

# INSTITUTE OF AERONAUTICAL ENGINEERING 

Dundigal, Hyderabad -500 043

## MECHANICAL ENGINEERING

## QUESTION BANK

| Course Name | $:$ | MACHINE DRAWING |
| :--- | :--- | :--- |
| Course Code | $:$ | A40310 |
| Class | $:$ | II B. Tech II Semester |
| Branch | $:$ | Mechanical Engineering |
| Year | $:$ | $2016-2017$ |
| Course Faculty | $:$ | Mr. B.V. S. N. RAO, Professor, Mr. Mahidhar Reddy Assistant Professor, <br> Mr. M. Sunil Kumar, Assistant Professor, Ms. E. SANJANA Assistant Professor. |

## OBJECTIVES

To meet the challenges of ensuring excellence in engineering education, the issue of quality needs to be addressed, debated and taken forward in a systematic manner. Accreditation is the principal means of quality assurance in higher education. The major emphasis of accreditation process is to measure the outcomes of the program that is being accredited.

In line with this, faculty of Institute of Aeronautical Engineering, Hyderabad has taken a lead in incorporating philosophy of outcome based education in the process of problem solving and career development. So, all students of the institute should understand the depth and approach of course to be taught through this question bank, which will enhance learner's learning process.

| S. No | Question | Blooms <br> Taxonomy Level | Course <br> Outcome |
| :---: | :--- | :---: | :---: |
| 1 | Sketch the conventional representation of the following materials: <br> (a)Metals, (b)Glass, (c) Packing (d)Insulating material (e)Liquids, <br> (f) Wood, (g)Concrete | Understand | 1 |
| 2 | Sketch the conventional representation of the following: <br> (a) Splined shafts (b) Interrupted (c) leaf spring with eyes, <br> $(d)$ Cylindrical compression spring, (e)Cylindrical tension spring | Understand | 1 |
| 3 | Sketch the conventional representation of the following: <br> (a)Spur gear and (b) helical gear.(c)Bevel gear (d) Worm wheel (e) Worm <br> and (f)Straight knurling | Understand | 1 |
| 4 | Sketch the following thread profiles for a pitch of 30 mm and give their <br> applications: (a)BSW thread, (b) Buttress thread (c) Square thread, <br> (d) ACME thread and (e) Worm thread. | Understand | 1 |
| 5 | Give the proportions of a hexagonal nut, in terms of the nominal diameter <br> of the bolt of 20 mm. | Remember | 1 |
| 6 | Draw the three views of a hexagonal headed bolt of nominal diameter 25 <br> mm and length 100 mm; with a hexagonal nut and washer. | Remember | 1 |


| 7 | Draw the following foundation bolts of diameter 25 mm : <br> (a)Eye foundation bolt, (b) Bent foundation bolt, (c) Rag foundation bolt and (d) Lewis foundation bolt. | Remember | 1 |
| :---: | :---: | :---: | :---: |
| 8 | Draw the sectional view from the front, and view from the side of a cotter joint with sleeve used to connect two rods of 30 mm diameter each. | Understand | 1 |
| 9 | Draw the half sectional view from the front, with top half in section and the view from the side of a cotter joint with socket and spigot ends, to connect two rods of 30 mm diameter each. | Understand | 1 |
| 10 | Draw the half sectional view from the front, with top view of a knuckle joint , to connect two rods of 30 mm diameter each | Understand | 1 |
| 11 | Sketch the sectional view from the front and view from the side of a buttmuff coupling; indicating proportions for connecting two shafts, each of diameter 30 mm . | Understand | 1 |
| 12 | Draw $(a)$ half sectional view from the front, top half in section and $(b)$ half sectional view from the side, left half in section, of a split-muff coupling, indicating proportions to connect two shafts, each of diameter 50 mm . | Understand | 1 |
| 13 | Draw $(a)$ half sectional view from the front, top half in section and $(b)$ view from the side of a rigid flange coupling to connect two shafts, each of diameter 30 mm | Understand | 1 |
| 14 | Draw $(a)$ half sectional view from the front, top half in section and $(b)$ view from the side of a bushed pin type flange coupling, indicating proportions to connect two shafts, each of diameter 30 mm . | Understand | 1 |
| 15 | Draw ( $a$ ) sectional view from the front and ( $b$ ) view from the side of a universal coupling, indicating proportions, to connect two shafts, each of diameter 30 mm . | Understand | 1 |
| 16 | Sketch the required views of ( $a$ ) Oldham coupling and (b) Pin type cushion coupling, indicating proportions, used to connect two shafts, each of diameter 30 mm . | Understand | 1 |
| 17 | Draw the following views of a plummer block, suitable for supporting a shaft of diameter 50 mm : <br> (a) half sectional view from the front, with left half in section, <br> (b) sectional view from the side, and view from above. | Understand | 1 |
| 18 | Sketch the necessary views of a foot-step bearing, for supporting a shaft of diameter 50 mm . Give all important proportionate dimensions. | Understand | 1 |
| 19 | Giving proportionate dimensions, sketch any four forms of commonly used rivet heads, choosing the rivet diameter as 10 mm . | Remember | 1 |
| 20 | Draw (a) sectional view from the front and (b) view from above, of the following riveted joints, to join plates of thickness 10 mm : <br> (i).Single riveted lap joint, (ii) double riveted chain lap joint, (iii) double riveted zig-zag lap joint, | Remember | 1 |
| 21 | Draw (a) sectional view from the front and $(b)$ view from above, of the following riveted joints, to join plates of thickness 10 mm : <br> (i) single riveted, single strap butt joint, <br> (ii) single riveted, double strap butt joint <br> (iii) double riveted, double strap, chain butt joint and <br> (iv) double riveted, double strap, zig-zag butt joint. | Remember | 1 |

## PART_B

| 1 |  |
| :--- | :--- | :--- |
| Assemble all parts of the stuffing box for a vertical steam engine, shown in <br> Fig. 1 and draw its <br> , half sectional view from the front, with left half in section, <br> (ii) half sectional view from the right and <br> (iii) view from above. | Knowledge | 3

## PART_B




PART_B


PART_B


## PART_B



PART_B


## PART_B



PART_B


## PART_B



## PART_B



PART_B


## PART_B



## PART_B



PART_B

| S. No | Question | $\begin{gathered} \hline \text { Blooms } \\ \text { Taxonomy } \\ \text { Level } \\ \hline \end{gathered}$ | Course <br> Outcome |
| :---: | :---: | :---: | :---: |
| 1 | Sketch the conventional representation of the following materials:(a)Metals, <br> (b)Glass, (c) Packing (d)Insulating material (e)Liquids, (f) Wood, <br> (g)Concrete | understand | 1 |
| 2 | Sketch the following thread profiles for a pitch 30 mm and give their applications: (a)BSW thread, (b) Buttress thread (c) Square thread, (d) ACME thread and (e) Worm thread. | understand | 1 |
| 3 | Give the proportions of a hexagonal nut, in terms of the nominal diameter of the bolt of 20 mm . | understand | 1 |
| 4 | Draw the following foundation bolts of diameter 25 mm : (a)eye foundation bolt, (b) Bent foundation bolt, (c) Rag foundation bolt and (d) Lewis foundation bolt. | understand | 1 |
| 5 | Draw the sectional view from the front, and view from the side of a cotter joint with sleeve used to connect two rods of 30 mm diameter each. | understand | 1 |
| 6 | Draw the half sectional view from the front, and top view of a knuckle joint to connect two rods of 30 mm diameter each | understand | 1 |
| 7 | Draw (a) sectional view from the front and <br> (b) view from the side of a universal coupling, indicating proportions, to connect two shafts, each of diameter 30 mm . | understand | 1 |
| 8 | Draw (a) sectional view from the front and <br> (b) view from above, of the following riveted joints, to join plates of thickness 10 mm : <br> (i).Single riveted lap joint, <br> (ii) double riveted chain lap joint, <br> (iii) double riveted zig-zag lap joint, | understand | 1 |
| 9 | Draw (a) sectional view from the front and <br> (b) view from above, of the following riveted joints, to join plates of thickness 10 mm : <br> (i) single riveted, single strap butt joint, <br> (ii) single riveted, double strap butt joint <br> (iii) double riveted, double strap, chain butt joint and <br> (iv) double riveted, double strap, zig-zag butt joint. | understand | 1 |

## PART_B



## PART_B



PART_B


PART_B


