

CBCS SCHEME

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BME401

Fourth Semester B.E./B.Tech. Degree Examination, June/July 2024 Applied Thermodynamics

Time: 3 hrs.

Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.

2. M : Marks , L: Bloom's level , C: Course outcomes.

3. Use of Steam tables and Thermodynamic data hand book is permitted.

Module – 1			M	L	C
Q.1	a.	With usual notations obtain an thermal efficiency of otto cycle.	6	L2	CO1
	b.	Define Explosion ration and cut off ratio.	4	L1	CO1
	c.	In a air standard diesel cycle, the compression ratio is 16. At the beginning of isentropic compression, the temperature is 15 °C and pressure 0.1 MPa Heat is added until the temperature at the end of the constant pressure process is 1480 °C. Calculate (i) Cutoff ratio (ii) Heat supplied per kg of air (iii) Cycle efficiency (iv) Mean effective pressure.	10	L3	CO1
OR					
Q.2	a.	How Morse test will be carried on a 3 cylinder IC engine?	4	L1	CO1
	b.	Explain the process of combustion in CI engine.	6	L2	CO1
	c.	The following readings were recorded during a trial on a single cylinder 2 stroke diesel engine, power supplied by electric motor = 1.5 kW, rated speed = 500 rpm; net load on brake drum = 225 N; Diameter of brake wheel = 1000 mm; rate of cooling water = 13.65 kg/min ; Change in temperature of cooling water = 10 °C; Fuel consumption = 2 kg / hr ; Calorific value of fuel = 43000 kJ/kg ; AF ratio = 32 : 1; Specific heat of gases = 1.006 kJ/kg K ; Exhaust gas temperature = 345 °C; Ambient temperature = 25 °C and pressure 1 Bar. Considering a square engine of 30 mm bore and stroke length. Determine : (i) Mechanical efficiency (ii) Brake thermal efficiency (iii) Brake specific fuel consumption (iv) Brake mean effective pressure. Also draw the heat balance sheet on % basis.	10	L3	CO1
Module – 2					
Q.3	a.	Derive an expression of air standard efficiency of Joule cycle.	6	L2	CO2
	b.	Enumerate the differences between open and closed cycle gas turbine.	4	L1	CO2
	c.	For an actual gas turbine cycle, show that the optimum pressure ratio for maximum net work output is given by $R_p = \left(\eta_c \eta_T \frac{T_3}{T_1} \right)^{\frac{\gamma}{2(\gamma-1)}}$.	10	L3	CO2
OR					
Q.4	a.	Explain the working principle of jet propulsion.	3	L2	CO2
	b.	How turboprop engine works explain clearly?	7	L2	CO2
	c.	A jet propelled engine having 2 jets and working on a turbojet has a velocity of 210 m/s. When flying at an altitude of 12000 m. The density of air at this altitude is 0.172 kg/m ³ . The resistance of the plane is 6670.8 N and propulsive efficiency of the jet is 50%. The overall efficiency of the unit is 18%, calorific value of the fuel is 4.895 × 10 ⁴ kJ/kg. Calculate (i) Absolute velocity of jet (ii) Quantity of air compressed per min (iii) Diameter of jet (iv) Power O/P (v) Specific fuel consumption (vi) A : F ratio.	10	L3	CO2

Module – 3					
Q.5	a.	With the help of neat sketch, explain the working of open feed water heater.	8	L2	CO3
	b.	Steam from a boiler enters a turbine at 25 bar and expands to condenser pressure of 0.2 bar. Determine the rankine cycle efficiency by neglecting pump work: (i) When steam is 80% dry at turbine inlet. (ii) When steam is saturated at turbine inlet. (iii) When steam is superheated at turbine inlet by 76.1 °C (iv) Represent above three processes on same TS diagram.	12	L3	CO4
OR					
Q.6	a.	Enumerate the difference between Carnot cycle and Rankine cycle.	4	L1	CO3
	b.	Obtain an expression for air standard efficiency of Rankine cycle.	6	L2	CO3
	c.	The steam is supplied to the turbine at a pressure of 32 bar and temperature of 410 °C. The steam then expands isentropically to a pressure of 0.08 bar. Find the dryness fraction of steam at the end of expansion and thermal efficiency of cycle. If the steam is reheated at 5.5 bar temperature of 395 °C and then expand isentropically to 0.08 Bar. What will be the dryness fraction and thermal efficiency of cycle?	10	L3	CO3
Module – 4					
Q.7	a.	List out the desirable properties of refrigerant.	4	L1	CO4
	b.	Derive an expression for COP of an refrigeration system.	6	L2	CO4
	c.	Atmospheric air at a pressure of 1 Bar and temperature -5 °C, is drawn in the cylinder of the compressor of Bell-Coleman refrigerating machine. The air is compressed isentropically to a pressure of 5 Bar and cooled to 15 °C in the cooler at constant pressure. It is then expanded to a pressure of 1 Bar in an expansion cylinder from where it is passed to cold chamber. Calculate the work done/kg of air and COP of the plant. Assume the cycle with isentropic compression with $\gamma = 1.4$ and polytropic expansion with $n = 1.2$, C_p of air as 1KJ/kgK.	10	L3	CO4
OR					
Q.8	a.	Define (i) Sensible cooling (ii) Sensible heating	4	L1	CO4
	b.	How cooling tower plays an important role in air conditioning system?	6	L2	CO4
	c.	40 m ³ of air per minute at 31 °C DBT and 18.5 °C WBT is passed over the cooling coil whose surface temperature is 4.4 °C. The coil cooling capacity is 3.56 Tonnes of refrigeration under the given condition of air. Determine the DBT and WBT of the air leaving the cooling coil and by pass factor.	10	L3	CO4
Module – 5					
Q.9	a.	Why multistage compressors are preferred over a single stage compressor? Also list the advantages of multistage compressors.	4	L2	CO5
	b.	Define (i) Isothermal efficiency (ii) Adiabatic efficiency (iii) FAD	6	L1	CO5
	c.	A multistage compressor is to be designed to elevate the pressure from 1 Bar to 120 Bar such that the stage pressure ratio will not exceed 4. Determine (i) Number of stages (ii) Exact stage pressure ratio (iii) Intermediate pressure (iv) The minimum power required to compress 15 m ³ /min of free air. Take $n = 1.2$	10	L3	CO5
OR					
Q.10	a.	Define Critical pressure ratio, also with usual notations derive critical pressure ratio.	10	L2	CO5

	b. A turbine having a set of 16 nozzles receiver steam at 20 Bar and 400° C. The pressure of the steam at nozzle exit is 12 Bar. If the discharge rate is 260 kg/min and nozzle efficiency is 90%. Calculate the cross sectional area at the nozzle exit. If the steam has a velocity of 80 m/s at entry to the nozzle, find the % increase in discharge.	10	L4	CO5
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CBCS SCHEME

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BME402

Fourth Semester B.E./B.Tech. Degree Examination, June/July 2024 Machining Science and Metrology

Time: 3 hrs.

Max. Marks: 100

*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.*

Module - 1				M	L	C
Q.1	a.	With a neat sketch, explain the nomenclature of single point cutting tool.	07	L2	CO1	
	b.	Explain briefly mechanics of chip formation process.	06	L1	CO1	
	c.	The following data refer to an orthogonal cutting process. Chip thickness 0.62 mm, feed 0.2 mm, rake angle 15°. Calculate chip reduction coefficient and shear angle.	07	L3	CO1	
OR						
Q.2	a.	With a neat sketch, explain the main parts of a lathe.	07	L2	CO1	
	b.	Briefly explain the major differences between capstan and turret lathe.	06	L1	CO1	
	c.	Explain any five operations performed on a lathe.	07	L2	CO1	
Module - 2						
Q.3	a.	Explain with a neat sketch, up milling and down milling methods.	07	L2	CO2	
	b.	Briefly explain the broad classification of milling machines.	06	L1	CO2	
	c.	By applying the knowledge of indexing, discuss the different types of indexing that are in practice.	07	L2	CO2	
OR						
Q.4	a.	With a neat sketch, explain the radial drilling machine.	07	L2	CO2	
	b.	Apply the knowledge of mechanism, explain the quick return mechanism that are used in shaping machine.	06	L3	CO2	
	c.	With a neat sketch, explain the centerless grinding machine.	07	L2	CO3	
Module - 3						
Q.5	a.	With neat sketches, analyze the different heat zones that are present during metal cutting process.	07	L2	CO3	
	b.	Explain the factors that affect the heat generation in metal cutting process.	06	L2	CO3	
	c.	Briefly explain the different wear mechanisms of cutting tools.	07	L2	CO3	
OR						
Q.6	a.	Briefly explain the different cutting tool materials that are used in practice.	07	L2	CO3	
	b.	Analyze the life of tool which is used for rough turning which give a tool life of 1 hrs at a cutting speed of 30 m/min. What will be the life of the tool when it is used at the same cutting speed for finish turning? Take $n = 0.125$ for rough cut and $n = 0.1$ for finish cut.	06	L4	CO3	
	c.	Briefly discuss the different types of cutting fluids.	07	L2	CO3	
Module - 4						
Q.7	a.	Briefly discuss the major objective of metrology.	07	L2	CO4	
	b.	Briefly discuss the following standards of measurement: (i) Line standard (ii) End standard (iii) Wave length standard	06	L2	CO4	
	c.	Three 100 mm end bars are measured on a level comparator by first wringing them together and comparing with a 300 mm bar. The 300 mm bar has a known error of +40 μm and the three bars together measures 64 μm less than the 300 mm bar. Bar A is 18 μm longer than bar B and 23 μm longer than bar C. Determine the actual length of each bar.	07	L3	CO4	
OR						

Q.8	a.	Briefly explain Inter changeability and selective assembly.	06	L2	CO4
	b.	Define fit. Explain the different types of fits designed for different applications.	06	L2	CO4
	c.	Determine the tolerances on the hole and shaft for a precision running fit designated by 50 H ₇ g ₆ . Given: (i) 50 mm lies between 30-50 mm (ii) $i(\text{microcs}) = 0.45 (D)^{1/3} + 0.001 D$ (iii) Fundamental deviation for 'H' hole = 0 (iv) Fundamental deviation for 'g' shaft = $-2.5 D^{0.34}$ (v) IT ₇ = 16i (vi) IT ₆ = 10i State the actual maximum and minimum sizes of the hole and shaft and maximum and minimum clearances.	08	L3	CO4
Module – 5					
Q.9	a.	Briefly explain with neat sketch, plug and ring gauges.	07	L2	CO5
	b.	With a neat sketch, explain the sigma comparator.	07	L2	CO5
	c.	With a neat sketch, explain the principle of sine bar.	06	L2	CO5
OR					
Q.10	a.	Discuss the different materials used for the construction of gauges.	07	L2	CO5
	b.	With a neat sketch, explain the Zeiss Ultra Optimeter.	07	L2	CO5
	c.	With a neat sketch, explain the Verneir Bevel Protractor.	06	L2	CO5

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Module – 3

Q.5	a.	Obtain the Euler's equation of motion along a stream line. Obtain Bernoulli's equation. Mention the assumption made.	08	L3	CO3
	b.	Derive an expression for discharge through a rectangular notch.	06	L3	CO3
	c.	An oil of specific gravity 0.8 is flowing through a venturimeter having inlet diameter 20 cm and throat diameter 10 cm. The oil-mercury differential manometer shows a reading of 25 cm. Calculate the discharge of oil through the horizontal venturimeter. Take $C_d = 0.98$.	06	L3	CO3

OR

Q.6	a.	Derive Darcy-Weisbach equation for loss of head due to friction in pipe.	08	L3	CO3
	b.	Derive an expression for the loss of head due to the sudden enlargement in pipe.	06	L3	CO3
	c.	What are the energy losses that occur in pipe? Give the expressions for different minor energy losses.	06	L2	CO3

Module – 4

Q.7	a.	Define the drag force and lift force. Also derive their expressions.	10	L3	CO4
	b.	Briefly explain what is meant by boundary layer and hence define the following: (i) Boundary layer thickness (ii) Displacement thickness	06	L2	CO4
	c.	Explain what is stream-lined body and bluff body.	04	L2	CO4

OR

Q.8	a.	What is dimensional homogeneity? Explain with examples.	04	L2	CO4
	b.	What is similitude? Explain the following : (i) Geometric similarity (ii) Dynamic similarity (iii) Kinematic similarity	08	L2	CO4
	c.	Show by Buckingham's π theorem that the frictional torque 'T' of a disc of diameter 'D' rotating at speed N in a fluid of viscosity ' μ ' and density ' ρ ' in a flow is given by $T = D^5 N^2 \rho \phi \left[\frac{\mu}{D^2 N \rho} \right]$	08	L3	CO4

Module – 5

Q.9	a.	Show that velocity of propagation of elastic wave in an adiabatic medium is given by $C = \sqrt{KRT}$ starting from fundamentals.	10	L3	CO5
	b.	An air plane is flying at an altitude of 15 km where the temperature is -50°C . The speed of the plane corresponds to Mach number of 1.6. Assume $K = 1.4$ and $R = 287 \text{ J/kgK}$ for air, find the plane speed and Mach angle.	10	L3	CO5

OR

Q.10	a.	Define the following terms: (i) Subsonic flow (ii) Sonic flow (iii) Supersonic flow (iv) Mach number (v) Mach angle	10	L2	CO5
	b.	Explain the necessity of CFD. Mention its advantages, limitations and its applications.	10	L2	CO5

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BME405A

Fourth Semester B.E./B.Tech. Degree Examination, June/July 2024

Non Traditional Machining

Time: 3 hrs.

Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.

2. M : Marks, L: Bloom's level, C: Course outcomes.

Module – 1			M	L	C
Q.1	a.	Define Non-traditional machining process. Write the classification of NTM.	8	L1	CO1
	b.	Justify the need of non-traditional machining process.	6	L2	CO1
	c.	List the applications of NTM.	6	L1	CO1
OR					
Q.2	a.	Differentiate between Traditional and Non-traditional machining processes.	10	L2	CO1
	b.	Explain the physical parameters and process capability of the Non-traditional machining processes.	10	L2	CO1
Module – 2					
Q.3	a.	With a neat sketch, explain the working principle of ultrasonic machining.	10	L2	CO2
	b.	Explain the effector process parameters of Ultrasonic machining.	10	L2	CO2
OR					
Q.4	a.	With a neat sketch, explain the working principle of Abrasive Jet Machining (AJM).	10	L2	CO2
	b.	Explain process parameters on Abrasive Jet Machining.	10	L2	CO2
Module – 3					
Q.5	a.	With a neat sketch, explain the working principle of Electro Chemical Grinding (ECG).	10	L2	CO3
	b.	Explain the following in chemical machining process: (i) Maskants (ii) Etchants	10	L2	CO3
OR					
Q.6	a.	Explain with flow chart the chemical blanking process. Mention its applications.	10	L2	CO3
	b.	Describe the various process parameters affecting ECM.	6	L2	CO3
	c.	List the advantages and disadvantages of ECM.	4	L2	CO3
Module – 4					
Q.7	a.	Explain with a neat sketch, the non-thermal generation of plasma and mechanism of metal removal in PAM.	10	L2	CO4
	b.	With a schematic representation, explain the travelling wire EDM processes.	10	L2	CO4

OR					
Q.8	a.	Differentiate between transferred and non transferred arc plasma torch mode of operation.	8	L2	CO4
	b.	Explain with a neat sketch, the plasma arc machining.	8	L2	CO4
	c.	What are the advantages and disadvantages of EDM?	4	L1	CO4
Module – 5					
Q.9	a.	With a neat sketch, explain Laser Beam Machining (LBM).	10	L2	CO5
	b.	Explain the process parameters of Electron Beam Machining.	10	L2	CO5
OR					
Q.10	a.	With a neat sketch, explain Electron Beam Machining.	10	L2	CO5
	b.	Explain with a neat sketch, the ND-YAG laser used in the laser beam machining.	10	L2	CO5

CBCS SCHEME

BCS456C

USN

Question Paper Version : B

Fourth Semester B.E. Degree Examination, June/July 2024

UI/UX

Time: 1 hr.]

[Max. Marks: 50

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the **fifty** questions, each question carries one mark.
2. Use only **Black ball point pen** for writing / darkening the circles.
3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**
4. Darkening two circles for the same question makes the answer invalid.
5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.

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1. Some of the guidelines and much of practical user performance depend on
 - a) The concepts of over satisfaction
 - b) The concepts of UX guidelines
 - c) The concepts of human working memory
 - d) All of these
 2. Sensory memory is of _____
 - a) Small brief duration
 - b) Large brief duration
 - c) Very brief duration
 - d) None of these
 3. The selected UX design guidelines are generally organized by the _____
 - a) UAF structure
 - b) API structure
 - c) GUI structure
 - d) All of these
 4. Design examples of UX guidelines from everyday things such as
 - a) Hair dryers
 - b) Automobiles
 - c) Public doorways
 - d) All of these
 5. Planning guidelines are the support _____
 - a) Users
 - b) Servants
 - c) Public
 - d) None of these
 6. User actions to determine _____
 - a) When tasks or steps to do
 - b) What tasks or steps to do
 - c) How tasks or step to do
 - d) Why tasks or steps to do
 7. Translation guidelines are to support _____
 - a) Users
 - b) Customers
 - c) Peoples
 - d) None of these

8. Including human memory support in the task structure _____
 - a) Design simplicity
 - b) Flexibility
 - c) Efficiency
 - d) Concurrency
9. Physical actions guidelines support users is doing physical actions including _____
 - a) Typing
 - b) Clicking
 - c) Dragging in a GUI, scrolling on a web page
 - d) All of these
10. The outcomes part of the interaction cycle is about supporting _____
 - a) Users through complete and correct “backend” functionality
 - b) User’s interaction cycle functionality
 - c) Dragging in a GUI, scrolling on a web page functionality
 - d) All of these
11. A sense is a design representation is
 - a) Interaction design
 - b) Wire frame
 - c) Prototype
 - d) Design thinking
12. The ideas of prototyping is _____
 - a) Timeless and universal
 - b) Build and real thing
 - c) Choice and approach
 - d) all of these
13. Which prototype is demonstrating the product concept and for conveying an early product overview?
 - a) Vertical prototype
 - b) Upper prototype
 - c) Horizontal prototype
 - d) None of these
14. In which prototype combines the advantages of both horizontal and vertical, offering a good compress for system evaluation?
 - a) ‘R’ prototype
 - b) ‘Y’ prototype
 - c) ‘T’ prototype
 - d) ‘D’ prototype
15. A vertical prototype is associated with _____
 - a) User actions, in depth
 - b) Customer actions, in depth
 - c) Stake holder actions in depth
 - d) All of these
16. Prototype that are not faithful representations of the details of look, feel and behavior is _____
 - a) Vertical prototype
 - b) Local prototype
 - c) Horizontal prototype
 - d) Low fidelity prototype
17. In which prototype are more detailed representation of designs _____
 - a) High fidelity prototype
 - b) Local prototype
 - c) Horizontal prototype
 - d) Low fidelity prototype
18. Which one of the fidelity is not independent _____
 - a) Interactivity of prototype
 - b) Local prototype
 - c) Horizontal prototype
 - d) Low fidelity prototype

19. Paper prototype can act as _____
 a) Coding blocker
 c) Prototype blocker
 b) View blocker
 d) All of these
20. A 'T' prototype combines _____
 a) Both paper and local prototype
 c) Both low fidelity and high fidelity
 b) Both horizontal and local prototype
 d) None of these
21. Design concept includes _____
 a) Usability
 b) Accessibility
 c) Both (a) and (b)
 d) None of these
22. _____ is a human centered approach to problems solving that emphasizes empathy, creativity and collaboration.
 a) Design
 b) Design thinking
 c) User perspectives
 d) User collaboration
23. Generation of new idea is _____
 a) Critiquing
 b) Designing
 c) Idea creation
 d) Sketching
24. Interaction perspective is _____
 a) How the system work
 c) How the system communicate
 b) How the user operate the system
 d) How a system interface
25. The long term design documentation is _____
 a) Sketching
 b) Design
 c) Drawing
 d) ideation
26. Critiquing is about _____
 a) Review and judgment
 c) Idea creation
 b) Joy and enjoyment
 d) Theme or ideas
27. Rapid creation of freehand drawing is _____
 a) Drawing
 c) Designing
 b) Sketching
 d) Intellectual drawing
28. Story board is a sequence of _____
 a) Frame clips
 c) Sketches
 b) Visual frames
 d) Graphics frames
29. Ideation is an _____
 a) Active
 b) Fast moving
 c) Collaboration
 d) All of these
30. Use mental model is a description of _____
 a) How the system work
 c) Something works in the real world
 b) Explanation of someone's thought
 d) None of these
31. Usability is an established, as a part of the _____
 a) Technology World
 c) Designer's World
 b) Computation World
 d) None of these
32. Example of extracting a requirement statement for _____
 a) Ticket Kiosk system
 c) Website design system
 b) Software system
 d) All of these

33. The term translate each user need into one or more introduction design that is ____
- a) Extracting statement
 - b) Requirement statement
 - c) Requirement structure
 - d) Terminology statement
34. What UX encompasses of ____
- a) Only visual elements
 - b) Only functional element
 - c) Both visual and functional element
 - d) Either visual nor functional element
35. A business – a – case a user experience typically includes
- a) Technical specification of the product
 - b) Analysis of competitor pricing strategies
 - c) Justification of investment based on quotation of ROI
 - d) Historical data on employee turn over rate.
36. The primary goal of UI design is to ____
- a) To maximize user satisfaction and usability
 - b) To optimize loading times
 - c) To minimize user engagement
 - d) All of these
37. Which of the following is not a usability principle?
- a) Learn ability
 - b) Efficiency
 - c) Memorability
 - d) Cost-effectiveness
38. In concern to design UI stands for ____
- a) User involvement
 - b) User interface
 - c) User interaction
 - d) User inspection
39. The difference between UI and UX is/are:
- a) UI focuses on virtual elements, while UX focuses on functionality and user satisfaction
 - b) UI and UX are interchangeable terms
 - c) UI focuses on functionality, while UX focuses on elements
 - d) UI focus on functionality, while UX focuses on user satisfaction
40. Emotional impact is user experience design refers to:
- a) The psychological effects of color choices on users
 - b) How user feel when they interact with a product or service
 - c) The technical performance of the website or app
 - d) The number of features available to users.
41. The purpose of wire framing in UI/UX design is to ____
- a) to create a final polished design
 - b) to communicate layout and functionality
 - c) to select color schemes
 - d) to add animations
42. UX measure is ____
- a) Usage of your interaction design
 - b) Usage of conceptual design
 - c) Usage of design thinking
 - d) Usage of ideations
43. Measuring instrument is a description of ____
- a) Providing values for the particular UX measure
 - b) Providing values for the UX targets
 - c) Providing values for the UX metrics
 - d) Providing values for UX goals.

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BBOC407

Fourth Semester B.E./B.Tech. Degree Examination, June/July 2024 Biology for Engineers (CSE)

Time: 3 hrs.

Max. Marks: 100

*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks, L: Bloom's level, C: Course outcomes.*

Module – 1			M	L	C
Q.1	a.	Discuss the various components of Eukaryotic cells.	10	L3	CO1
	b.	Identify the applications of stem cells.	5	L2	CO1
	c.	Explain the functions of vitamins.	5	L2	CO1
OR					
Q.2	a.	Compare Prokaryotic and Eukaryotic cells.	10	L3	CO1
	b.	Explain the properties of Carbohydrates.	5	L2	CO1
	c.	Explain the functions of Lipids.	5	L2	CO1
Module – 2					
Q.3	a.	Highlighting the properties of cellulose, justify cellulose as an effective water filter.	10	L3	CO1
	b.	Explain the working and development of DNA vaccines by taking suitable example.	10	L2	CO1
OR					
Q.4	a.	What are Bioplastics? Justify the use of PHA as Bioplastic mentioning its properties and applications.	10	L3	CO1
	b.	Discuss the following : (i) Meat analogs of protein. (ii) Lipids as cleaning agents.	10	L2	CO1
Module – 3					
Q.5	a.	What is Electro Encephalogram (EEG)? Discuss the types of Brain activity detected with EEG. Write any three applications.	10	L3	CO2
	b.	What are Pace Makers? Explain basic design and construction of Pace Makers.	10	L2	CO2
OR					
Q.6	a.	Justify Lungs as purification system.	10	L3	CO2
	b.	Explain architecture of Rod and Core cells with suitable diagram.	10	L2	CO2
Module – 4					
Q.7	a.	What is ultrasonography? Explain the uses and working principle.	10	L2	CO3
	b.	What is lotus leaf effect? Explain the mechanism and applications of super Hydrophobic effect.	10	L2	CO3
OR					
Q.8	a.	The structure and design of Kingfisher beak lead to the design of Bullet trains. Explain.	10	L2	CO3
	b.	Explain the working and applications of Bionic Leaf Technology.	10	L2	CO3

Module – 5					
Q.9	a.	Explain the use of Electrical tongue in food science.	10	L2	CO4
	b.	Explain the advantages and limitations of Artificial Intelligence for disease diagnosis.	10	L2	CO4
OR					
Q.10	a.	Explain Bioengineering solutions for muscular dystrophy and Osteroporosis.	10	L2	CO4
	b.	Explain most commonly used Bioprinting Techniques.	10	L2	CO4

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Question Paper Version : C

Fourth Semester B.E./B.Tech. Degree Examination, June/July 2024
Universal Human Values Course

Time: 1 hr.]

[Max. Marks: 50

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the **fifty** questions, each question carries one mark.
2. Use only **Black ball point pen** for writing / darkening the circles.
3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**
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5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.

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- 1 All the units of nature can be classified into _____ orders
a) Two b) Three c) Four d) Six
 - 2 Which of the following does not form an order in nature?
a) BIO b) Animal c) Consciousness d) Human
 - 3 Which of the following statements is true,
a) Material units have only two kinds of activities recognizing and fulfilling
b) Material units have three kinds of activities assuming, recognizing and fulfilling
c) Material units have only four kinds of activities knowing, assuming, recognizing and fulfilling
d) None of the statement
 - 4 Which of the following statement is not true?
a) There is inter connectedness in nature
b) There is recyclability and self regulation in nature
c) There is struggle for survival in nature
d) There is mutual fulfillment in nature
 - 5 According to quantity, which of the following is true for the orders in nature
a) Bio order >> Physical order >> Animal order >> Human order
b) Animal order >> Bio order >> Physical order >> Human order
c) Physical order >> Bio order >> Animal order >> Human order
d) None of the above

- 21 The only effective way to ensure professional ethics is by developing
 a) Knowledge b) Ethical conduct
 c) Ethical competence d) Professional activities
- 22 How does unethical practices in various professions can be resolved
 a) Through skills b) Through knowledge
 c) Through practical d) Via right understanding
- 23 What provides clear guidance and policy frame work conducive to the development of an un-fragmented human society and a universal human order
 a) Humanistic education b) Humanistic constitution
 c) Profession d) Ethical Human conduct
- 24 The right understanding gained through self exploration also enables us to identify the definitiveness of human conduct. What is this called?
 a) Ethical Human conduct b) Values
 c) Policy d) Utility values
- 25 Primary step to move towards the holistic alternative is to develop the right understanding among humans and the commitment to
 a) Do practical b) Remain calm c) Live accordingly d) Teach others
- 26 The right understanding helps us identify the comprehensive human goal in terms of
 a) Samadhan b) Samridhi c) Sah-astitva d) All of these
- 27 The humanistic education will facilitate the process of self exploration which will lead to continuous
 a) Education b) Self evolution c) Development d) People friendly
- 28 The values of human being can be enumerated as
 a) Nine b) Thirty c) Eighteen d) Twenty four
- 29 Which of the following is not a characteristic of professionalism?
 a) Kindness b) Competency c) Morality d) Complacency
- 30 There are six characteristics of a professional style which is not a professional style?
 a) Ethical b) Emotional c) Responsible d) Intellectual.
- 31 Harmony should be maintained in
 a) Between body and life
 b) Between self and society
 c) Between life and environment
 d) All of the above
- 32 The foundational value in relationship is
 a) Respect b) Love c) Trust d) Glory
- 33 Ensuring right understanding and feeling in the others is called
 a) Care b) Affection c) Gratitude d) Guidance
- 34 Harmony in the family is the building block for harmony in the
 a) Society b) Individual c) Friend d) Relative
- 35 The total numbers of feelings in human relationship
 a) 5 b) 10 c) 9 d) 8

- 36 Comprehensive human goal is right understanding prosperity, trust (fearlessness) and
 a) Co-existence b) Happiness c) Abhay d) None
- 37 There is justice in relationship when there is
 a) Mutual fulfillment b) Self regulation c) Freedom d) None
- 38 The extension of family is
 a) Self b) Body c) Society d) Nature
- 39 The feeling of relatedness to all human beings is called
 a) Love b) Affection c) Gratitude d) Respect
- 40 Acceptance of excellence in others is called
 a) Reverence b) Glory c) Gratitude d) Guidance
- 41 Harmony should be maintained in
 a) Between body and life
 b) Between self and society
 c) Between life and environment
 d) All of these
- 42 I being the
 a) does, seer and Enjoyer b) doer
 c) seer d) enjoy
- 43 Which of the following is NOT response of the self?
 a) Knowing b) Assuming
 c) Recognizing d) Preconditioning
- 44 Activities of self (I) are
 a) Happiness b) Prosperity
 c) Desire, thought and expectation d) None
- 45 The requirement of body is right utilization and nurturing
 a) Desire b) Protection c) Thought d) Expectation
- 46 The _____ is an instrument of _____
 a) I, Body b) Body, I c) Both a and b d) None
- 47 The activity of desire, thought and expecting together is called as
 a) Body b) Health c) Imagination d) Future
- 48 Imaging is _____ with time
 a) Continuous b) Discontinuous c) Random d) Different
- 49 Where there is harmony among the parts of the body it is known as
 a) Swasthya b) Sanyam c) Prosperity d) None
- 50 Knowing means having the
 a) Assumption
 b) Right understanding
 c) Right feeling
 d) None

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