



Bharatiya Vidya Bhavan's

SARDAR PATEL COLLEGE OF ENGINEERING

(Government Aided Autonomous Institute)
Munshi Nagar, Andheri (W) Mumbai - 400058



S. Y. B. Tech
ENDSEM- EXAMINATION FEB 2023

Program: MECHANICAL

Sem III 24/2/23

Duration: 03 Hours

Course Code: BS-BTM301

Maximum Points: 100

Course Name: Laplace fourier complex linear algebra

Semester: III

- Attempt any five out of seven questions
- Use of scientific calculator is allowed.

QNO.	QUESTION	PO IN TS	CO	BL	PI
QI a)	Obtain Laplace transforms of $f(t) = \sqrt{1 + \sin t}$	06	1	2	2.1.3
QI b)	Find the bilinear transformation which maps $1, i-1$ to $2, i, -2$ respectively. Find the fixed points of the transformation.	06	3	3,5	1.1.1
QI c)	Find for what values of k the set of equations $2x - 3y + 6z - 5t = 3, y - 4z + t = 1, 4x - 5y + 8z - 9t = k$ has (i) no solution (ii) infinite number of solutions.	08	4	1	1.1.2
QII a)	Test for consistency and solve $x - 2y + 3t = 2$ $2x + y + z + t = -4$ $4x - 3y + z + 7t = 8$	06	4	2	2.1.4
QII b)	Prove that $\int_0^{\infty} \frac{\sin 2t + \sin 3t}{te^t} dt = \frac{3\pi}{4}$ using Laplace transforms	06	1	2	2.3.1
QII c)	Obtain the Fourier Series for $f(x) = \cos x \quad -\pi \leq x \leq \pi$	08	2		2.1.4
QIII a)	Obtain the Fourier Series for $f(x) = x \sin x$ in $(0, 2\pi)$	06	2	2	1.1.2
QIII b)	Show that the function $e^x (\cos y + i \sin y)$ is an analytic function, find its derivative.	06	3	2	1.1.1
QIII c)	Solve $y'' + y = t$ Given $y(0) = 1 \quad y'(0) = -2$	08	1	4,5	2.1.4



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QIV a)	If $f(z) = u + iv$ is an analytic function of $z = x + iy$ and $u - v = \frac{e^y - \cos x + \sin x}{\cosh y - \cos x}$, find $f(z)$ subject to the condition that $f\left(\frac{\pi}{2}\right) = \frac{3-i}{2}$	06	3	3	2.3.1
QIV b)	Evaluate: $\mathcal{L}^{-1} \left\{ \frac{s}{(s^2 + 4)(s^2 + 1)} \right\}$ using convolution theorem	06	1	2	1.1.3
QIV c)	If $f(x) = x$ $0 \leq x \leq 2$ Find half range cosine series using Parseval's identity deduce $\frac{\pi^4}{96} = \frac{1}{1^4} + \frac{1}{3^4} + \frac{1}{5^4} + \dots$	08	2	3	2.3.4
QV a)	Obtain the Fourier series for $f(x) = \begin{cases} 1 + \frac{2x}{\pi} & -\pi < x < 0 \\ 1 - \frac{2x}{\pi} & 0 < x < \pi \end{cases}$	06	2	2	2.3.1
QV b)	Evaluate $L^{-1} \left\{ \frac{5S^2 + 8S - 1}{(S+3)(S^2 + 1)} \right\}$	06	1	2	1.1.1
QV c)	Find the characteristic equation of the symmetric matrix $A = \begin{bmatrix} 2 & -1 & 1 \\ -1 & 2 & -1 \\ 1 & -1 & 2 \end{bmatrix}$ and verify that it is satisfied by A and hence obtain A^{-1} . Express $A^6 - 6A^5 + 9A^4 - 2A^3 - 12A^2 + 23A - 9I$ in linear polynomial in A.	08	4	2	2.3.4
QVI a)	Find the Fourier series expansion of the periodic function of period $f(x) = \begin{cases} \frac{1}{2} + x, & -\frac{1}{2} < x \leq 0 \\ -\frac{1}{2} - x, & 0 < x < \frac{1}{2} \end{cases}$	06	2	4	1.1.3
QVI	Find non-singular matrices P and Q such that P A Q is in	06	4	3	2.1.3

**ENDSEM- EXAMINATION FEB2023**

b)	normal form $A = \begin{bmatrix} 1 & 2 & 3 & 4 \\ 2 & 1 & 4 & 3 \\ 3 & 0 & 5 & -10 \end{bmatrix}$ Hence find rank of A.				
QVI c)	Evaluate: $L^{-1} \left\{ \frac{s^2 + 2s + 3}{(s^2 + 2s + 2)(s^2 + 2s + 5)} \right\}$	08	1	3	1.1.1
QVI I a)	Obtain Laplace transforms of $L \{ \sin 2t \sin 4t \sinh t \}$	06	1	3	2.1.4
QVI I b)	Find the bilinear transformation that maps the point $z_1 = -i, z_2 = 0, z_3 = i$ into the points $w_1 = -1, w_2 = i, w_3 = 1$ respectively. Into what curve the y - axis is transformed to this transformation?	06	3	2	1.1.3
QVI Ic)	Find the eigen values and eigenvectors of the matrix $A = \begin{bmatrix} 1 & 0 & -1 \\ 1 & 2 & 1 \\ 2 & 2 & 3 \end{bmatrix}$	08	4	3,5	2.1.3





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END-SEM-EXAMINATIONS Feb 2023

Program :BTech Mechanical engg

Duration :3 hr

Course Code :PC-BTM302

Maximum Points :100

Course Name :Strength of Materials.

J. V. B. Tech (Mech) Term III

Semester :III

Instruction : Refer below

27/2/23

1. Question No. 1 is compulsory
2. Solve any four out of remaining six.
3. Answers to each sub-questions are grouped together
4. Use of scientific calculator is allowed
5. Begin answer to each question on new page.
6. Keep some margin on left side of answer paper
- 7. Candidates should write the answer legibly**

Q. no.	Description	Pts	CO	BL
1	a) Define following terms: i. Poisson's ratio ii. Yield stress iii. Modulus of elasticity iv. Section modulus v. Hoop stress b) A cantilever beam of length L is subjected to UDL ' w ' acting on entire span. Develop expression for the deflection of the beam. The beam has area moment of inertia of I and modulus of elasticity E . c) A steel rod 120 mm in diameter is subjected to axial compressive force of 800 kN. If $E = 200$ GPa and $\nu = 0.29$, calculate change in diameter of the rod. Also calculate axial stress and strain in the rod. d) Show that for a beam subjected to pure bending, neutral axis coincides with the centroid of the cross-section.	20	1,2 ,3	2,3
2	a) A rectangular beam section of 40mm wide and 120 mm depth is subjected to a moment of 5 kN-m. Determine the maximum stress in the beam. Also calculate the radius of curvature of neutral axis at this section. Consider $E = 2 \times 10^5$ N/mm ² . b) A hollow steel shaft transmits 150 kW of power at 300 rpm. Total angle of twist in a length of 5 meter is 4° . Find inner and outer diameter of shaft if permissible shear stress is 60 MPa. Take $G = 80$ GPa.	10 10	1,2	2,3
3	a) Prove that in a rectangular cross-section beam the maximum shear stress induced is 50 percent more than mean shear stress. b) A 100 mm X 40 mm, I-section beam carries a shear force of 20 kN. Find	5 15	1,2	2,3

	<p>the transverse shear stress at neutral axis, top of the web and bottom of flange. Find also magnitude of shear force shared by web. Take flange thickness 4 mm and web thickness 3 mm.</p>			
4	<p>At a point in a material subjected to two-dimensional stress, one of the principal stresses is 100 MPa, tensile. On a plane at 60° to this principal plane, the normal stress is zero. Determine the other principal stress, the shear stress on the plane of zero normal stress and planes on which the normal and shear stresses are equal in magnitude.</p>	20	1,2,4	3,4
5	<p>Draw the shear force and bending moment diagram for the beam ABCDE shown in the figure.</p>	20	1,2	3,4
6	<p>a) A simply supported beam AB of span 5 meters is carrying a point load of 50 kN at a distance 3.75 m from the right end B. Calculate the slopes at A and B and deflection under the load. Take $EI = 26 \times 10^{12} \text{ N-mm}^2$.</p> <p>b) A cast iron water pipe of 300 mm inside diameter and 12 mm thick is supported over a span of 7 meters. Find the maximum stress in the pipe metal, when the pipe is running full. Take density of cast iron as 70.6 kN/m^3 and that of water as 9.8 kN/m^3</p>	10	1,2	3,4
7	<p>a) A cylindrical shell, 1000 mm in diameter, thickness of metal 10 mm and 5.0 m long, is subjected to internal pressure of 1.2 MPa. Calculate the change in diameter, length and volume of shell under pressure. Use thin cylinder theory. $E = 200 \text{ GPa}$, Poisson's ratio = 0.3</p> <p>b) Explain how the Mohr's circle method is applied for analysis of two-dimensional state of a stress .</p> <p>c) Explain the Macaulay's method to obtain the deflection. What are it's advantages?</p> <p>d) What do you mean by pure bending? Sketch the beam loading which is having a portion of pure bending.</p> <p>e) What is a strut? How does it differ from column? State the limitations of Euler's equation.</p>	20	1,2,4	2,3



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END SEMESTER EXAMINATION, February-2023

Program: **B. Tech. in Mechanical Engineering**

Class: **Second Year B. Tech. (Mechanical)**

Course code: **PCC-BTM305**

Name of the Course: **Thermodynamics**

Date: **Feb-2023**

Duration: **3 Hr.**

Max. Points: **100**

Semester: **III**

Instructions:

- Solve **ANY FIVE** questions.
- Assume suitable data wherever necessary and state the same.
- Draw neat system diagram and/or process diagram wherever necessary.
- Use of **Steam Tables and Mollier Diagram** provided by Exam Section is permitted.
- Write brief and specific answers to theory questions in legible hand writing.

Q. No.	Question	Points	CO	BL	PI	Module
Q.1	a) Explain: i) Quasi-static process. ii) Thermodynamic Equilibrium Why practical processes in engineering applications are non-quasi-static?	(06)	1	II	1.4.1	1
	b) Explain: Concept of Thermodynamic work. State: General form of expression for displacement work for a closed system. Derive: Expression for displacement work in a reversible adiabatic process.	(06)	1	I, II	1.4.1	1
	c) A fluid is filled in a horizontal cylinder fitted with a frictionless and leak-proof piston held against atmospheric pressure. The cylinder bore is 0.40 m . The fluid is continuously agitated for 10 minutes by means of a stirrer, fitted at the end of an electric motor shaft passing through the cylinder cover. During the stirring process, the piston moves out slowly by a distance of 0.485 m against atmospheric pressure. The net work done by the fluid during the process is 2 kJ . The stirrer is rotating at 840 rpm . Determine: Power output of the motor required to drive the stirrer.	(08)	1	II	1.4.1	1
Q.2	a) Explain: Types of thermodynamic properties with examples. Prove: i) Energy is a thermodynamic property of the system. ii) Energy of an isolated system is constant.	(10)	1,2	II, III	1.4.1	1,2
	b) A closed system consisting of an ideal gas at an initial pressure of 1.4 bar and volume of 0.028 m³ , undergoes a cycle consisting of following processes and energy interactions as given in table below: Considering there are no significant changes in K.E. and P.E., Evaluate: i) Net work transfer for the cycle ii) Heat transfer for process 1-2.	(10)	1,2	V	1.4.1	1,2

Sr. No.	Process	Type of Process	Energy Interaction					
1.	1-2	Isobaric	$W_{1-2} = 10.5 \text{ kJ}$					
2.	2-3	$pV = \text{Constant}$	$U_3 - U_2 = 0 \text{ kJ}$					
3.	3-1	Isochoric	$U_1 - U_3 = -26.4 \text{ kJ}$					
Q.3	a) State: Expression for General form of Steady Flow Energy Equation (SFEE) for a flow system undergoing a process. Using this equation, Derive: Ideal steady flow energy equation for i) a Turbine and ii) a nozzle. State: Assumptions made in derivation.			(10)	2	I, III	1.4.1	2
	b) Steam enters a steam turbine at a 15 bar and 350°C with a velocity of 60 m/s. The steam leaves the turbine after its reversible adiabatic expansion in the turbine at a pressure of 1.2 bar with a velocity of 180 m/s. Considering no change in P.E., Evaluate: i) Work produced by turbine per kg of steam ii) Quality of steam at turbine exit. Draw: System diagram and T-s diagram for the process.			(10)	2	I, V	1.4.1	2,5
Q.4	a) Explain: Kelvin-Planck and Clausius statements of Second Law of thermodynamics. Draw: Neat schematic diagrams.			(10)	2	I, II,	1.4.1	3
	b) Explain: Sensible and latent heat transfer. 1 kg of ice at -5 °C is heated at constant atmospheric pressure to form superheated steam at 250°C. List: Stages of sensible and latent heat transfer involved and Evaluate: Change in entropy in each stage. Take following reference data: i) c_p of ice = 2.093 kJ/kg. K ii) Latent heat of fusion of ice = 334.96 kJ/kg iii) c_p of water = 4.1867 kJ/kg.K iv) Latent heat of vaporisation of water = 2257 kJ/kg v) c_p of steam = 2.093 kJ/kg.K.			(10)	1, 2,3	I, II,	1.4.1	1,4,5
Q.5	a) Explain: Working of Ideal Reheat cycle for a steam power plant (with 01 reheat) Draw: System diagram and T-s diagrams for the cycle. Discuss: Necessity and conditions for reheating of steam in a steam power plant.			(10)	3	I, II, V	1.4.1	5
	b) A Steam power plant operates on an Ideal Rankine cycle between boiler pressure of 80 bar and condenser pressure of 0.1 bar. Steam from boiler is at 600°C. Evaluate: Thermal efficiency of cycle Draw: System diagram, T-s diagram and h-s diagrams for the cycle.			(10)	3	I, V	1.4.1	5
Q.6	a) Explain: Working of an Otto cycle. Derive: Expression for thermal efficiency of an air standard Otto cycle. Draw: p-V and T-s diagrams for the cycle.			(10)	3	I, II, III	1.4.1	6
	b) Explain: i) Indicated power ii) Brake power iii) Mechanical Efficiency of an I.C. Engine. An indicator diagram of a single cylinder, single acting four-stroke diesel engine has a length of 0.1 m and area of $2.045 \times 10^{-3} \text{ m}^2$. The spring constant for the indicator cylinder spring is 20000 kPa/m. The bore and the stroke of the engine cylinder both are 100 mm and the engine speed is 900 rpm. The braking torque required for the engine is 19.2 m.N. Calculate: i) Indicated power and ii) Mechanical efficiency of the engine.			(10)	3	II, V	1.4.1	1,6

Q.7	<p>Attempt any THREE of the following:</p> <p>a) Explain: i) Enthalpy of formation ii) Adiabatic flame temperature.</p> <p>b) Explain: Subcooled liquid using T-s and p-V diagrams. Why it is also termed as compressed liquid?</p> <p>c) Explain: Joule's experiment with neat sketch.</p> <p>d) Explain: PMM-1 and its converse with neat sketches</p> <p>e) Explain: Isentropic efficiency of steam turbine and pump with T-s diagram</p>	(20)		II	1.4.1	
			4			7
			3			5
			3			1
			2			2
			3			5

**END SEMESTER EXAMINATION MARCH 2023**

Program: Mechanical Engineering

Duration: 03 hour

Course Code: PCC-BTM306

Maximum Points: 100 marks

Course Name: **Manufacturing Science**

Semester: III

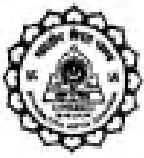
Notes: 1. Questions number 01 is compulsory.

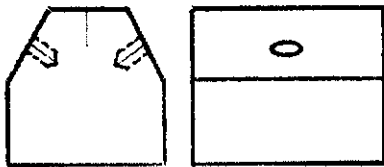
2. Solve any four questions out of remaining four main questions.

2. Draw neat schematic diagrams wherever is necessary, **highlight** important points.

3. Assume suitable data if necessary and mention it.

Q. No	Questions	Pts	C O	B L												
Q1 A	<p>Match the following [4M] for selection of suitable grinding wheel for a <i>good finish</i> and <i>close tolerance</i> in given work-piece materials; Justify points of matched pairs; Give technical alpha numeric specification of grinding wheels can be used for below mentioned work piece material?</p> <table border="1"> <thead> <tr> <th>Workpiece material</th> <th>Grit size</th> <th>Bond grade</th> <th>Abrasive material</th> </tr> </thead> <tbody> <tr> <td>A. Cemented carbide</td> <td>1. Fine</td> <td>3. Soft</td> <td>5. Si C</td> </tr> <tr> <td>B. Alloy steel</td> <td>2. Coarse</td> <td>4. Hard</td> <td>6. CBN</td> </tr> </tbody> </table> <p>1. A:2-4-5, B:1-3-6 2. A:1-4-6, B:2-3-5 3. A:2-3-5, B:2-4-6 4. A:1-3-6, B:1-4-5</p>	Workpiece material	Grit size	Bond grade	Abrasive material	A. Cemented carbide	1. Fine	3. Soft	5. Si C	B. Alloy steel	2. Coarse	4. Hard	6. CBN	10	4	1, 3
Workpiece material	Grit size	Bond grade	Abrasive material													
A. Cemented carbide	1. Fine	3. Soft	5. Si C													
B. Alloy steel	2. Coarse	4. Hard	6. CBN													
Q1 B	<p>Give specific applications (one point) of the following using labelled sketch i) Mandrel ii) Magnetic chuck iii) Rest? [5M] With the help of neat schematic sketch give one of specific application (in terms of product geometry only) of Vertical turret lathe machine? [5M],</p>	10	4	1												
Q2 A	<p>Which of the following abrasive grit material grinding wheel can be applied for precision grinding of heat sensitive ferrous material? Justify the reason? [5M] a) White Al_2O_3 b) Brown Al_2O_3 c) Black SiC d) Green SiC Explain in specific operational applications about Plain Centre type cylindrical grinding machine along with its neat schematic sketch? [5M]</p>	10	4	2, 3												

**END SEMESTER EXAMINATION MARCH 2023**

Q2 B	Estimate <i>best welding speed</i> to be used for welding of 8 mm thick mild steel plates with an ambient temperature of 30° C with welding transformer set at 25 V and current passing is 300 A. Arc efficiency is 0.8 and possible travel speeds are 5 to 10 mm/s. limiting cooling rate for satisfactory performance is 6°C/s at a temperature of 600° C. Data- $k = 0.028 \text{ J/mm.s.}^\circ\text{C}$, $R = 6^\circ\text{C/s}$, $T_o = 30^\circ\text{C}$, $T_c = 600^\circ\text{C}$, $V = 25 \text{ V}$, $I = 300 \text{ A}$, $\rho \cdot c = 0.0023 \text{ J/mm}^3\text{C}$. [8M] List down important functions of flux material used in arc welding? [2M]	10	3	3
Q3 A	Explain material removal <i>mechanism</i> [2M] and <i>characteristics</i> [3M] of "Electro-discharge machining process" process? With the help of neat <i>sketch</i> [2.5M] explain Gas metal arc welding process [2.5M]?	10	3	1
Q3 B	Calculate <i>total time</i> required for (single finishing pass) face milling of top face and side milling of other four faces of Brass block having length of 300 mm, width 150 mm and height of 50 mm? Helical fluted plain HSS milling cutter of diameter 60 mm, length 75 mm and have 6 teeth used for face milling of top surface & Helical fluted end milling cutter of diameter 25.4 mm, length 75 mm and have 6 teeth used for side surface milling. Approach distance and over run distance are 5 mm each for tools, cutting velocity 50 m/min and feed is 0.40 mm/tooth, depth of cut 1 mm?	10	1, 4	1
Q4 A	Give three important <i>differences</i> between Multi-spindle and Gang drilling machine? [5M] For drilling through hole of diameter 12 mm in mild steel work-piece having thickness of 30 mm with solid carbide spiral fluted drill tool. Half of drill point angle is 55°, cutting velocity is 45 m/min, feed is 0.40 mm/rev, and approach and over-run distances for drill tool is 3 mm each. Calculate total <i>machining time</i> required to drill through hole and <i>material removal rate</i> [5M]?	10	4	1
Q4 B	The finished part shown in figure no 01 needs to be manufactured in one setup, desired geometric tolerances have to be satisfied by each part. Which milling machine you will prefer to satisfy above mentioned points [2M]. Explain any four important features of that machine which differentiate it from other milling machine [3M]?  Fig. no 01	10	1, 4	1, 3
	For manufacturing spur gear having 129 numbers teeth's, suggest a <i>work holding device</i> having indexing mechanism, calculate the characteristics of accessories required if reduction ratio up to 40:1 available [5M]?			



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END SEMESTER EXAMINATION MARCH 2023

		10	2	1
Q5	Enlist important (only five important) points to be consider for design of			
A	Locating elements? [5M] Sketch the following and give their specific one application: <i>Box Jig</i> ? [5M]			
Q5	i) A manufacturing industry wants to manufacture 6 meters length of 6 inch X 6 inch cross section, 10 inch diametric cross section steel material in mass production. Suggest a manufacturing process [1M] and explain the basic steps involved [2M] with the help of well labelled schematic sketch [3M]? ii) Match the following [4M]	10	3	2
	1. Dry sand core A. Moisture 2. Collapsibility of core B. High strength 3. Core print C. Hot tears 4. Green sand core D. Seat to position the core [4M]			
Q6	Draw well labelled <i>Sketch</i> [3M] and give product <i>applications</i> of <i>Injection molding process</i> [1M]. A steel slab of dimension $30 \times 20 \times 5$ cm is produced using casting with the help of mould using a side riser. The riser is cylindrical in shape with diameter and height, both equal to D. The freezing ratio of the mould is (show the calculation)	10	3	1
A	a. $4D/75$ b. $8D/75$ c. $75/8D$ d. $75/4D$ [6M]			
Q6	Calculate total machining time to turn "Grey cast iron" solid cylindrical rod of diameter 105 mm X length 330 mm into finish component as shown in figure 2? Finish component has dimensions as shown in figure 02. For, straight O.D. turning and face turning - Cutting velocity is 25 m/min, feed is 0.25 mm/rev & depth of cut is 1 mm for both outer diameter (O.D) turning and face turning operation. For, taper O.D. turning - Cutting velocity is 40 m/min, feed is 0.35 mm/rev & depth of cut is 1 mm for outer diameter (O.D) turning. [Note - i) For calculating machining time of each next pass of outer diameter (O.D) turning, consider mean diameter of work piece at that instant for cutting speed (N_i rpm) calculations, ii) Work holding device will require 25 mm as grip length]	10	3	2
B				



END SEMESTER EXAMINATION MARCH 2023

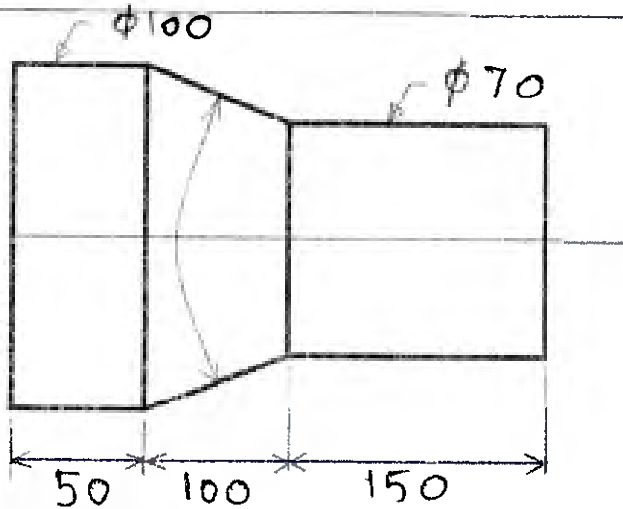


Figure no. 02

Q7 A	Draw neat schematic of radial drilling machine tool? Using simple block diagram give number of degrees of freedom offered by different types of radial drilling machine tool? Also give product application using sketch of product and feature that can be machined using different types of radial drilling machine tool?	10	4	3
Q7 B	A manufacturer receives a purchase order to manufacture the components as shown in figure no.3. Given data-Batch size: 5000 no's, material: Mild steel metal, raw material: sand cast metal component with machining allowance of 1 mm on each surfaces. To finish this raw material into finish component shown in figure no.01, solve/explain the following points; i) State pre-machining sequence of machining process (machine tool used, cutting tool used and accuracy maintained in brief)? ii) Draw the assembly view of jig plate, jig bush and workpiece component for performing the final drilling operation.	10	1, 2	3



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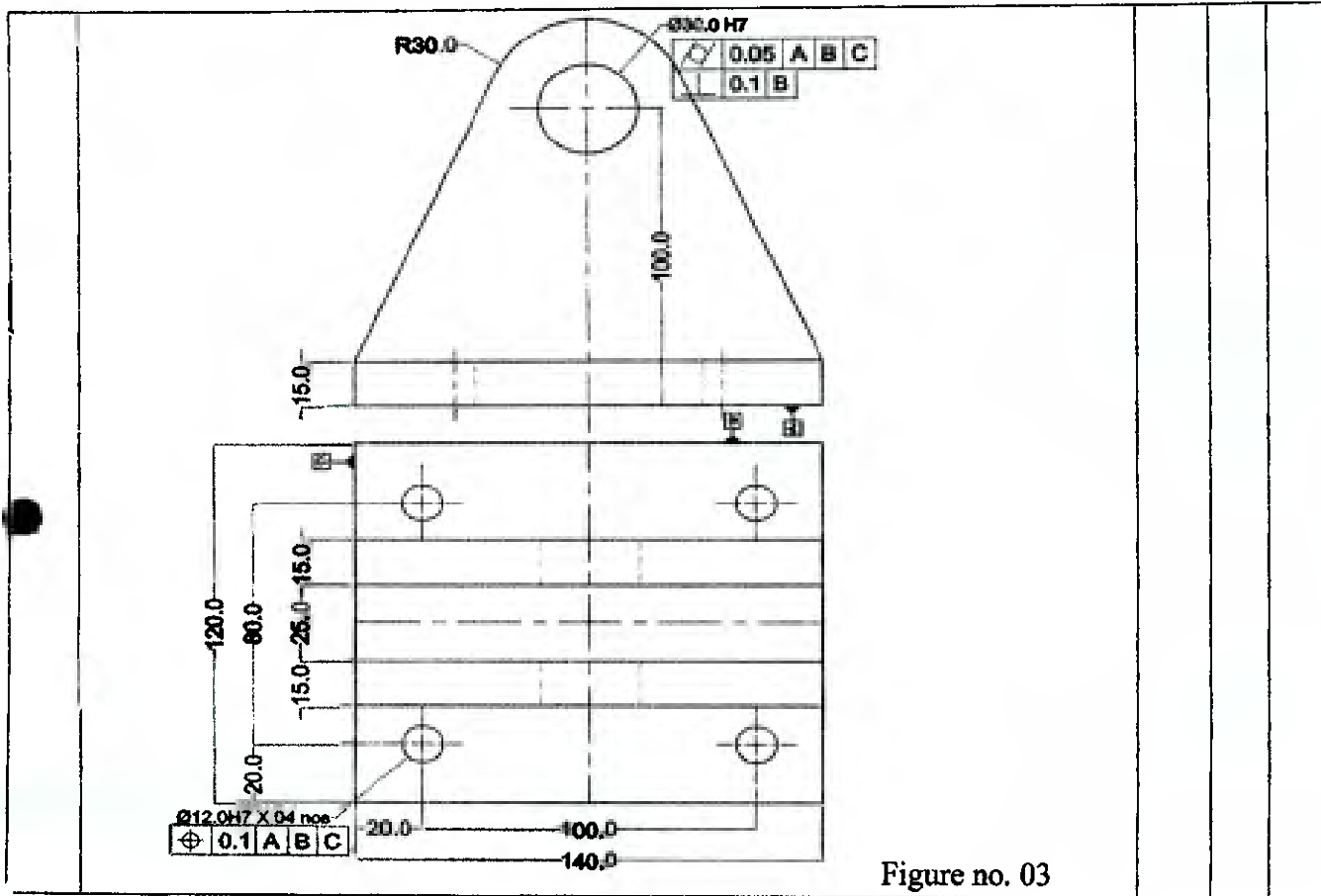


Figure no. 03



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End Semester Examination

March 2023

42/23

Organizational Communication and Interpersonal Skills

Max. Marks: 100

Duration: 3 Hours

Class: S.Y. Mech /Electrical *sem*

Semester: III

Program: B.Tech

Course Code : HSM BTM 307/ BTE 301

Note:

- Q.1. is Compulsory
- Out of remaining 6 questions attempt any 4
- Each question carries 20 marks
- Start every question from a fresh page.

Questions	Answer the following questions:	Grade points	CO	BL	PI
Q.1.	Attempt any <u>four questions out of six</u> . Each question carries five marks: A. Explain the parts of an Email sequentially B. Write down ten most important etiquettes to maintain a professional work environment at the office. C. Define a team. Explain the different types of teams in detail. D. Discuss the pros and cons of Autocratic and Democratic types of leadership with one example each. E. Distinguish between an Abstract and Summary F. Explain the interview screening process steps in detail.	20	01,04	04	10.1.3
Q.2	Wishcart.com is an online company that sells laptop and Mobile accessories like External Hard discs, pen drive, Bluetooth earphones/ Earbuds/ Headphones, stylus, IPad, Mouse, Detachable Keyboards, Laptop stands, Phone covers, etc. to Youth. The Chief Executive officer of the company has noticed a decrease in sales in the last three months and has appointed a market research agency called MARKETSTATS PVT. LTD. to	05+ 15 20	02	03	4.1.2

	investigate current market trends, Availability of customers, and choices of youths. He has also instructed the agency to suggest innovative marketing strategies to help increase sales. Assume that you are the Chief Research officer in MARKETSTATS PVT. LTD. Conducted surveys through different procedures on behalf of the company. Draft a letter report addressed to the CEO of Wishcart.com with your findings and recommendations to increase the sales of the products.				
Q.3.	The maintenance of the classrooms, labs and corridors of your college campus is unsatisfactory. As the General Secretary 2023 of the Students' Council you have been asked by the Principal to study the matter by calling a meeting of the Council Members, class representatives, maintenance officer, Housekeeping personals and students volunteers to discuss the reasons and solutions for improving the hygiene and aesthetics of the campus.	(20)	04	02, 03	3.1.1
A.	Assuming you to be the Magazine Secretary of the council, Draft the Notice and Agenda for the above meeting.	10			
B.	Prepare minute of narration based on the above notice and agenda.	10			
Q.4	Post- Product Engineer: Company: Wipro Pvt. Ltd., M.G. Road, Mumbai Experience- Two years with good communication skills and leadership qualities. Software proficiency: Mat lab, Python, Data structures and algorithms.	(20)	02	01	10.1.2
A.	Write a Job Application letter in response to the above advertisement	10			
B.	Prepare an appropriate Resume with a summary statement	10			
Q.5.	Your best friend's concepts are clear and her reasoning is sound, but in the feedback to her presentations, the audience often says that she is very feeble. You just cannot hear her beyond the first two rows. She fumbles with words during presentations. She has also not made her PowerPoint slides properly as she has not read any rules for preparing PowerPoint presentations	(20)	05	04	10.1.3
	You want to see her improve the quality of delivery of her presentations, as you feel this is a critical skill needed for going forward and achieving success as an engineer.				
A.	What suggestions would you give her for presentations regarding improvement in the Content, Delivery and Attire?	10			
B.	What tips would you like to give for the Visual Aids and Body Language during presentation?	10			

Q.6. A.	As a student of Sardar Patel College of Engineering, Write a detailed Email to the Training and Placement officer of the institute to provide you a Technical internship in the vacation slot of semester III. Provide information about you and the field in which you would like to take the internship. Keep your subject faculty and Principal in courtesy copy.	(20) 10	03	01	10.1.2
Q.6.B.	Emails are one of the most commonly misused tools in the new technology space and one need to ensure that the code of conduct (Netiquette) is not violated in your organization. As a student of second year, list and describes the email etiquettes that are to be followed so as to not create a bad image or reputation. (Write ten email etiquettes)	10			
Q.7. A	Identify the leadership styles and explain the style that emerge from the given case studies: Stephen is the vice president of a medium- sized organization. He has been with the company for over 10 years. He directly manages a team of around 20 departmental managers, who between them are responsible for almost 300 people. He allows his managers to make most operational decisions. For example, when planning a major stock reduction programme, he encourages his managers to put forward ideas and develop plans.	(20) 05	02	01	10.3.2
Q.7. B.	Imagine for a moment that you are an online entrepreneur and you have a very successful website. This website is your primary source of income and your goal is to make it successful. So let's say your to do list looks like this (in random order)	05	01,03	05	12.3.2
Q.7.C	<ul style="list-style-type: none"> • Write sales copy for new product • Watch the comedy skit on You-tube • Re-organize my desktop • Cancel dentist appointment • Download the new podcasts from The Ranveer Show • Attend Birthday party of Batch mate • Prepare a presentation for sales pitch of new product <p>Based on your knowledge of Stephen Covey's Time Management Quadrant, in which quadrant does each task belong to? Draw the quadrant and place the task in the respective quadrants.</p> <p>State whether the following statements are true or false.</p> <p>a. Scheduling meetings is one of the most common tasks in</p>	05	01	06	9.2.1

<p>Q.7. D</p>	<p>modern workplace</p> <p>b. In a group, more the number, more knowledge and information can flow in.</p> <p>c. Leaders are born and not made.</p> <p>d. Statutory reports are written for the smooth functioning of an organization.</p> <p>e. When dealing with corporate politics, it is usually best to respect all people's opinions and treat everyone fairly to help make the best decisions for the success of the company.</p> <p>Fill in the Blanks:</p> <p>a. _____ showcases the contents of the report graphically</p> <p>b. A good report is always _____ in nature.</p> <p>c. _____ are one of the best methods of collecting primary information in writing reports.</p> <p>d. _____ interview is somewhat informal in nature.</p> <p>e. The first constituent of Etiquette is _____.</p>	<p>05</p>	<p>03</p>	<p>06</p>	<p>12.1.1</p>
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Bharatiya Vidya Bhavan's
Sardar Patel College of Engineering

(A Government Aided Autonomous Institute)
Munshi Nagar, Andheri (West), Mumbai – 400058



END SEMESTER EXAMINATION, February-2023

Program: **B.Tech. in Mechanical Engineering**
Class: **Second Year B.Tech. (Mech.)** *Sam III 8/3/23*
Course code: **MC-BTM 002**
Name of the Course: **Indian Traditional Knowledge**

Date: **Feb.-2023**
Duration: **3Hr.**
Max.Points:**100**
Semester: **III**

Instructions: Solve ANY FIVE Questions.

Q. No.	Question	Points	CO	BL	PI	Module
Q.1	a) Explain: "India is the Richest Prize in the World in all respects." Justify: with suitable examples.	(10)	1	V	6.1.1	1
	b) Discuss: Fundamental unity of India since ancient times giving suitable examples.	(10)	1	VI	6.1.1	1
Q.2	a) List: Names of The Vedas and Upvedas. Justify: "Vedas are the oldest and most valuable treasure of knowledge in the library of mankind".	(10)	1	I, V	6.1.1	2
	b) List: Great epics in Indian tradition. Explain: Significance of any one great ancient epic in India.	(10)	1, 2	I, II	6.1.1	2, 6
Q.3	a) Discuss: Valuable work and contribution of ancient Indian scholar Maharshi Kanad.	(10)	1, 2	VI	6.1.1	3
	b) Discuss: Contribution and work of any two ancient Indian scholars in various knowledge domains such as mathematics, astronomy, medicine, metallurgy etc.	(10)	1, 4	VI	6.1.1	3
Q.4	a) Explain: Any two significant medical practices followed in ancient India.	(10)	2	II	6.1.1	4
	b) Justify: "Yoga is the key for long life with good health" in context of ancient as well as modern India.	(10)	2	V	6.1.1	4
Q.5	a) Name: Various classical dances of India. Explain; Any two of them,	(10)	3	I, II	6.1.1	5
	b) Justify: Indian tradition, practices, customs and lifestyle proved more suitable, reliable and effective in the wake of Covid-19 epidemic.	(10)	2, 3	V	6.1.1	5
Q.6	a) Explain: Rich heritage of any two Indian Traditional Languages since ancient times.	(10)	3	II	6.1.1	6
	b) Discuss: Life, Work and contribution of Saint Dnyaneshwar.	(10)	2, 3	VI	6.1.1	6, 7
Q.7	a) Discuss: Teachings of Bhagwan Gautam Buddha	(10)	3, 4	V, VI	6.1.1	7
	b) Discuss: Teachings of Bhagwan Mahavir Vardhaman.	(10)	3	V	6.1.1	7