

CBCS SCHEME

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21MAT41

Fourth Semester B.E. Degree Examination, June/July 2023 Complex Analysis, Probability and Statistical Methods

Time: 3 hrs.

Max. Marks: 100

*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. Use of Statistical table is permitted.*

Module-1

- 1 a. Derive Cauchy – Riemann equations in Cartesian form. (06 Marks)
 b. Show that $f(z) = \sin z$ is analytic and hence find its derivative. (07 Marks)
 c. Evaluate $\int_{(0,3)}^{(2,4)} (2y + x^2)dx + (3y - x)dy$, along the parabola $x = 2t, y = t^2 + 3$ (07 Marks)

OR

- 2 a. Determine the analytic function $f(z) = u + iv$, whose imaginary part is $(x^2 - y^2) + \frac{x}{x^2 + y^2}$ by Milne – Thompson method. (06 Marks)
 b. State and prove Cauchy’s integral theorem. (07 Marks)
 c. Evaluate $\int_c \frac{dz}{z^2 - 4}$ over $c : |z| = 1$ (07 Marks)

Module-2

- 3 a. Show that $J_{-\frac{1}{2}}(x) = \sqrt{\frac{2}{\pi x}} \cos x$ (06 Marks)
 b. If α and β are the two roots of $J_n(x) = 0$ then prove that $\int_0^1 x J_n(\alpha x) J_n(\beta x) dx = 0$ if $\alpha \neq \beta$. (07 Marks)
 c. Express $f(x) = 2x^3 - x^2 - 3x + 2$ in terms of Legendre polynomials. (07 Marks)

OR

- 4 a. Obtain the series solution of Bessel’s differential equation $x^2 y'' + xy' + (x^2 + n^2)y = 0$ leading to $J_n(x)$. (06 Marks)
 b. Show that $J_{+\frac{1}{2}}(x) = \sqrt{\frac{2}{\pi x}} \sin x$ (07 Marks)
 c. Prove that, $x^3 + 2x^2 - 4x + 5 = \frac{2}{5}P_3(x) + \frac{4}{3}P_2(x) - \frac{17}{5}P_1(x) + \frac{17}{5}P_0(x)$ (07 Marks)

Module-3

- 5 a. Find the Karl Pearson’s coefficient correlation for the following two groups.

A	92	89	87	86	83	77	71	63	53	50
B	86	83	91	77	68	85	52	82	37	57

(06 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.

- b. Fit a straight line of the form $y = ax + b$ for the data by the least squares method.

x	0	1	2	3	4	5
y	9	8	24	28	26	20

(07 Marks)

- c. Using the method of least squares fit a curve $y = ax^b$ for the data

x	1	2	3	4	5
y	0.5	2	4.5	8	12.5

(07 Marks)

OR

- 6 a. Ten students got the percentage of marks in two subjects x and y. Compute their rank correlation coefficient.

Marks in x	78	36	98	25	75	82	90	62	65	39
Marks in y	84	51	91	60	68	62	86	58	53	37

(07 Marks)

- b. Compute the means \bar{x} , \bar{y} and the coefficient of correlation r from the given regression lines $2x + 3y + 1 = 0$, $x + 6y - 4 = 0$.

(07 Marks)

- c. Fit a second degree parabola $y = ax^2 + bx + c$ in the least square sense for the following data and hence estimate y at $x = 6$.

x	1	2	3	4	5
y	10	12	13	16	19

(06 Marks)

Module-4

- 7 a. A random variable X has the following probability function :

X	0	1	2	3	4	5	6	7
P(X)	0	k	2k	2k	3k	k^2	$2k^2$	$7k^2 + k$

Find k and evaluate $P(X \geq 6)$, $P(3 < X \leq 6)$.

(06 Marks)

- b. Find the mean and standard deviation of Poisson distribution.

(07 Marks)

- c. The probability that a person aged 60 years will live upto 70 is 0.65. What is the probability that out of 10 persons aged 60 atleast 7 of them will live upto 70?

(07 Marks)

OR

- 8 a. Find a constant K such that

$$f(x) = \begin{cases} kx^2, & 0 \leq x \leq 3 \\ 0, & \text{otherwise} \end{cases} \text{ is a pdf.}$$

Also, compute : (i) $P(1 < x < 2)$ (ii) $P(x \leq 1)$ (iii) $P(x > 1)$

(06 Marks)

- b. Find the mean and standard deviation of Binomial distribution.

(07 Marks)

- c. In a test of electric bulbs it was found that the lifetime of bulbs of a particular brand was normally distributed with an average life of 2000 hours and standard deviation of 300 hours. If a firm purchases 2500 bulbs, find the number of bulbs that are likely to last for

- (i) More than 2100 hours
 (ii) Less than 1950 hours
 (iii) Between 1900 and 2100 hours

Given that, $\phi(1.67) = 0.4525$; $\phi(0.83) = 0.2967$

(07 Marks)

Module-5

- 9 a. The joint probability distribution of the random variables X and Y are given as follows:

X \ Y	1	3	9
2	$\frac{1}{8}$	$\frac{1}{24}$	$\frac{1}{12}$
4	$\frac{1}{4}$	$\frac{1}{4}$	0
6	$\frac{1}{8}$	$\frac{1}{24}$	$\frac{1}{12}$

Find (i) $E(X)$ (ii) $E(Y)$ (iii) $E(XY)$ (iv) $Cov(X, Y)$
 (v) Marginal distribution of X and Y

(06 Marks)

- b. Define (i) Null hypothesis (ii) Type-I and Type-II error (iii) Level of Significance
 (07 Marks)
- c. A sample of 100 tyres is taken from a lot. The mean life of tyres is found to be 40,650 kms with a standard deviation of 3260. Can it be considered as a true random sample from a population with mean life of 40,000 kms (use 0.05 level of significance). (Given $z_{0.05} = 1.96$, $z_{0.01} = 2.58$)
 (07 Marks)

OR

- 10 a. The joint probability distribution of two random variables X and Y are as follows:

X \ Y	-2	-1	4	5
1	0.1	0.2	0	0.3
2	0.2	0.1	0.1	0

Determine : (i) Marginal distribution of X and Y (ii) Find $E(X)$, $E(Y)$ and $E(XY)$
 (iii) Covariance of X and Y

(06 Marks)

- b. In the experiment of pea breeding the following frequencies of seeds were obtained.

Round and Yellow	Wrinkled and Yellow	Rounded Green	Wrinkled and Green	Total
315	101	108	32	556

Theory predicts that the frequencies should be in proportions 9:3:3:1. Examine the correspondence between theory and experiment. (Given $\chi_{0.05}^2 = 7.815$ for 3df). (07 Marks)

- c. A group of 10 boys fed on a diet A and another group of 8 boys fed on a different diet B for a period of 6 months recorded the following increase in weight (lbs).

Diet A :	5	6	8	1	12	4	3	9	6	10
Diet B :	2	3	6	8	10	1	2	8	5	5

Test whether diets A and B differ significantly regarding their effect on increase in weight. (Given $t_{0.05}$ for 16 df = 2.12) (07 Marks)

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21EC42

Fourth Semester B.E. Degree Examination, June/July 2023 Digital Signal Processing

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Define DFT and IDFT and solve for the 4-point DFT of the sequence $x(n) = [0, 1, 2, 3]$ and also write program to find N-point DFT. (10 Marks)
- b. Explain the process of frequency domain sampling and reconstruction of discrete time signal. (10 Marks)

OR

- 2 a. Summarize multiplication of two DFT properties and also write a program to verify Parseval's theorem. (08 Marks)
- b. Make use of DFT and IDFT to compute circular convolution of the sequence $x(n) = [2, 3, 1, 1]$ and $h(n) = [1, 3, 5, 3]$. (08 Marks)
- c. The five samples of 8-point DFT $X(K)$ are given $X(0) = 0.5$, $X(1) = -j2$, $X(4) = X(6) = 0$, $X(5) = +j2$. Make use property to find remaining samples and also find $x(0)$. (04 Marks)

Module-2

- 3 a. Explain the computational arrangement of 8-point DFT using Radix-2 DIT-FFT algorithm. (12 Marks)
- b. Examine the o/p $y(n) = x(n) * h(n)$ if $x(n) = [1, 0]$ and $h(n) = [1, 3, 1]$ using Radix-2 DIT-FFT algorithm. (08 Marks)

OR

- 4 a. Examine the output of $y(n)$ of a filter where impulse response $h(n) = [3, 2, 1]$ input sequence $x(n) = [2, 1, +1, -2, 3, 5, 6, -7, 2, 0, 2, 1]$. Use 8-point circular convolution in your approach using overlap add method. (08 Marks)
- b. Solve for 8-point DFT of the sequence $x(n) = [1, 1, 1, 1]$ using Radix-2 DIT-FFT algorithm. (08 Marks)
- c. What is the speed improvement factor in calculating 128 point DFT of sequence using direct computation and FFT algorithm? (04 Marks)

Module-3

- 5 a. What are the different design techniques available for FIR filter? Explain the four window techniques for the designing of FIR filter. (08 Marks)
- b. A low pass filter is to be designed with the following desired frequency response.

$$H_d(e^{j\omega}) = \begin{cases} e^{j3\omega} & \text{for } |\omega| \leq 3\pi/4 \\ 0 & \text{for otherwise} \end{cases}$$

Determine $H(e^{j\omega})$ for $M = 7$ using Hamming window. (08 Marks)

- c. Determine the direct form realization of the following :

$$h(n) = \delta(n) + \frac{1}{2}\delta(n-1) - \frac{1}{4}\delta(n-2) + \frac{1}{2}\delta(n-3).$$

(04 Marks)

Important Note: 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and/or equations written eg. 42+8=50, will be treated as malpractice.

OR

- 6 a. Formulate the expression for symmetric FIR filter. (08 Marks)
 b. Write a program and design for FIR Lowpass filter using humming window for $M = 7$ and $\omega_c = 3\pi/4$. $H_d(\omega) = \begin{cases} e^{-j3\omega} & \text{for } |\omega| \leq \omega_c \\ 0 & \text{for otherwise} \end{cases}$. (08 Marks)
 c. Realize a linear phase FIR filter with following Impulse. Response $H(z) = 1 + \frac{3}{4}z^{-1} + \frac{17}{8}z^{-2} + \frac{3}{4}z^{-3} + z^{-4}$ in cascade form. (04 Marks)

Module-4

- 7 a. Given that $|H_a(\Omega)|^2 = \frac{1}{1+16\Omega^4}$. Determine the Analog filter system function $H_a(S)$. (08 Marks)
 b. Develop an analog filter with maximally flat response. In pass band with acceptable, attenuation of 2dB at 20rad/sec, the alteration in stop band more than that 10dB beyond 30rad/sec. (08 Marks)
 c. Write program to implementation of IIR Butterworth Lowpass filter. (04 Marks)

OR

- 8 a. Realization of direct form – I and direct form – II of IIR filter is given by $H(z) = \frac{3+4z}{z-1/2} - \frac{2}{z-1/4}$. (06 Marks)
 b. Make use of Bilinear transformation to obtain digital filter with $\omega_r = \pi/2$ and $\Omega = 4$ form given analog filter $H_a(s) = \frac{s+0.1}{(s+0.1)^2+16}$. (08 Marks)
 c. Write a program, Design and implementation of high pass filter to meet specification. (06 Marks)

Module-5

- 9 a. Describe the IEEE single precision floating point digital signal processors. (08 Marks)
 b. Describe the digital signal processes following units :
 i) Multiplier and accumulator (08 Marks)
 ii) Address generation unit. (08 Marks)
 c. Determine following number into Q_{15} notation.
 i) 0560123 ii) -0.160123. (04 Marks)

OR

- 10 a. Explain fixed point digital signal processors of TMS320 family. (08 Marks)
 b. Explain digital signal processor using Harvard architecture. (06 Marks)
 c. Write a program for linear convolution of two sequences. Using DSK6713 DSP processor. (06 Marks)

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21EC43

Fourth Semester B.E. Degree Examination, June/July 2023 Circuits and Controls

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Find the loop currents i_1 and i_2 for the circuit shown in Fig.Q1(a).

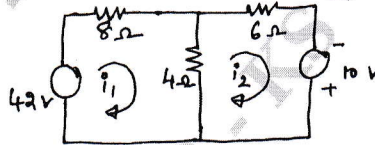


Fig.Q1(a)

(10 Marks)

- b. Explain the verification of superposition with suitable circuit. (10 Marks)

OR

- 2 a. State and explain Thevenin's theorem. (10 Marks)
b. Solve and obtain Norton's equivalent circuit for the circuit shown in Fig.Q2(b).

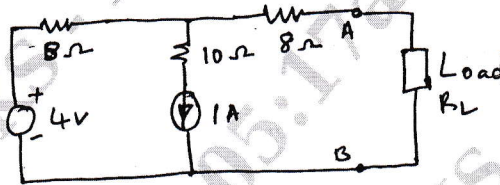


Fig.Q2(b)

(05 Marks)

- c. Explain briefly node analysis method by considering suitable two loop DC circuit. (05 Marks)

Module-2

- 3 a. Find Z-parameters for the network shown in Fig.Q3(a).

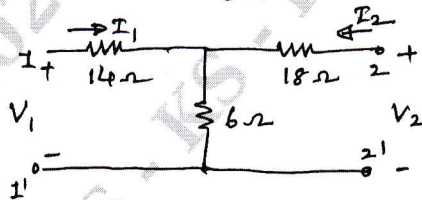
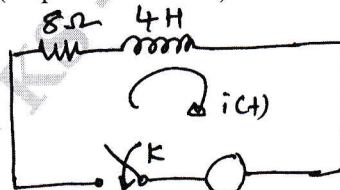


Fig.Q3(a)

(10 Marks)

- b. Find $i(t)$ for the circuit shown in Fig.Q3(b) using Laplace Transform when the switch K is closed and $V(t) = \delta(t)$ (Impulse function).



$V(t) = \delta(t)$, $\delta(t)$ is impulse function

Fig.Q3(b)

(10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

OR

- 4 a. Find Y-parameters for the network shown in Fig.Q4(a).

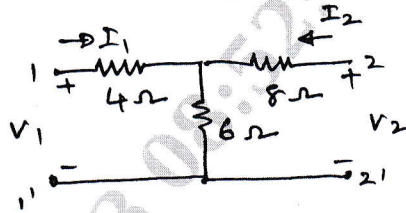


Fig.Q4(a)

(10 Marks)

- b. State and explain Initial Value Theorem. (10 Marks)

Module-3

- 5 a. Explain the different types of control system. (10 Marks)
 b. Find the transfer function for the RLC circuit shown. Assume Initial condition as zero. RLC circuit consists of voltage source of V_i as show in the Fig.Q5(b) and find $\frac{V_o(s)}{V_i(s)}$.

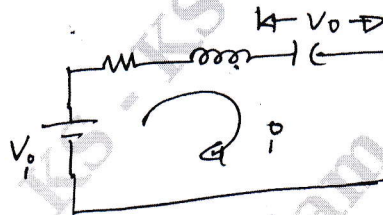


Fig.Q5(b)

(10 Marks)

OR

- 6 a. Find the transfer function $\frac{C}{R}$ for the block diagram as shown in Fig.Q6(a).

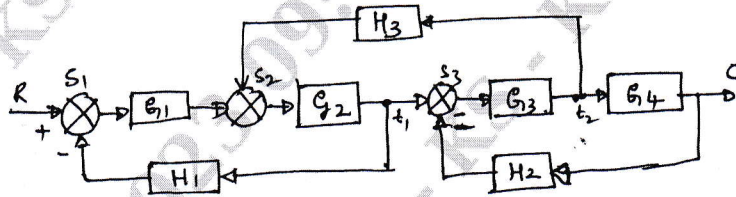


Fig.Q6(a)

(10 Marks)

- b. Find the transfer function $\left(\frac{C}{R}\right)$ for the signal flow graph shown in Fig.Q6(b).

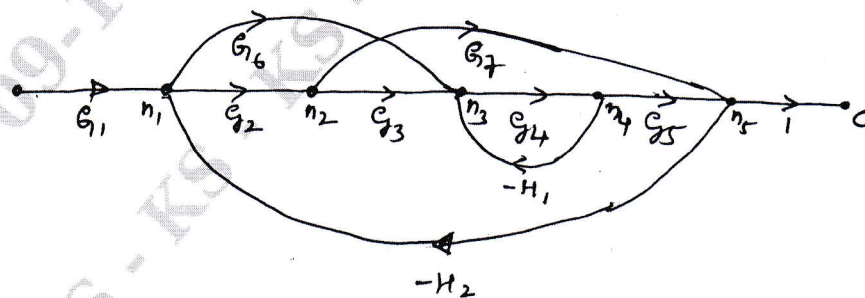


Fig.Q6(b)

(10 Marks)

Module-4

- 7 a. Find the output $c(t)$ for the first order system, where

$$G(s) = \frac{a}{s+a} \quad \text{and} \quad R(s) = \frac{1}{s} \quad (10 \text{ Marks})$$

- b. Explain the concept of stability and its stability necessary conditions. (10 Marks)

OR

- 8 a. Explain with a neat diagram of time response of second order system unit step function. Explain any five time specifications. (10 Marks)

- b. Find the range of K for system stability. Given

$$G(s) = \frac{K}{(s+2)(s+4)(s^2+6s+25)} \quad \text{and} \quad H(s) = 1. \quad (10 \text{ Marks})$$

Module-5

- 9 a. Explain any four root locus plot rules. (10 Marks)

- b. Find the state model of the given electrical system as shown in Fig.Q9(b).

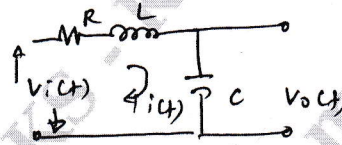


Fig.Q9(b)

Take state variables $X_1(t) = i(t)$ and $X_2(t) = V_o(t)$. (10 Marks)

OR

- 10 a. Find the state transition matrix for $A = \begin{bmatrix} 0 & -1 \\ 2 & -3 \end{bmatrix}$ (10 Marks)

- b. Find the T. F (Transfer function) for the magnitude plot as shown in Fig.Q10(b).

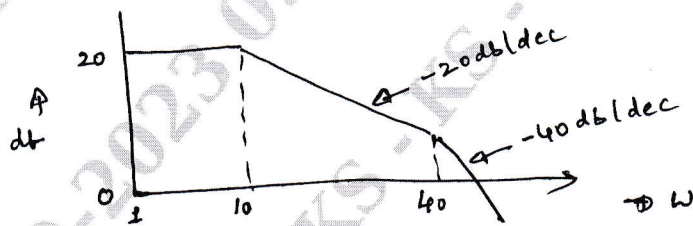


Fig.Q10(b)

(10 Marks)

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21EC44

Fourth Semester B.E. Degree Examination, June/July 2023 Communication Theory

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Explain the time domain and frequency domain analysis of AM wave for a single modulating signal with neat diagrams and necessary equations. (10 Marks)
- b. Explain the operation of envelope detector with neat diagrams and waveforms. Also mention the significance of RC-time constant. (05 Marks)
- c. An audio frequency signal $10\sin 2\pi(500)t$ is used to amplitude modulate a carrier of $50\sin 2\pi(10^5)t$. Assume modulation index = 0.2. Determine sideband frequencies, amplitude of each side band, bandwidth required, Efficiency of AM wave. (05 Marks)

OR

- 2 a. With relevant diagrams, explain the operation of the quadrature carrier multiplexing transmitter and receiver schemes. (07 Marks)
- b. Explain the concept of FDM with neat block diagram. (06 Marks)
- c. A carrier wave $4\sin(2\pi * 500 * 10^3 t)$ volts is amplitude modulated by an audio wave $[0.2\sin 3(2\pi * 500t) + 0.1\sin 5(2\pi * 500t)]$ volts. Determine upper and lower sidebands and sketch the complete spectrum of the modulated wave. Estimate the total power in the sideband ($R = 1 \Omega$). (07 Marks)

Module-2

- 3 a. Define the following :
- (i) Instantaneous frequency
 - (ii) Maximum frequency deviation
 - (iii) Modulation index. (06 Marks)
- b. Explain the generation of narrow band FM wave with neat block diagram, necessary equations and phasor diagrams. (08 Marks)
- c. When a 50.4 MHz carrier is frequency modulated by a sinusoidal AF modulating signal, the highest frequency reached is 50.405 MHz. Calculate
- (i) The frequency deviation produced.
 - (ii) Carrier swing of the wave.
 - (iii) Lowest frequency reached. (06 Marks)

OR

- 4 a. Explain the demodulation of FM signal using the nonlinear and linear model of PLL with neat diagrams and equations. (10 Marks)
- b. Explain the FM stereo multiplexer and demultiplexer operation with neat diagrams. (08 Marks)
- c. An FM wave is defined by $s(t) = 10\cos[2 + \sin 6\pi t]$. Find the instantaneous frequency of $s(t)$. (02 Marks)

Module-3

- 5 a. Write short notes on :
- Thermal noise
 - Shot noise.
 - White noise.
- (06 Marks)
- b. Derive the noise equivalent bandwidth equation $B = \frac{1}{4CR}$ Hz for low pass filter. (08 Marks)
- c. Three $5\text{ K}\Omega$ resistors are connected in series. For room temperature ($KT = 4 \times 10^{-21}$) and an effective noise bandwidth of 1 MHz, determine
- The noise voltage appearing across each resistor.
 - The noise voltage appearing across the series combination.
 - What is the rms noise voltage which appears across same three resistors connected in parallel under the same conditions? (06 Marks)

OR

- 6 a. Show the figure of merit for DSBSC system is unity. (08 Marks)
- b. Obtain the expression for FOM of AM receivers using envelope detector. (08 Marks)
- c. An AM receiver operating with a sinusoidal wave of 80% modulation has an output signal to noise ratio of 30 dB. Calculate the corresponding channel S/N ratio. (04 Marks)

Module-4

- 7 a. What are the advantages of digitizing the analog sources? (06 Marks)
- b. State and explain the sampling theorem for the band limited signal. Also explain the under sampling, over sampling and Nyquist rate with neat diagram. (14 Marks)

OR

- 8 a. Explain the pulse amplitude modulation with neat diagram and equations. (08 Marks)
- b. Explain the Time Division Multiplexing (TDM) with neat block diagram. (08 Marks)
- c. An analog signal is expressed by the equation, $x(t) = \frac{1}{2\pi} \cos(4000\pi t) \cos(1000\pi t)$. Calculate the nyquist rate and nyquist interval for this signal. (04 Marks)

Module-5

- 9 a. Explain the construction and regeneration of PCM signal. (10 Marks)
- b. Explain the different line codes. To transmit a bit sequence 01101001 draw the resulting waveforms using,
- Unipolar NRZ
 - Polar NRZ.
 - Unipolar RZ
 - Bipolar RZ
 - Manchester
- (10 Marks)

OR

- 10 a. Explain the concept and operation of delta modulation in detail. (10 Marks)
- b. Explain quantization process with neat diagrams. Also explain the types of quantizer with neat diagrams. (06 Marks)
- c. Write a short note on Vocoder. (04 Marks)

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21BE45

Fourth Semester B.E./B.Tech. Degree Examination, June/July 2023 Biology for Engineers

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.	What is a biomolecule? Explain the classification of biomolecule.	07	L2	CO1
	b.	Explain the role of DNA vaccine for rabies and RNA vaccine for COVID-19.	07	L2	CO1
	c.	Write a short note on cellulose based bio-filters.	06	L2	CO1
OR					
Q.2	a.	Explain the DNA finger printing in forensic applications.	07	L2	CO1
	b.	Explain the role of lipids and its application in cleaning agents.	07	L2	CO1
	c.	Write a short note on biosensors and bioplastics.	06	L2	CO1
Module – 2					
Q.3	a.	Explain brain as a CPU system.	07	L3	CO1
	b.	Explain eye as a camera system.	07	L3	CO1
	c.	Write a short note on cardiac pacemaker.	06	L2	CO1
OR					
Q.4	a.	Explain the robotic arms for prosthetics.	07	L3	CO1
	b.	Explain heart as a pump system.	07	L3	CO1
	c.	Write a short note on engineering solutions for Parkinson's disease.	06	L2	CO1
Module – 3					
Q.5	a.	Explain the lungs as a purification system.	07	L3	CO2
	b.	Explain the kidney as filtration system.	07	L3	CO2
	c.	Write a short note on spirometry and ventilator.	06	L2	CO2
OR					
Q.6	a.	Explain muscular and skeletal system as scaffolds.	07	L3	CO2
	b.	Explain bio-engineering solutions for muscular dystrophy and osteoporosis.	07	L3	CO2
	c.	Write a short note on Chronic Obstructive Pulmonary Disease (COPD).	06	L2	CO2
Module – 4					
Q.7	a.	Explain the terms Echolocation Ultrasonography and Sonars.	07	L3	CO3
	b.	Explain the process of Photosynthesis and Photovoltaic cells.	07	L3	CO3
	c.	Write a short note on Bionic leaf, GPS, Bird flight and aircraft.	06	L2	CO3
OR					
Q.8	a.	Explain the terms Lotus leaf effect, Plant Burrs and Super hydrophobic and self-cleaning surfaces.	07	L3	CO3
	b.	Explain the terms Spark skin and Swimsuits, Bullet train using biological concepts.	07	L3	CO3
	c.	Write a short note on Hemoglobin – Based Oxygen Carriers (HBOC's) and Perfluorocarbons (PFC).	06	L2	CO3
Module – 5					
Q.9	a.	Explain the DNA Organic and Biocomputing.	07	L3	CO4
	b.	Explain the Bioimaging and Artificial intelligence for Disease Diagnosis.	07	L3	CO4
	c.	Write a short note on Self healing Bioconcrete.	06	L2	CO4
OR					
Q.10	a.	Explain the importance of Bioimaging.	07	L3	CO4
	b.	Explain Bioremediation and Bio-Mining via microbial surface adsorption.	07	L3	CO4
	c.	Write a short note on Nanomedicines and Bioleaching.	06	L2	CO4

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Question Paper Version : A

Fourth Semester B.E./B.Tech. Degree Examination, June/July 2023
Universal Human Values

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.

1. Harmony should be maintained in

a) Between body and life	b) Between self and society
c) Between life and environment	d) All of these
2. Basic human aspirations are

a) Continuous Happiness	b) Prosperity
c) Both a and b	d) None of these
3. Purpose of value education is

a) Foster universal core values	b) Make the syllabus easy
c) Develop values in individuals	d) All of these
4. Knowing means having the

a) Self exploration	b) Self evaluation
c) Right understanding	d) Having knowledge of all
5. Happiness means

a) To be in a state of harmony	b) Fulfillment of desired expectations from others
c) Fulfillment of desired feelings from others	d) Fulfillment of desired sensations from body
6. _____ is called foundation value

a) Respect	b) Affection	c) Love	d) Trust
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7. The Human goal at the level of nature is

a) Prosperity	b) Fearlessness
c) Co-existence	d) Right understanding
8. The outcome of justice is _____

a) Right understanding	b) Prosperity
c) Trust and Fearlessness	d) Coexistence with nature

9. Society means
 a) Family
 c) Few individuals
 b) All human beings
 d) None of these
10. Feeling for those who have made effort for excellence is _____
 a) Excellence
 c) Glory
 b) Reverence
 d) None of these
11. An individual people aspiring for the universal human order will be
 a) More responsible socially and ecologically
 c) More powerful
 b) More rich
 d) More well travel
12. A harmonious world is created by values at 4 levels there are
 a) Home, Family, Society, Universe
 c) School, Home, Office, Temple
 b) Individual, Family, Society, Universe
 d) None of these
13. "What is the innateness of Tulsi-Plant (or any plant)?
 a) Existence + Growth
 c) Nurture/Worsen
 b) Cruelty/non-cruelty
 d) Will to live in self
14. As individual people anticipates for the universal human order may be
 a) More rich
 c) More responsible socially and ecologically
 b) More Powerful
 d) More well-travelled
15. Understanding of human values leads to the practice of
 a) Responsibilities
 c) Profession
 b) Ethics
 d) Professional ethics
16. "Seeing the self by the self" means
 a) The consciousness observing the consciousness
 b) The consciousness observing the material
 c) The consciousness observing the co-existence
 d) None of these
17. Education-Right living leads to _____
 a) Right understanding
 c) Doubts
 b) Confusions
 d) None of these
18. There are _____ dimensions of living
 a) Six (6)
 b) Four (4)
 c) Nine (9)
 d) Five (5)
19. The second order of nature is _____
 a) Material order
 c) Animal order
 b) Bio order
 d) Human order
20. The innateness of material order is _____
 a) Existence
 c) Growth
 b) Cruelty/Non-cruelty
 d) Nurture/Worsen
21. Comprehensive human goal at the level of individual
 a) Prosperity
 c) Co-existence
 b) Fearlessness
 d) Right understanding
22. The fourth order of nature is
 a) Material
 b) Bio order
 c) Animal order
 d) Human order

23. _____ is the basic unit of human society.
 a) Group b) Individual c) Nature d) Society
24. Which of the following is a positive value?
 a) Self respect b) Anger
 c) Fear d) Narrow mindedness
25. What is the nature of self?
 a) Conscious b) Physio-Chemical
 c) Biochemical d) Semi-Conscious
26. Self exploration is seeing beyond
 a) Universe b) House c) Box d) Your senses
27. Human to human interaction is called as
 a) Work b) Behaviour c) System d) None of these
28. "All are our own, all are interconnected, interdependent" means.
 a) Oneness b) Worship c) Ease d) None of these
29. Prosperity means
 a) Feeling of having more than required physical facility
 b) Feeling of having less physical facility
 c) Feeling of having more physical facility
 d) Deprived of physical facility
30. Realization is the activity of
 a) Self b) Body
 c) Both self and Body d) None of these
31. Who is responsible for happiness and unhappiness?
 a) Self b) Body
 c) Outside situation d) Society
32. Value education helps to
 a) Removes our contradictions
 b) Remove our confusions
 c) Bring harmony at all levels of human living
 d) All of these
33. Undivided society is ensured by
 a) Right understanding b) Physical facilities
 c) Relationship with right understanding d) None of these
34. The third order of nature is _____
 a) Material order b) Bio order
 c) Animal order d) Human order
35. Which is the complete value?
 a) Love b) Respect c) Trust d) Care
36. Body is a _____ unit while the self is a _____ unit.
 a) Material, Consciousness b) Consciousness, Material
 c) Material, Material d) Consciousness, Consciousness

37. Society is an extension of _____
 a) Human Being ~~b) Family~~ c) Nature d) Existence
38. In value education Sanyam mans _____
 a) Self-exploration b) Self-evolution
~~c) Self-regulation~~ d) None of these
39. To fulfill human aspirations _____ are necessary
~~a) Both values and skills~~ b) Values
 c) Skills d) None of these
40. The innateness of Bio order is _____
 a) Existence b) Cruelty / Non-cruelty
~~c) Growth~~ ~~d) Nurture / Worsen~~
41. The feelings for those who have made effort for my excellence is _____
 a) Excellence b) Reverence ~~c) Gratitude~~ d) Glory
42. There are _____ comprehensive human goals
 a) Eight (8) b) Six (6) c) Four (4) ~~d) Nine (9)~~
43. The first order of nature is _____
~~a) Material order~~ b) Bio order
 c) Animal order d) Human order
44. Developing ethical competence in the profession is the only effective way to ensure
 a) Responsibilities b) Ethics
 c) Profession ~~d) Professional ethics~~
45. Ensuring justice in relationship, on the basis of values leads to _____ in society.
 a) Fearlessness b) Trust
~~c) Fearlessness and Trust~~ d) None of these
46. Human goal → match correctly
 A Right understanding 1 Individual
 B Prosperity 2 Family
 C Fearlessness (Trust) 3 Society
 D Co-existence 4 Nature/Existence
 a) 1 - D, 2 - A, 3 - B, 4 - C b) 1 - B, 2 - C, 3 - D, 4 - A
~~c) 1 - A, 2 - B, 3 - C, D - 4~~ d) 1 - C, 2 - D, 3 - A, 4 - B
47. The human goal at the level of family is
~~a) Prosperity~~ b) Fearlessness
 c) Co-existence d) Right understanding
48. Sah-astitua means _____
~~a) Co-existence~~ b) Co-operation
 c) Co-option d) Corporate identity
49. Acceptance of excellence in others is called
~~a) Reverence~~ b) Guidance
 c) Glory d) Gratitude
50. Each human being is co-existence of
 a) Spirit and Sanyam b) Health and prosperity
~~c) Self and Body~~ d) Mind and Soul
