

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Mid Semester Examination – Oct 2018

Course: M. Tech Manufacturing Engineering Sem: III

Subject Name: Ele-II, Manufacturing Planning and Control

Subject Code: MMECH15A

Max Marks: 20

Date:-

Duration:- 1 Hr.

Instructions to the Students:

1. Assume suitable data wherever required.
2. Draw figure wherever necessary.
3. Figure to right indicates full marks.

Q. 1 Choose Correct Answer

Marks

6

1. Which of the following technique of grouping does not consider the design and shape aspect?
(A) A simple and visual method of cell design. (B) Family formation by classification and codification. (C) Cell formation using Production Flow Analysis
(D) All of the above
2. The profit of an enterprise can be increased by
i Reducing total costs of production. ii Increasing sales value. iii Increasing capital cost.
iv Increasing manpower. Which of the above are true?
A) Only i B) i & ii C) I, ii & iii D) All of the above
3. . If all the processing equipment and machines are arranged according to the sequence of operations of a product the layout is known as
A) Product layout B) Process layout C) Fixed position layout D) Combination layout
4. The following is the preliminary stage of Production planning
(A) Capacity planning. (B) Material requirements planning. (C) Scheduling
(D) Product development and design
5. Just-in-Time was successfully implemented by
(A) Toyota. (B) Honda. (C) Suzuki. (D) Volkswagen
6. The following type of Layout caters to 'intermittent flow' type of production.
(A) Process layout. (B) Product layout. (C) Combined layout. (D) All of the above

Q.2 Solve Any Two of the following.

3 X 2

- (A) How the concept of assembly line was introduced? explain its benefits
- (B) CIM system has made manufacturing easy and accurate justify the statement
- (C) What is line balancing? Explain

Q.3 Solve Any One of the following.

8

- (A) What is FMS system? Explain the implementation of FMS system in industry
- (B) Explain the terms such as capacity planning and inventory planning with suitable examples.

***** End *****

10/10/2023

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

MGM's, Jawaharlal Nehru Engineering College, Aurangabad

Mid Semester Examination – Oct 2018

Course: S.Y. B. Tech in Mechanical Engineering Sem: III

Subject Name: THERODYNAMICS Subject Code: BT-MEC 305

Max Marks:20

Date:-

Duration:- 1 Hr.

Instructions to the Students:

1. Assume suitable data if required
2. Draw figures where ever necessary
3. Figures to the right indicates full marks
4. Engineering calculator is allowed.

Marks

Q.1 Choose the correct answer.

6

- 1 Which of the following is not a property of the system.
(a) Pressure (b) Volume (c) Temperature (d) Heat.
- 2 Which of the following represents an intensive property,
(a) Volume (b) Temperature (c) Mass (d) Energy
- 3 Work done in steady flow process is represented by
(a) $\int Pdv$ (b) $\int vdp$ (c) $\int -Pdv$ (d) $\int -vdp$
- 4 1st law as applied to closed system undergoing a cyclic process is given by
(a) $Q-W=\Delta U$ (b) $Q-W=\Delta H$ (c) $Q+W=\Delta U$ (d) $\Sigma Q=\Sigma W$
- 5 Area under temperature entropy diagram gives
(a) Work (b) Power (c) Heat (d) None of these
- 6 No engine can be more efficient than a reversible engine is known as
(a) Kelvin-Planck statement (b) Clausius Statement (c) Carnot theorem (d) 1st Law of Thermodynamics.

Q.2 Solve Any Two of the following.

3 X 2

- (A) Draw and discuss PMM-I and PMM-II
- (B) Identify the difference between heat and work
- (C) Draw Carnot cycle on P-V and T-S planes.

Q.3 Solve Any One of the following.

8

- (A) A blower handles 1 kg/sec of air at 20°C and consumes a power of 15kW. Inlet and out let velocities of air are 100 m/sec and 150 m/sec respectively. Find the exit air temperature assuming adiabatic conditions. Take C_p of air as 1.005 kJ/kg K.
- (B) An inventor claims to have developed an engine that takes in 105 MJ at a temperature of 400K, rejects 42 MJ at a temperature of 200 K and delivers 15 kWh of mechanical work. Would you advice investing money to put this engine in the market ?

*** End ***

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Mid Semester Examination – Oct 2018

Course: SY B. Tech -Mechanical engineering

Sem: III

Subject Name: Material science & Metallurgy

Subject Code: BT-MEC 302

Max Marks:20

Date:-09/10/18

Duration:- 1 Hr.

Instructions to the Students:

1. Assume suitable data if required.
2. Draw figures wherever necessary.
3. Figures to the right indicate full marks.
4. Engineering calculator is allowed.

Marks 6

Q.1

1. Repeatable entity of crystal structure is known as
a) Crystal structure b) Lattice c) Unit cell d) Millers Indices
2. The imperfections in crystal structure of metal is known as
a) Dislocations b) cleavage c) Fracture d) Slip
3. In Tensile-test usually failure takes place
a) Within gauge length b) Near gauge length c) None of Above
4. Following one test cannot be conducted on Universal testing machine
a) Tensile test b) Bend test c) Hardness test d) Torsion test
5. Coordination number for HCP crystal structure is ,
a) 8 b) 6 c) 12 d) 14
6. Gibb's phase rule for general system is ,
a) $P+F=C-1$ b) $P+F=C+1$ c) $P-F=C-2$ d) $P-F=C-1$

Q.2 Solve Any Two of the following.

Marks 3 X 2

- (A) Describe Tensile-test with neat sketch.
- (B) Explain the Miller's Indices for crystal structure.
- (C) Explain the peritectic reaction on Iron-carbon equilibrium diagram.

Q.3 Solve Any One of the following.

Marks 8

- (A) Draw neat labeled Iron-carbon equilibrium diagram. Explain various critical temperatures on it.
- (B) Explain the types of solid solutions with neat sketch.

***** End *****

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Mid Semester Examination – Oct 2018

Course: B. Tech in Mechanical Engineering

Sem: III

Subject Name: Machine Drawing & CAD

Subject Code: BT-MEC 304

Max Marks:20

Date:-

Duration:- 1 Hr.

Instructions to the Students:

1. Figures to the right indicates full marks
2. Assume suitable data, if and wherever necessary

(Level/CO) Marks

Q.1 Draw the conventional representation for the following

Remember 6

- | | |
|---------------------------|----------------------|
| 1. Spur Gear | 4. Straight Knurling |
| 2. Double U butt weld | 5. Splined shaft |
| 3. External Screw Threads | 6. Bevel gear |

Q.2 Solve Any one of the following.

Understand 6

(A) Draw Various Types of Riveted Joints

(B) Figure 1 shows the isometric view of a shaft support. Draw i) Full Sectional F.V ii) T.V

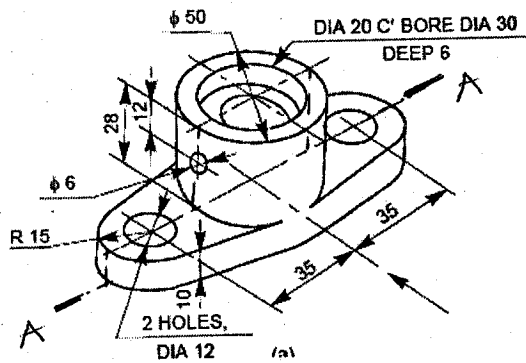


Figure 1

Q.3 Solve Any One of the following.

Analyze

(A) A vertical cylinder, of 50 mm diameter and axis height 78 mm is penetrated by a horizontal cylinder of 40 mm diameter and axis 78 mm long both axis intersects & bisects each other. Draw the projection showing the curve of intersection.

8

(B) Figure 2 shows the pictorial view of bearing bracket. Draw i) Sectional F.V ii) T.V

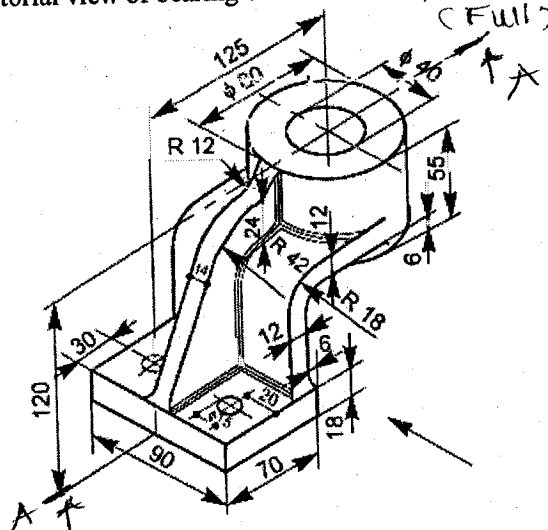


Figure 2

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Mid Semester Examination – Oct 2018

Course: B. Tech in Mechanical Engineering

Sem: III

Subject Name: Fluid Mechanics

Subject Code: BT-MEC 303

Max Marks: 20

Date:-

Duration:- 1 Hr.

Instructions to the students:

1. Figures to the right indicate full marks.
2. Assume suitable data wherever necessary.
3. Use of non-programmable calculator is allowed.

Marks

Q. 1 Solve the following questions.

1X6

1. SI unit of surface tension is ----- .

- A) N/m^2 B) N/mm^2 C) N/m D) N/mm

2. The magnitude of buoyant force can be determined by-

- A) Principle of moments. B) Newton's second law of motion. C) Archimedes' Principle.
D) None of the above.

3. If the Reynolds number is less than 2000, the flow in pipe is –

- A) Laminar B) Transition C) Turbulent D) None of the above.

4. The type of flow in which the velocity at any given time does not vary with respect to space is called –

- A) steady flow B) uniform flow C) compressible flow D) rotational flow.

5. Velocity head is given by –

- A) $V/2g$ B) $V^2/2g$ C) $V^3/2g$ D) $V^2/2g^2$.

6. A pitot tube is used for measuring—

- A) velocity of flow B) pressure of flow C) flow rate D) total energy.

Q.2 Solve any Two of the following.

3X2

(A) What is surface tension? Explain.

(B) A 30cm dia. Pipe, conveying water, branches into two pipes of diameters 18cm and 14cm respectively. If the average velocity in the 30cm diameter pipe is 2.5m/sec, find the discharge in this pipe. Also determine the velocity in 14cm dia pipe if the average velocity in 18cm dia pipe is 2.0 m/sec.

(C) Derive an expression for discharge through venture-meter.

Q. 3 Solve any One of the following.

8X1

(A) A circular opening, 3m dia, in a vertical side of a tank is closed by a disc of 3m dia which can rotate about a horizontal diameter. Calculate i) the force on the disc, ii) the torque required to maintain the disc in equilibrium in vertical position when the head of water above the horizontal diameter is 4m.

(B) The water is flowing through a taper pipe of length 100m having diameters 650mm at the upper end and 325 mm at the lower end, at the rate of 50 ltr/sec. The pipe has a slope of 1 in 30. Find the pressure at lower end if the pressure at the higher level is $19.62N/cm^2$.

*** End ***