

CBCS SCHEME

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21MATCS41

Fourth Semester B.E. Degree Examination, June/July 2024 Mathematical Foundations for Computing, Probability and Statistics

Time: 3 hrs.

Max. Marks: 100

**Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. Provide data table book.**

Module-1

- 1 a. Define tautology. Show that the compound proposition $[p \rightarrow (q \rightarrow r)] \rightarrow [(p \rightarrow q) \rightarrow (p \rightarrow r)]$ is a tautology for any propositions p, q, r . (06 Marks)
- b. Prove that (i) $p \vee [p \wedge (p \vee q)] \equiv p$ (ii) $[(-p \vee \neg q) \rightarrow (p \wedge q \wedge r)] \equiv p \wedge q$ using the laws of logic. (07 Marks)
- c. Prove that for all integers k and ℓ is k and ℓ are both odd, then $k + \ell$ is even and $k\ell$ is odd. (07 Marks)

OR

- 2 a. Define: (i) Universal quantifiers (ii) Existential quantifiers, with an example. (06 Marks)
- b. Test the validity of the following argument.
I will become famous or I will not become a musician.
I will become a musician.
Therefore I will become famous. (07 Marks)
- c. Suppose the universe consist of integers. Consider the following open statements:
 $p(x) : x \leq 3, \quad q(x) : x + 1$ is odd $r(x) : x > 0$.
Write down the truth values of:
(i) $p(2)$ (ii) $\vee q(4)$ (iii) $p(-1) \wedge q(1)$ (iv) $\sim p(3) \vee r(0)$
(v) $p(0) \rightarrow q(0)$ (vi) $p(1) \leftrightarrow \sim q(2)$ (vii) $p(4) \vee (q(1) \wedge r(2))$ (07 Marks)

Module-2

- 3 a. Let A and B be finite sets with $|A| = m$ and $|B| = n$. Find how many one to one functions are possible from A to B . If there are 60 1 – 1 functions from A to B and $|A| = 3$, what is $|B|$? (06 Marks)
- b. Let $A = \{1, 2, 3, 4, 6, 12\}$ and R be a relation on A defined by aRb if “ a is a multiple of b ”. Write down the relation R , relation matrix $M(R)$ and draw its digraph. (07 Marks)
- c. Define: (i) Null graph (ii) Bipartite graph (iii) Euler circuit. Give an example for each. (07 Marks)

OR

- 4 a. Draw the Hasse diagram representing the positive divisors of 48. (06 Marks)
- b. Consider the functions f and g defined by $f(x) = x^3$ and $g(x) = x^2 + 1 \forall x \in \mathbb{R}$. Find $g \circ f, f \circ g, f^2$. (07 Marks)
- c. Define isomorphism of graphs. Prove that 2 graphs below are isomorphic.

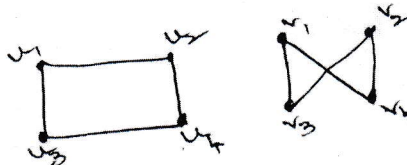


Fig.Q.4(c)
1 of 3

(07 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 writer, eg. 42+8 = 50, will be treated as malpractice.

Module-3

- 5 a. Find the correlation coefficient between the speed and the stopping distance and the equations of regression lines.

| | | | | | | |
|----------------------|------|------|------|------|------|------|
| Speed, x | 16 | 24 | 32 | 40 | 48 | 56 |
| Stopping distance, y | 0.39 | 0.75 | 1.23 | 1.91 | 2.77 | 3.81 |

(06 Marks)

- b. Fit a best curve of the form $y = ax^b$ for the following data:

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

(07 Marks)

- c. Fit a straight line by the method of least squares.

| | | | | | |
|---|----|----|---|---|---|
| x | 1 | 2 | 3 | 4 | 5 |
| y | 14 | 13 | 9 | 5 | 2 |

(07 Marks)

OR

- 6 a. The following are the percentage of marks in 2 subjects of 9 students. Find the rank correlation coefficient.

| | | | | | | | | | |
|---|----|----|----|----|----|----|----|----|----|
| x | 38 | 50 | 42 | 61 | 43 | 55 | 67 | 46 | 72 |
| y | 41 | 64 | 70 | 75 | 44 | 55 | 62 | 56 | 60 |

(06 Marks)

- b. Fit a 2nd degree parabola $y = a + bx + cx^2$ for the data:

| | | | | | | |
|---|---|---|---|----|----|----|
| x | 0 | 1 | 2 | 3 | 4 | 5 |
| y | 1 | 3 | 7 | 13 | 21 | 31 |

(07 Marks)

- c. Given that $8x - 10y + 66 = 0$ and $40x - 18y = 214$ are the regression equations. Find the means of x and y and correlation coefficient. Find σ_y if $\sigma_x = 3$.

(07 Marks)

Module-4

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

| | | | | | | |
|------|-----|----|-----|----|-----|---|
| x | -2 | -1 | 0 | 1 | 2 | 3 |
| P(x) | 0.1 | K | 0.2 | 2K | 0.3 | K |

Find: (i) K (ii) $P(X < 1)$ (iii) $P(X > -1)$

(06 Marks)

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

(07 Marks)

- c. The mean weight of 500 students in a school is 50 kgs and the standard deviation is 6 kgs. Assuming that the weights are normally distributed, find the expected number of students weighing (i) between 40 and 50 kg (ii) more than 60 kg. Given that $A(1.67) = 0.4525$.

(07 Marks)

OR

- 8 a. Find the constant K such that

$$f(x) = \begin{cases} Kx^2, & 0 \leq x \leq 3 \\ 0, & \text{elsewhere} \end{cases}$$

is a probability density function. Find the mean.

(06 Marks)

- b. When an honest coin is tossed 4 times, find the probability of getting:

(i) exactly one head (ii) atmost 3 heads (iii) at least 2 heads

(07 Marks)

- c. The probability that an individual suffers a bad reaction from a certain injection is 0.001. Using Poisson distribution, find the probability that out of 2000 individuals:

(i) exactly 3 (ii) more than 2 will suffer a bad reaction.

(07 Marks)

Module-5

- 9 a. X and Y are independent random variables such that X takes 1, 5 with probabilities $\frac{1}{2}, \frac{1}{2}$ respectively. Y takes -4, 2, 7 with probabilities $\frac{3}{8}, \frac{3}{8}$ and $\frac{1}{4}$ respectively. Find the joint probability distribution of X and Y. Find Cov (X, Y). (06 Marks)
- b. Find the student 't' for the following variables values in a sample of eight -4, -2, -2, 0, 2, 2, 3, 3 taking the mean of the universe to be zero. (07 Marks)
- c. The following are the I.Q's of a randomly chosen sample of 10 boys: 70, 120, 110, 101, 88, 83, 95, 98, 107, 100. Does this data support the hypothesis that the population mean of I.Q's is 100 at 5% level of significance? (07 Marks)

OR

- 10 a. Explain the terms:
 (i) Null hypothesis
 (ii) Alternate hypothesis
 (iii) Levels of significance
 (iv) Type 1 and Type 2 errors (06 Marks)
- b. A die is thrown 60 times and the frequency distribution for the number appearing on the face x is given by the following table:

| | | | | | | |
|-----------|----|---|---|---|----|----|
| x | 1 | 2 | 3 | 4 | 5 | 6 |
| Frequency | 15 | 6 | 4 | 7 | 11 | 17 |

Test the hypothesis that the die is unbiased. Use Chisquare test at 5% level of significantly. (07 Marks)

- c. The nine items of a sample have the following values 45, 47, 50, 52, 48, 47, 49, 53, 51. Does the mean of these differ significantly from the assumed mean of 47.5 ($t_{0.05} = 2.31$). (07 Marks)

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21CS42

Fourth Semester B.E. Degree Examination, June/July 2024 Design and Analysis of Algorithms

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Define algorithm. Explain the following asymptotic notations:
i) Big On ii) Big Omega iii) Big Theta (08 Marks)
- b. Design a non-recursive algorithm to find maximum element in an array of n elements. Give the Mathematical Analysis. (08 Marks)
- c. Define time and space complexity. (04 Marks)

OR

- 2 a. Design an algorithm for performing sequential search and compute Best, Worst and Average case efficiency. (08 Marks)
- b. Write an algorithm to find the uniqueness of element an array and give mathematical analysis of this non recursive algorithm with steps. (08 Marks)
- c. List and explain basic asymptotic efficiency classes. (04 Marks)

Module-2

- 3 a. Illustrate the tracing of the Quick Sort algorithm for the following set of numbers
5, 3, 1, 9, 8, 2, 4, 7 (10 Marks)
- b. Apply the topological sorting algorithm for the following graph shown in Fig.Q3(b). Find the topological sequence. (10 Marks)

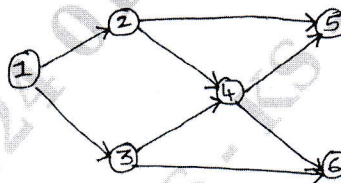


Fig.Q3(b)

(10 Marks)

OR

- 4 a. Write a C++/JAVA program for Merge Sort. Analyze its efficiency and apply the same to sort the following numbers : 4, 9, 0, -1, 6, 8, 9, 2, 3, 12. (10 Marks)
- b. Write a recursive algorithm for Binary Search and also bring out its efficiency. (10 Marks)

Module-3

- 5 a. Apply greedy method to obtain an optimal solution to the knapsack problem given $M = 60$.
 $W = \{5, 10, 20, 30, 40\}$
 $P = \{30, 20, 100, 90, 160\}$
Find total profit earned. (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.

- b. Apply single source shortest path algorithm to the following graph Fig.Q5(b). Assume vertex 'a' as source.

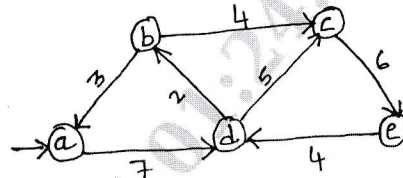


Fig.Q5(b)

(10 Marks)

OR

- 6 a. A message consisting of the character given in the table below has to be transmitted network in a secured manner.

| | | | | |
|-------------|-----|-----|-----|-----|
| Character | A | M | R | - |
| Probability | 0.4 | 0.2 | 0.3 | 0.1 |

- i) Construct Huffman tree
 - ii) Device Huffman codes for the given characters
 - iii) Encode the text : RAMA RAMAR
 - iv) Decode the text : 1000101
- b. Find the optimal solution using greedy for the job sequencing with dead line problem with following values:

| | | | | | |
|-----------|----------------|----------------|----------------|----------------|----------------|
| Job | J ₁ | J ₂ | J ₃ | J ₄ | J ₅ |
| Profit | 10 | 3 | 33 | 11 | 40 |
| Dead line | 3 | 1 | 1 | 2 | 2 |

(10 Marks)

Module-4

- 7 a. Define a Multistage Graph. Give an example. Explain the technique of finding the minimum cost path in a multistage graph. (10 Marks)
- b. Write Floyd's Algorithm and find all pair Shortest path for the given graph. [Refer Fig.Q7(b)]

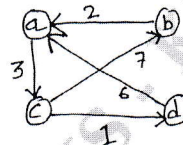


Fig.Q7(b)

(10 Marks)

OR

- 8 a. Apply the Dynamic Programming to solve travelling sales person problem for the following graph shown in Fig.Q8(a).

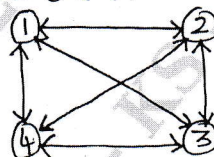


Fig.Q8(a)

| | | | | |
|---|---|----|----|----|
| C | 1 | 2 | 3 | 4 |
| 1 | 0 | 10 | 15 | 20 |
| 2 | 5 | 0 | 9 | 10 |
| 3 | 6 | 13 | 0 | 12 |
| 4 | 8 | 8 | 9 | 0 |

(10 Marks)

- b. Write Horspool Algorithm for string matching. Trace the algorithm to find the pattern "ELECTION" in the text "EDUCATION ONLY HELPS IN SELECTION."

(10 Marks)

Module-5

- 9 a. Construct the state-space tree for sum of subset problem given the following data:
 $W = \{3, 5, 6, 7\}$ and $m = 15$. (10 Marks)
- b. Write C++ / JAVA program to find all Hamiltonian cycles in a connected undirected Graph G of n vertices using backtracking principle. (10 Marks)

OR

- 10 a. Explain Branch and Bound concept. Apply Branch and Bound to the following instance of assignment problem.

| | Job1 | Job2 | Job3 | Job4 |
|----------|------|------|------|------|
| Person A | 9 | 2 | 7 | 8 |
| Person B | 6 | 4 | 3 | 7 |
| Person C | 5 | 8 | 1 | 8 |
| Person D | 7 | 6 | 9 | 4 |

(10 Marks)

- b. Explain the following concepts :
- Graph coloring problem with an example
 - NP Complete Problem
 - NP-Hard Class Problem

(10 Marks)

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21CS43

Fourth Semester B.E. Degree Examination, June/July 2024 Microcontroller and Embedded System

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. What are the RISC and CISC machine? Explain the major design rules that are implemented with RISC machine. (08 Marks)
- b. Briefly explain the various fields in current program status register. (06 Marks)
- c. List the differences between microcontroller and microprocessor. (06 Marks)

OR

- 2 a. Explain ARM based embedded system hardware components. (08 Marks)
- b. What is pipeline in ARM? Explain the pipeline stages of ARM7 and ARM9. (06 Marks)
- c. Describe the various modes of operation of ARM processor. (06 Marks)

Module-2

- 3 a. Explain the barrel shifter operation in ARM processor with diagram. Illustrate with example for logical left shift operation. (08 Marks)
- b. Explain the following instructions with syntax and example:
(i) MOV (ii) BIC (iii) RSB (06 Marks)
- c. Explain with example forward and backward branch in ARM processor. (06 Marks)

OR

- 4 a. Explain the syntax of LDRH and STRH instructions. Write an ALP to add an array of 16 bit numbers and Store the result in RAM. (08 Marks)
- b. List the addressing methods used for stack operations of ARM processor. Explain STMFD instruction of ARM processor. (06 Marks)
- c. Write a short note on :
(i) C-looping structure (ii) Pointer Aliasing with respect to ARM processor. (06 Marks)

Module-3

- 5 a. What are in-line functions and inline assembly? Explain with example. (08 Marks)
- b. Explain the allocation of variables to register number with respect to ARM processor. (06 Marks)
- c. Write a short note on Profiling and Cycle counting. (06 Marks)

OR

- 6 a. How to convert C-functions to an assembly function? Explain by considering a simple C program that prints the square of the integer from 0 to 9. (08 Marks)
- b. Explain in detail the instruction scheduling with respect to ARM processor. (06 Marks)
- c. Write a short note on unaligned data and Endianness with respect to ARM. (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.

Module-4

- 7 a. What is an embedded system? Explain any four purposes of embedded system with examples. (08 Marks)
- b. Explain any two on board serial communication interfaces in brief. (06 Marks)
- c. What are the different types of memories used for program storage in an embedded system design? (06 Marks)

OR

- 8 a. Explain the role of Real Time Clock (RTC) and Watch Dog Timer circuit in embedded system. (08 Marks)
- b. Explain the classification of embedded system with example. (06 Marks)
- c. Explain the role of Application Specific Integrated Circuits (ASICs) on embedded system design. (06 Marks)

Module-5

- 9 a. Explain in detail the structure, memory organization and state transition of the process. (08 Marks)
- b. What is deadlock? Briefly explain the different conditions which favours a deadlock situation in an operation system. (06 Marks)
- c. Explain hard Real Time and Soft Real Time operating system with examples. (06 Marks)

OR

- 10 a. List the various hardware debugging tools used in embedded product development and explain Boundary Scanning approach. (08 Marks)
- b. Briefly explain the role of Integrated Development Environment (IDE) for embedded software development. (06 Marks)
- c. Write a short note on message passing. (06 Marks)

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21CS44

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

Operating Systems

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- Compare multiprogramming and Time sharing systems. (06 Marks)
 - Illustrate with a diagram the Dual mode operation of an operating system. (08 Marks)
 - Point out and explain briefly the various services provided by the operating systems. (06 Marks)

OR

- What are system calls? Explain types of system calls. (06 Marks)
 - What are microkernels? Point out its benefits. (06 Marks)
 - Define Process. What are its states? Explain process state diagram. (08 Marks)

Module-2

- What is multithreading? Explain different types of multithreading models. (08 Marks)
 - For the following example calculate average waiting time and average turnaround time for the following algorithms.
 - FCFS
 - Preemptive SJF
 - Round Robin (Time quantum = 1 ms)

| Process | Arrival time | Burst time |
|----------------|--------------|------------|
| P ₁ | 0 | 8 |
| P ₂ | 1 | 4 |
| P ₃ | 2 | 9 |
| P ₄ | 3 | 5 |

(12 Marks)

OR

- Explain Critical Section Problem. What are its requirements? (08 Marks)
 - Explain Dining Philosophers problem. Illustrate the solution to Dining philosopher problem using semaphores. (12 Marks)

Module-3

- What is Deadlock? What are its necessary conditions for the occurrence of deadlock? (08 Marks)
 - Consider the following snapshot of a system.

| Process | Allocation | | | | MAX | | | | Available | | | |
|----------------|------------|---|---|---|-----|---|---|---|-----------|---|---|---|
| | A | B | C | D | A | B | C | D | A | B | C | D |
| P ₀ | 0 | 0 | 1 | 2 | 0 | 0 | 1 | 2 | 1 | 5 | 2 | 0 |
| P ₁ | 1 | 0 | 0 | 0 | 1 | 7 | 5 | 0 | | | | |
| P ₂ | 1 | 3 | 5 | 4 | 2 | 3 | 5 | 6 | | | | |
| P ₃ | 0 | 6 | 3 | 2 | 0 | 6 | 5 | 2 | | | | |
| P ₄ | 0 | 0 | 1 | 4 | 0 | 6 | 5 | 6 | | | | |

Answer the following question using the Bankers Algorithm.

- What is the content of Need matrix?
- Is the system is in Safe state?
- If the request from process P₁ arrives for (0, 4, 2, 0) can the request be granted immediately? (12 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
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OR

- 6 a. Given memory partitions of 100K, 500K, 200K, 300K and 600K (in order) how would each of the first fit, best fit and worst fit algorithms place processes of 212K, 417K, 112K and 426K (in order) which algorithm makes the most efficient use of memory. (06 Marks)
- b. What is paging? With a neat diagram explain Paging hardware. (08 Marks)
- c. Differentiate between Segmentation and Paging. (06 Marks)

Module-4

- 7 a. What do you mean by Page Replacement? Explain the working of page replacement algorithm with a neat block diagram. (08 Marks)
- b. Consider the following page-reference string
2, 3, 2, 1, 5, 2, 4, 5, 3, 2, 5, 2
How many page faults occur in the following replacement algorithms, assuming three frames:
i) FIFO ii) LRU iii) Optimal (12 Marks)

OR

- 8 a. Describe the various file allocation methods. Also point out their advantages and disadvantages. (10 Marks)
- b. Explain the various Free Space Management techniques. (10 Marks)

Module-5

- 9 a. What is disk scheduling? Explain different types of Scheduling algorithms. (10 Marks)
- b. What is access matrix? How the access matrix is implemented, point out the advantages and disadvantages of different methods of implementation of access matrix. (10 Marks)

OR

- 10 a. Explain the different components of a Linux system. (10 Marks)
- b. Discuss the Linux file system. (10 Marks)

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21BE45

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

Biology for Engineers

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 classification of carbohydrates with examples. (06 Marks)
- b. Explain the working of DNA finger printing for forensic applications. (06 Marks)
- c. Discuss the benefits and uses of plant based proteins as alternatives to animal based proteins. (08 Marks)

OR

- 2 a. Discuss the key features of RNA vaccine for COVID-19 with examples. (06 Marks)
- b. Elucidate the process of obtaining bio-diesel from lipids. Discuss any four advantages of bio-diesel? (08 Marks)
- c. Explain the role of glucose-oxidase enzyme in biosensors and lignolytic enzyme in bio-bleaching. (06 Marks)

Module-2

- 3 a. Compare and list the salient features of human brain as CPU of a computer and discuss their architectures using suitable diagrams. (08 Marks)
- b. Explain the term cataract giving reasons for its cause and symptoms? What is the solution to overcome the same? List any two lens materials in use? (04 Marks)
- c. Using relevant diagram describe the electrical signaling of the human heart and it's monitoring in the ECG trace. (08 Marks)

OR

- 4 a. Compare and explain the similarities between the working of human eye with that of a camera, using suitable diagrams. (08 Marks)
- b. Explain the term electro encephalography (EEG)? Discuss any four engineering solutions for Parkinson's disease. (07 Marks)
- c. Discuss the design features of stent. (05 Marks)

Module-3

- 5 a. Using the architecture diagram, explain the mechanism of purification of air in lungs and the exchange of O₂, CO₂ gases. (08 Marks)
- b. Discuss the causes, symptoms and treatment options for chronic kidney disease (CKD). (06 Marks)
- c. Using the architecture diagram, explain the working of skeletal muscle. (06 Marks)

OR

- 6 a. Describe the term Chronic Obstructive Pulmonary Disease (COPD). Give reasons for its cause and the possible medical treatment options. (06 Marks)
- b. With neat architecture diagram, explain the mechanism of filtration of blood in kidneys and the formation of urine. (08 Marks)
- c. Discuss any three bioengineering solutions for muscular dystrophy and osteoporosis. (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.

Module-4

- 7 a. Describe the working principle of ultrasonography. List any four uses of ultrasonography. (08 Marks)
- b. Discuss any four technological applications of bionic leaf. (04 Marks)
- c. Compare and discuss the bio mimicking facts about birds fly with that of aircraft technology. (08 Marks)

OR

- 8 a. Explain the lotus leaf effect and discuss any two applications of super hydrophobic and self cleaning surfaces. (08 Marks)
- b. Discuss any five applications of Velcro technology. (05 Marks)
- c. Discuss the basic requirements for human blood substitutes. Discuss any two advantages and haemoglobin based oxygen carries and perflourocarbons as human blood substitutes. (07 Marks)

Module-5

- 9 a. Describe the working of any one bioprinting technique using suitable diagram. Make a list of bioprinting materials. (07 Marks)
- b. Discuss the concepts and technology behind the working of electrical tongue in food science. (06 Marks)
- c. Explain the process of removing polluting heavy metals using bioremediation or biomining via microbial surface adsorption. Give examples of the microbes used for removing any two polluting heavy metals. (07 Marks)

OR

- 10 a. Discuss the importance of 3D printing in food industry. Give examples of 3D printed foods. (06 Marks)
- b. Explain the term DNA origami and its technological importance. (06 Marks)
- c. Discuss any four applications and limitations of artificial intelligence for disease diagnosis. (08 Marks)

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CBCS SCHEME

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Question Paper Version : A

Fourth Semester B.E./B.Tech. Degree Examination, June/July 2024 Universal Human Value and Professional Ethics

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. Value Education Helps to _____
 - a) Removes Our Contradictions
 - b) Removes our Confusions
 - c) Bring harmony at all levels of human living
 - d) All of the above
 2. Self – exploration is a process of dialogue between ‘what you are’ and _____
 - a) What you want to be
 - b) What other wants to be
 - c) What society want to be
 - d) None of these
 3. What is the universal Human Aspiration?
 - a) Happiness and prosperity
 - b) Continuity of happiness and Prosperity
 - c) Happiness
 - d) Prosperity
 4. What is Happiness?
 - a) A harmony state in which you want to be
 - b) A state getting through sensations
 - c) It is a preconditioning state
 - d) Smile
 5. What are the basic guidelines for value education :
 - a) Cannot be defined for the present system
 - b) Cannot be universal for all
 - c) Universal, Rational, Natural and Verifiable
 - d) Cannot be acceptable by the Humans

31. What are the four orders in nature?
a) Natural order, Plant order, Animal order, Human order
b) Material order, Plant order, Animal order, Human order
c) Natural order, Vegetation, Animal order, Material order
d) Bio order, natural order, Animal order, Plant order
32. Material order is called as _____
a) Jiva Avastha
b) Padartha Avastha
c) Prana Avastha
d) Natural order
33. _____ order does not have growth in innate.
a) Physical b) Pranic c) Animal d) Human
34. Humans are the smallest order and they are referred to as _____
a) Jiva Avashta
b) Gyana Avastha
c) Prana Avastha
d) Padartha Avastha
35. The transformation of _____ in nature is most cyclical.
a) Material thing
b) Plant
c) Animal
d) Birds
36. Cyclical nature and _____ provide us with some clues of the harmony that is in nature.
a) Material order
b) Self – Regulation
c) Natural acceptance
d) Self – Realization
37. Each unit is _____.
a) Self-organized in space
b) Emotional and active in nature
c) Recognizing with other units in society
d) All of these
38. There is _____ among all the unit of nature.
a) Existence b) Co-existence c) Harmony d) None of these
39. There is a Relationship of _____ in nature.
a) Mutual Fulfillment
b) Mutual happiness
c) Mutual prosperity
d) Mutual harmony

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40. "Kriya" means something that has _____
- a) Motion
 - b) Movement
 - c) Progress
 - d) All of these.
41. Professional ethics means _____
- a) Develop professional competence with ethical human conduct
 - b) The implication of Right understanding in ethics
 - c) The definitiveness of Human conduct in terms of values, polices and character.
 - d) All of these.
42. What does competence in professional ethics means :
- a) Clarity about comprehensive goal
 - b) Competence of mutually fulfillment
 - c) Both a) and b)
 - d) Neither a) nor b)
43. Comprehensive human Goal consists of
- a) Right understanding, Prosperity, Fearlessness and Co-existence
 - b) Samadhan, Samridhi, Abhay and Sehasitiva
 - c) Sambrudhi, Samadhan, Samridhi and Sehasitiva
 - d) Both a) and b)
44. Holistic production systems are _____
- a) Eco Friendly
 - b) Co-existence
 - c) Mutual Happiness
 - d) Harmony
45. Sarvabhauma Vyavastha is a feeling of being related to every unit including human being and other entities of _____
- a) Society
 - b) Nature
 - c) Family
 - d) World family
46. Production system includes _____
- a) Optimal utilization of local resources and expertise
 - b) Economic viability and sustainability
 - c) Priority for local consumption
 - d) All of the these
47. What are the criteria chosen for a humanistic management model?
- a) The whole unit working as a well knit family cooperative and motivational, ensuring correct appraisal of human labour
 - b) Targeting employer – employee as well as consumer satisfaction and nonprofit maximization
 - c) Both a) and b)
 - d) Neither a) nor b)

48. The definiteness of behaviour and work of human being is termed as
- a) Human character
 - b) Human behaviour
 - c) Human constitution
 - d) Human working
49. Natural acceptance is a mechanism of _____
- a) Self – acceptance
 - b) Self – exploration
 - c) Self – evolution
 - d) Harmony
50. Good policy reflects
- a) Conductive to Human Welfare
 - b) Conductive to enrichment, protection and utilization
 - c) Non conductive to environment and human welfare
 - d) Only a) and b)
