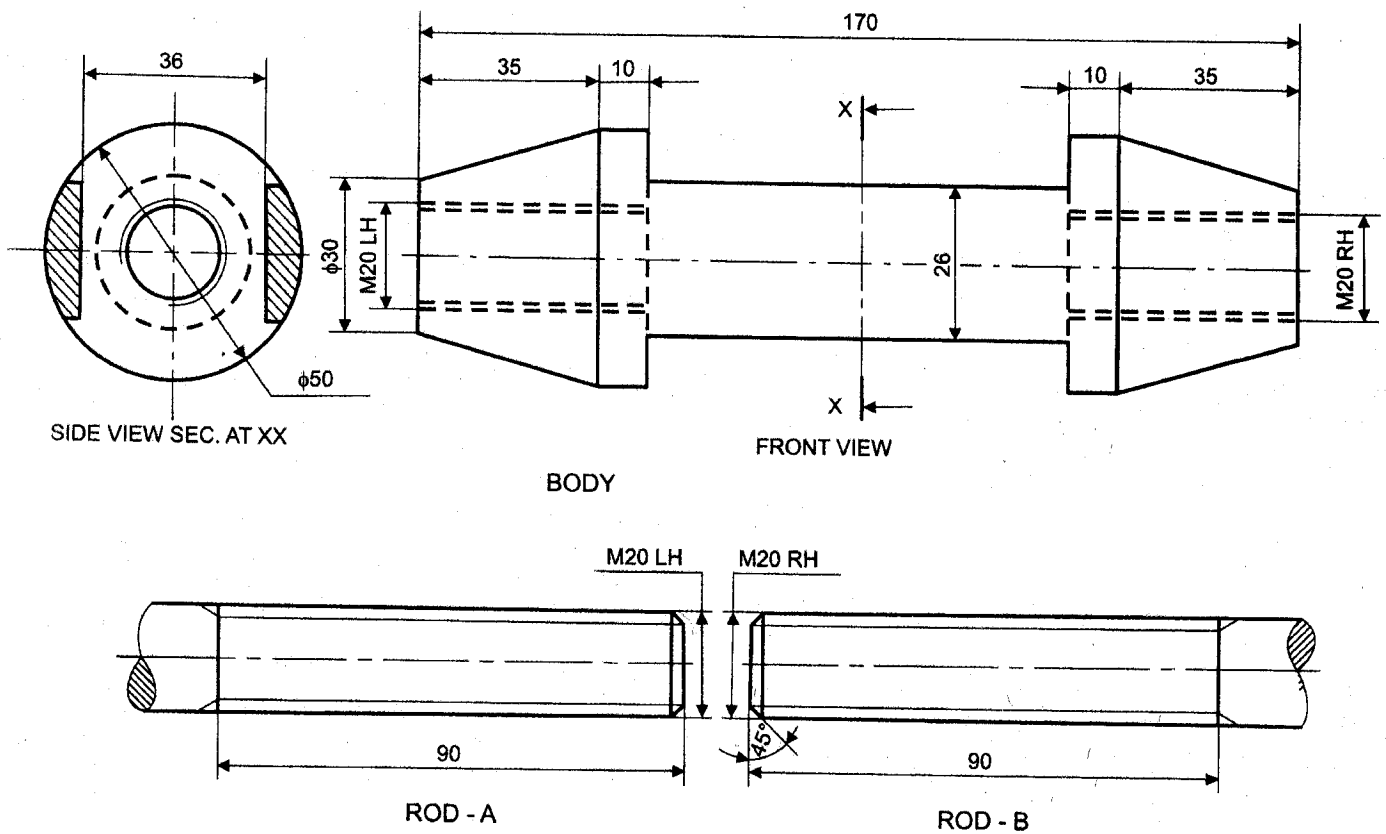
Q2 Draw to scale 1:1, the top view and sectional front view of Single riveted lap joint, when   08
A   the thickness of the plates to be joined is 9mm.

B   Sketch freehand the front view and top view of a pan head rivet of diameter 25 mm   05
    keeping its axis vertical. Give standard dimensions.

Q3 Answer the following Multiple Choice Questions. Print the correct choice on your answer
    sheet.
1. In parallel keys the thickness ....
        a. Changes with the length of the key
        b. Remains same throughout the length of the key.
        c. Increase along the length
        d. None of these

2   Isometric view is a kind of ....
        a. Perspective projection
        b. Oblique projection
        c. Axonometric projection
        d. None of the above

3   Which of the following is a suitable material for belt of the pulley?
        a. Canvas
        b. Leather
        c. Rubber
        d. All of the above
4   .... joint is useful to fasten connecting rod of a steam engine or marine engine.
        a. Sleeve and cotter
        b. Turn buckle
        c. Gib and cotter
        d. Pipe

5   The flank angle for unified thread is ....
        a. 45°
        b. 55°
        c. 30°
        d. 60°

Q4 Fig 1 shows details of *TURN BUCKLE*. Assemble the parts correctly by inserting 70 mm   28
of the threaded portion of each rod, inside the body of the turn buckle and draw the
following views to scale 1:1.
- a. Front view , upper half in section
- b. Top view
- c. Right side view.
    Print title and scale used. Draw the projection symbol and mark all dimensions.

SIDE VIEW SEC. AT XX

FRONT VIEW

BODY

ROD - A

ROD - B

End of the Question Paper

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B   Draw the isometric projection to isometric scale of an inverted hexagonal pyramid of side   07
       38 mm and height 75 mm, having one of the base sides perpendicular to VP. Indicate the
       direction of front view and mark all dimensions.

C   Draw the isometric projection to isometric scale of the combination of frustum of a   14
       triangular pyramid having one of its sides perpendicular to VP (base side =30 mm , top
       side = 45mm,height = 55mm), resting vertically and centrally on the rectangular face of a
       pentagonal prism (side = 45 mm , height = 80 mm). One of the sides of the prism is
       parallel to VP .Indicate the direction of view and mark all dimensions.

Q2 A   Draw to scale 1:1,the top view and sectional front view of Single riveted lap joint, when   08
       the thickness of the plates to be joined is 9mm.

B   Sketch freehand the front view and top view of a pan head rivet of diameter 25 mm   05
       keeping its axis vertical. Give standard dimensions.
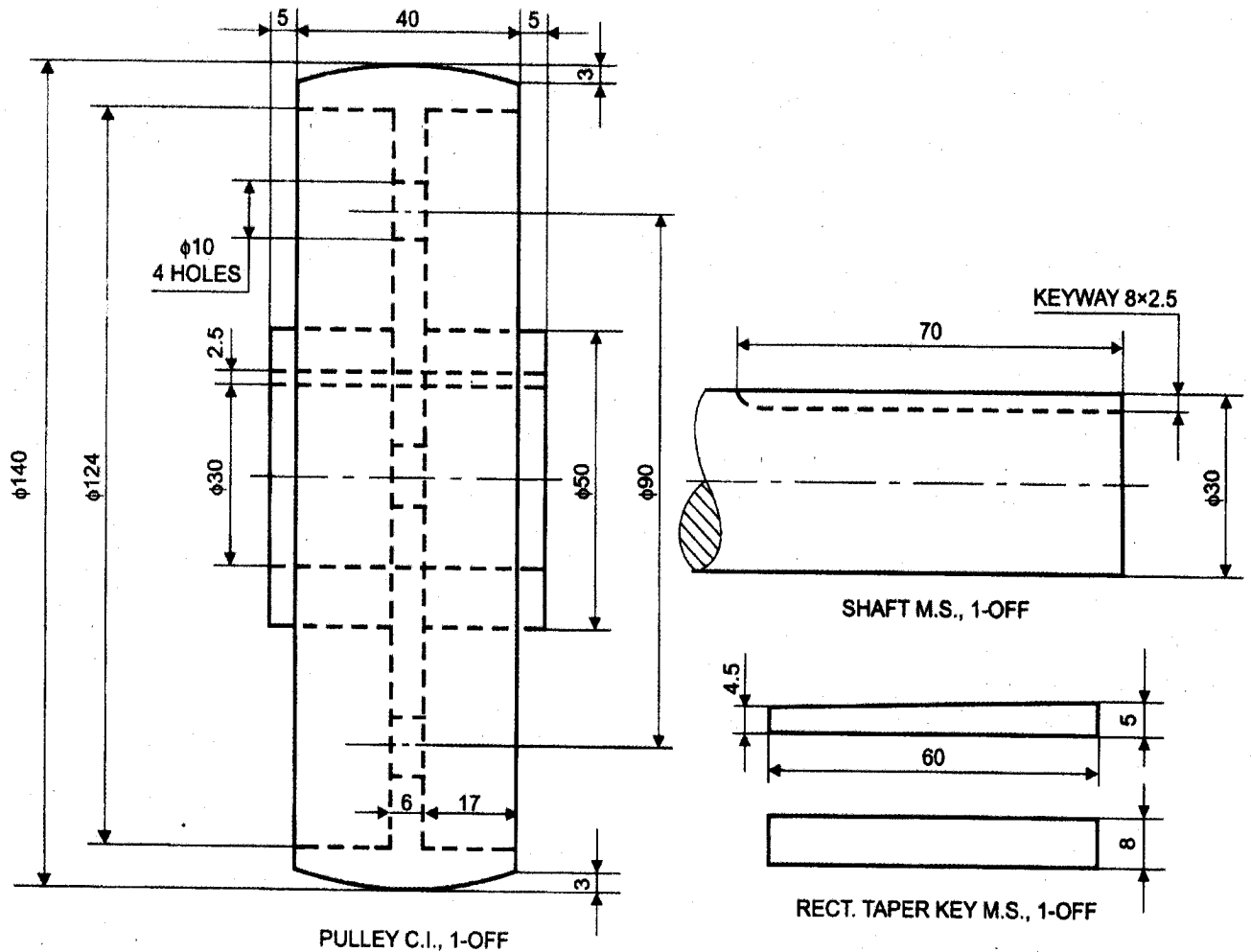
Q3   Answer the following Multiple Choice Questions. Print the correct choice on your answer   05
      sheet.

1.   In parallel keys the thickness ....
         a. Changes with the length of the key
         b. Remains same throughout the length of the key.
         c. Increase along the length
         d. None of these

2   Isometric view is a kind of ....
         a. Perspective projection
         b. Oblique projection
         c. Axonometric projection
         d. None of the above

3   Which of the following is a suitable material for belt of the pulley?
         a. Canvas
         b. Leather
         c. Rubber
         d. All of the above

4   .... joint is useful to fasten connecting rod of a steam engine or marine engine.
         a. Sleeve and cotter
         b. Turn buckle
         c. Gib and cotter
         d. Pipe

5   The flank angle for unified thread is ....
         a. 45^0
         b. 55^0
         c. 30^0
         d. 60^0

Q4   Fig 1 shows details of *SOLID WEB CAST IRON PULLEY*. Assemble the parts correctly   28
and draw the following views to scale 1:1.
   a. Front view ,upper half in section
   b. Left side view.
Print title and scale used. Draw the projection symbol and mark all dimensions.

PULLEY C.I., 1-OFF

SHAFT M.S., 1-OFF

KEYWAY 8×2.5

RECT. TAPER KEY M.S., 1-OFF

End of the Question Paper

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       side 38 mm and height 75 mm, having one of the base sides perpendicular to VP.
       Indicate the direction of front view and mark all dimensions.

C   Draw the isometric projection to isometric scale of the combination of frustum of a   14
       pentogonal pyramid having one of its sides perpendicular to VP (base side =30 mm ,
       top side = 45mm,height = 55mm), resting vertically and centrally on the rectangular
       face of a hexagonal prism (side = 45 mm , height = 80 mm). One of the sides of the
       prism is parallel to VP .indicate the direction of view and mark all dimensions.

Q2 A   Draw to scale 1:1, the standard profile of Metric thread (external), taking enlarged pitch   08
       as 50mm.Give standard dimensions.

B   Sketch freehand the front view and top view of a snap head rivet of diameter 25 mm   05
       keeping its axis vertical. Give standard dimensions.

Q3   Answer the following Multiple Choice Questions. Print the correct choice on your   05
      answer sheet.

1.   In parallel keys the thickness ....
         a. Changes with the length of the key
         b. Remains same throughout the length of the key.
         c. Increase along the length
         d. None of these

2   Isometric view is a kind of ....
         a. Perspective projection
         b. Oblique projection
         c. Axonometric projection
         d. None of the above

3   Which of the following is a suitable material for belt of the pulley?
      a. Canvas
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      c. Rubber
      d. All of the above
4   .... joint is useful to fasten connecting rod of a steam engine or marine engine.
         a. Sleeve and cotter
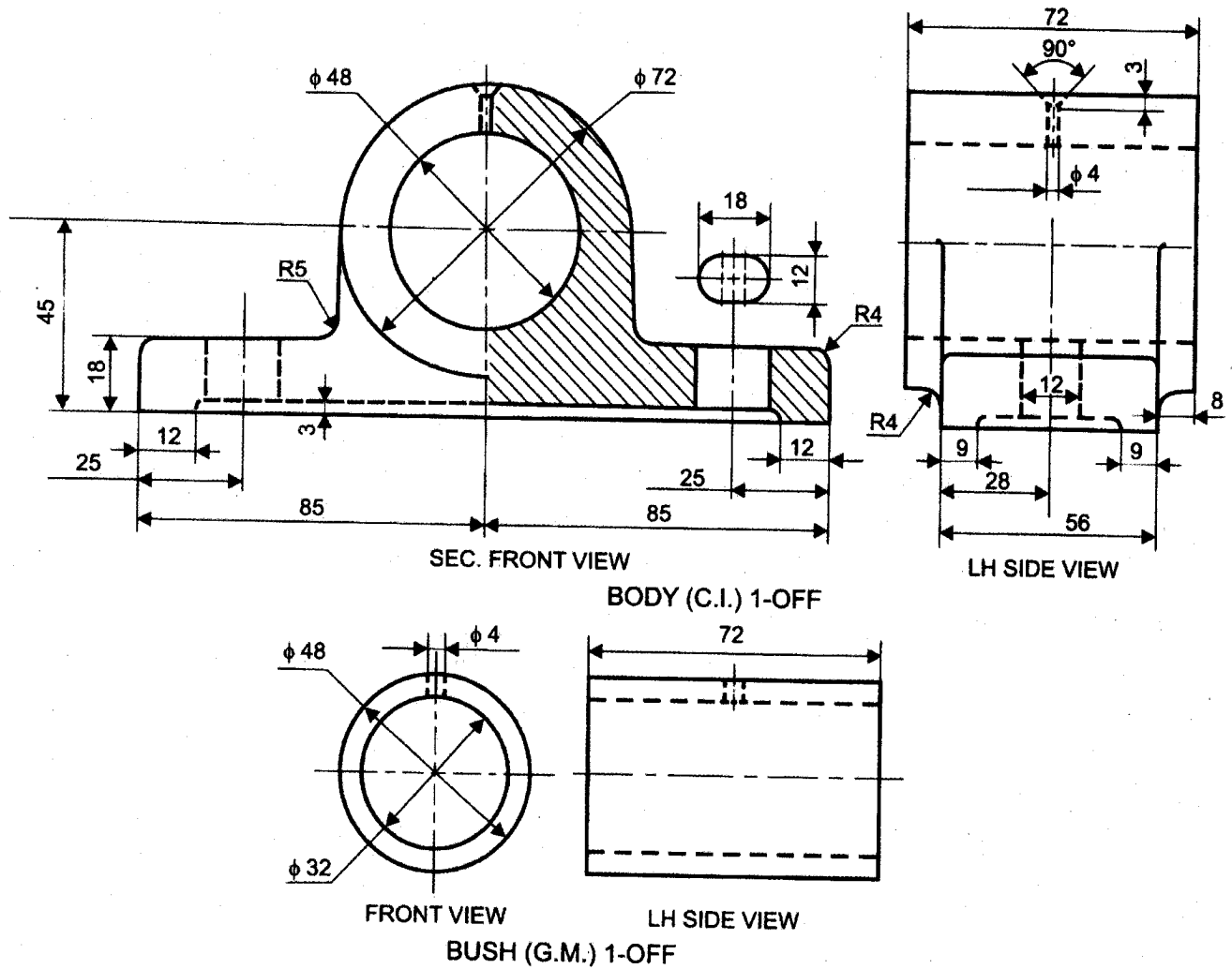   b. Turn buckle
         c. Gib and cotter
         d. Pipe

5   The flank angle for unified thread is ....
         a. 45°
         b. 55°
         c. 30°
         d. 60°

Q4   Fig 1 shows details of **BUSHED BEARING**. Assemble the parts correctly and draw the   28
following views to scale 1:1.
   a. Front view ,left half in section
   b. Top view
   c. Left side view.
Print title and scale used. Draw the projection symbol and mark all dimensions.

φ48   φ72

R5

45

18

25   12

85

3

SEC. FRONT VIEW
BODY (C.I.) 1-OFF

18

12

R4

12

25

85

72
90°   3
φ4

R4   12   8
9   9
28
56

LH SIDE VIEW

φ48   φ4
72

φ32

FRONT VIEW   LH SIDE VIEW
BUSH (G.M.) 1-OFF

End of the Question Paper