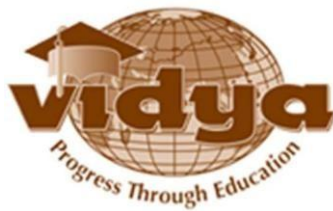# S7 CSE QUESTION BANK

COMPUTER SCIENCE & ENGINEERING

VIDYA ACADEMY OF SCIENCE AND TECHNOLOGY TECHNICAL CAMPUS KILIMANOOR

(A unit of Vidya International Charitable Trust)

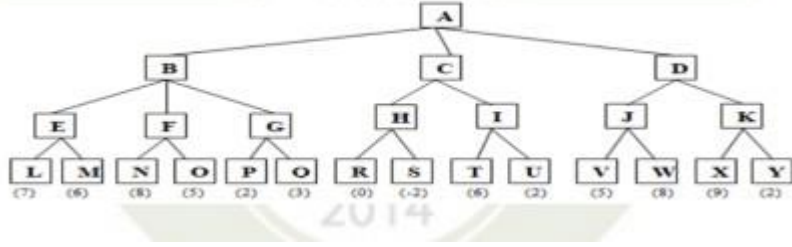Accredited by NAAC with "B++" grade

Index

Course Code: CST401

Course Name: ARTIFICIAL INTELLIGENCE

Module I			
Sl. No		**Marks**	**Year**
1.	Describe in detail the four categories under which AI is classified with.	3	**May 2023**
2.	Describe any two ways to represent states and the transitions between them in agent programs.	3	**Dec 2022**
3.	Explain the structure Goal-based agents and Utility-based agents with the help of diagrams.	8	**May 2023**
4.	For the following activities, give a PEAS description of the task environment and characterize it in terms of the task environment properties. a) Playing soccer b) Bidding on an item at an auction.	6	**May 2023**
5.	(a) Explain learning 4gent with a neat diagram. (b) Discuss the milestones in the history of Artificial Intelligence.	8	**Dec 2023**
6.	Describe the aspects of AI based on human centred approach.	6	**Dec 2023**
7.	Explain the structure of a model based reflex agent with a neat diagram	6	**Dec 2023**
8.	Explain the any five foundations of AI	6	**May 2023**
9.	What is Turing Test? Give its significance in the field of Artificial Intelligence.	3	**May 2023**
10.	What is a rational agent? Explain.	3	**May 2023**
11.	For the following activities, give a PEAS description of the task environment and characterize it in terms of the task environment properties. a) Interactive English tutor	3	**Dec 2022**
12	Explain PEAS description and task environment properties with an example.	8	**Dec 2022**

	Module II		
1.	Differentiate between informed search and uninformed search.	**3**	**May 2023**
2.	Define heuristic function? Give two examples.	**3**	**Dec 2022**
3.	Explain Best First Search algorithm. How does it implement heuristic search?	**6**	**May 2023**
4.	Describe any four uninformed search strategies.	**8**	**May 2023**
5.	Write and explain A* search algorithm.	**6**	**May 2023**
6.	Explain the components of a well defined AI problem? Write the standard formulation of 8-puzzle problem.	**8**	**May 2023**
7.	Explain Depth first search with suitable example	**6**	**May 2023**
8.	Differentiate between Greedy best-first search and Recursive best-first search.	**3**	**May 2023**
9	How do you evaluate the performance of a search algorithm?	**3**	**Dec 2022**
10	What is a Rational agent? Explain.	**3**	**May 2023**
11	Explain the worting of Depth Limited Search with an example?	**8**	**Dec 2023**
12	Discuss the optimality of A* algorithm?	**6**	**Dec 2023**
	Module III		
1	(a) Solve the following crypt arithmetic problem by hand, using the strategy of backtracking with forward checking and the MRV and least-constraining-value heuristics. T W O + T W O —------------------------	**8**	**Dec 2022**

	FOUR		
2	What is local consistency in CSP constraint propagation? Explain different types local consistencies.	6	**May 2023**
3	Illustrate the use of alpha-beta pruning in games.	6	**Dec 2022**
4	Consider the following game tree in which static evaluation score are all from the players point of view: static evaluation score range is (+10 to -10) Suppose the first player is the maximizing player. What move should be chosen? Justify your answer.	8	**May 2023**
5	Explain constraint Satisfaction problems	6	**May 2023**
6	Define in your own words the terms constraint, Backtracking search, arc consistency, backjumping, min-conflicts and cycle cutset.	8	**May 2023**
7	Explain why it is a good heuristic to choose the variable that is most constrained but the value that is least constraining in a CSP search	6	**May 2023**
8	Explain Intelligent backtracking	6	**May 2023**
9	Define node consistency with an example.	3	**Dec 2022**
10	Write an Arc-Consistency algorithm (AC-3).	4	**May 2023**
11	How and when heuristic is used in Minimax search technique? Illustrate with an example. Also describe an algorithm for Minimax procedure.	8	**May 2023**
12	Solve the following Crypt arithmetic problem using constraints satisfaction search procedure. i) EAT ii) SEND THAT MORE ------- ------- APPLE MONEY	6	**May 2023**

	Module IV		
1.	Differentiate Forward Chaining and Backward Chaining with their algorithms.	9	**May 2023**
2.	Differentiate between Propositional logic and First order logic	5	**May 2023**
3.	Prove Propositional theorem	6	**May 2023**
4.	Explain First order predicate Logic	6	**May 2023**
5.	Define entailment with an example.	3	**Dec 2023**
6.	Explain the syntax and seinantics of predicate logic.	8	**Dec 2023**
7	Consider the following facts in a knowledge base l. Gita likes att kinds of food. 2. Mango and chapati are food. 3. Gita eats almond and is still alive. 4. Anything eaten by anyone and is still alive is food. . Prove "Gita likes Almond,, using resolution technique.	6	**Dec 2023**
8.	a. Distinguish between forward chaining and backward chaining.	8	**Dec 2023**
9.	What is a knowledge-based agent? How does it work? Write an algorithm for Knowledge based agent.	7	**May 2023**
10.	Illustrate the use of First Order Logic to represent Knowledge.	7	**May 2023**
11.	Suppose my knowledge base consists of the facts $S \wedge T \Rightarrow \neg (\neg P \wedge R)$, $\neg\neg S$, T And need to prove P is entailed. Use rules of inference to do this.	5	**May 2023**
12.	Give the definition of Propositional logic.	3	**May 2023**
	Module V		
1.	State and explain Ockham's razor principle	3	**May 2023**
2.	How is the best hypothesis selected from alternatives?	8	**May 2023**

3.	Explain Univariate Linear Regression.	6	**May 2023**
4.	Consider the following data set comprised of two binary input attributes (A1 and A2) and one binary output. Use the DECISION-TREE-LEARNING algorithm to learn a decision tree for this data. Show the computations made to determine the attribute to split at each node.	8	**May 2023**
5.	Explain Linear classification with logistic regression	6	**Dec 2022 May 2023**
6.	What is meant by supervised learning. Give an example	3	**Dec 2022 may 2023**
7.	Explain linear regression. Use the following data to construct a linear regression (14) model for the auto insurance premium as a function of driving experience. Driving experience (in years): 5 2 129 15 625 16 Auto insurance premium ($): 64 87 50 71 44 56 42 60	8	**Dec 2023**
8.	Explain regression with example	7	**May 2023**
9.	Explain classification with Linear models.	7	**May 2023**
10	Define overfitting in learning	3	**Dec 2022**

Table 4 data (Example / A₁ / A₂ / Output y):

Example	A_1	A_2	Output y
X_1	1	1	1
X_2	1	1	1
X_3	1	0	0
X_4	0	0	1
X_5	0	1	0
X_6	0	1	0

Question 7 sub-table:

Driving experience (in years)	5 2 129 15 625 16
Auto insurance premium ($)	64 87 50 71 44 56 42 60

11	Explain decision tree learning algorithm. Consider the following data set comprised of three binary input attributes (A_1, A_2, and A_3) and one binary output	8	**Dec 2022**

Example	A_1	A_2	A_3	Output y
$\mathbf{x}_1$	1	0	0	0
$\mathbf{x}_2$	1	0	1	0
$\mathbf{x}_3$	0	1	0	0
$\mathbf{x}_4$	1	1	1	1
$\mathbf{x}_5$	1	1	0	1

Use the DECISION-TREE-LEARNING algorithm to learn a decision tree for these data. Show the computations made to determine the attribute to split at each node.

12	Give the significance of Learning from examples. Explain the various types of Learning in problem solving.	7	**May 2023**

Course Code:CST 463

Course Name: WEB PROGRAMMING

	Module I		
Sl. No	Questions	Marks	Year
1	Define www.List any two examples of web server & web browser .Differentiate between URL and a domain?	3	Model Question
2	Design a webpage that displays the following table. 	6	Model Question
3	What is the difference between web servers and browsers in the context of their implementation and functionality?	4	KTU May 2019
4	What is MIME type, Give examples? Why should MIME type information be essentially included in HTTP responses?	3	KTU Dec 2019
5	Mention any three HTTP methods, provide a brief description about the functionality of each	3	KTU Dec 2019
6	Why do you call MIME as an extension feature? Justify with suitable statements.	3	KTU Dec 2019
7	Describe the situations in which POST method is preferred and why?	4	KTU May 2019
8	Write the equivalent HTML code to implement the following in a web page: 1) An image titled "flower.jpg" with proper attribute to set height, width and message text. 2) Unordered list with values tea, coffee and milk	6	KTU May 2020
9	Write an HTML code to display your class time table?	6	KTU Dec 2020
10	Explain: <a> , <img> ,<p> ,<div> ,<textarea>,<span>,<tr>,<form>elements with example	10	KTU Dec 2022
11	Write the HTML code for obtaining the following table. 	8	KTU Dec 2023

12	Write the HTML code for obtaining the following registration form, where the course field contains the options BCA, BBA, B. Tech, MBA, MCA, M. Tech	10	KTU Dec 2022,2023

	Module II		
1	Write CSS code for setting the following styles i) Table - A header row with background colour and bold font and other rows without that. ii) Unordered list – Set a smiley image as bullet.	3	KTU May 2019
2	External style sheets are usually preferred over other kinds of style sheets. Why?	4	KTU May 2019
3	What are selector forms, explain with example different types of selector forms	4	KTU Dec 2019
4	Discuss the various CSS style sheet levels with suitable examples. How are conflicts resolved when multiple style rules apply to a single webpage element	4	KTU Dec 2019
5	Il lustrate the implementation of a JavaScript function greeting () using external .js file, to display a welcome message, when you click on a Button in an HTML page.	5	Model Question
6	What are class selectors in CSS. Suppose that it is required to display the text content of p tags in 2 different styles depending on the context. Style-1:text should be displayed in blue colour, right aligned, underlined ,with font style of italics, and spacing between the words of text set to 2cm Style-2:text should be displayed with a background color of yellow, having a dashed blue color border and with a padding	5	KTU Dec 2019

	of 1.5cm		
7	Illustrate the usage of JavaScript DOM in event handling and explain any three methods with example.	8	Model Question
8	Write CSS and the corresponding HTML code for the following: i. Set the background color for the hover and active link states to "green" ii. Set the list style for unordered lists to "square". iii. Set "Flower.png" as the background image of the page and set 3% margin for the pages iv. Set dashed border for left and right and double border for top & bottom of a table with 2 rows.	6	Model Question, KTU Dec 2023
9	What is the difference between JavaScript primitives and objects in the context of how they are stored in memory?	3	KTU May 2019
10	a)Write a JavaScript program to implement various mathematical operations. Input should be prompted for and confirmation should be asked before proceeding to next operation. b)What is call back function in JavaScript ?State how it is different from normal functions	5	KTU May 2019,Dec 2023
11	a) What is client-side scripting? Write a JavaScript program which accepts N as input and print first N even numbers. b) Explain how to create objects in JavaScript with example? c) Compare Absolute Positioning and Relative positioning	6	KTU Dec 2020
12	a) Discuss various types of control statement in JavaScript? b) How to link an external style sheets to an HTML document? Describe the various attributes used? c) JavaScript is known as object-based language. Justify your answer?	8	KTU May 2020,Dec 2023
Module III			
1	Write a PHP script to search for a particular string pattern in a text.	5	KTU May 2019
2	Illustrate with a sample PHP script, how functions are implemented in PHP.	5	KTU May 2019
3	Briefly describe, with suitable examples, the various methods for iterating over the contents of a PHP array	3	KTU Dec 2019
5	Design a simple HTML form to input a string and to display whether it is palindrome or not when the form is submitted. Use a PHP script.	6	KTU May 2019
6	What are the primitives supported by PHP?	4	KTU May 2019
7	What are associative arrays. How are associative arrays are declared in PHP, illustrate with an example	2	KTU Dec 2019
8	What is the purpose of explode() and implode() function in PHP. Illustrate with suitable example	2	KTU Dec 2019
9	a) How to do pattern Matching in PHP? b) Write a PHP script to count the instances of words in string?	10	KTU Dec 2020

10	Write a PHP program to check whether the given number is prime or not.	3	KTU Dec 2022
11	a) Explain any six string handling functions used in PHP with example. b) What is the purpose of the implicit arrays $_POST and $_GET in PHP? Consider that a web page displays a form containing two text boxes (named num1 and num2), where the user enters numeric data. Write a PHP script which collects this form data, finds the sum, difference and the product of the two numbers and then displays the same with suitable messages. Assume that the script is to be embedded in the web page specified by the action attribute of the form and that the method used when the form is submitted is GET.	14	KTU Dec 2022
12	Write equivalent PHP statements corresponding to the following: (i)Declare an associative array named "ages" to store the key-value pairs ("Harry", 21), ("Alice", 20), ("Megha", 22), ("Bob", 19). (ii)Modify the value associated with the key "Megha" to 28. (iii)Sort the array according to values maintaining the key-value relationships and print the sorted key-value pairs. (iii)The entry identified by the key "Alice".	14	KTU Dec 2022

Module IV

1	Write equivalent PHP statements corresponding to the following: i. Declare an associative array named "ages" to store the key-value pairs ("Alice", 30), ("Bob", 30), ("Harry", 35), ("Mary", 32). ii. Modify the value associated with the key "Mary" to 28. iii. Sort the array according to values maintaining the key-value relationships and print the sorted key-value pairs. iv. The entry identified by the key "Bob"	8	Model Question
2	What are the uses of cookies in web pages? Describe syntax for setting cookies in PHP. How can you access and delete the cookie using setcookie() function?	6	Model Question
3	Write a PHP form handling program to perform the user registration of any website with a minimum of 5 different fields and insert the data into a MySQL table after establishing necessary connections with the DB,	8	Model Question
4	Design the HTML page which enters a given number and embed the PHP code to display a message indicating, whether the number is odd or even, when clicking on the 'CHECK NUMBER' button.	6	Model question
5	Write a PHP form handling program to verify the user authentication credentials of a web page using MySQL connection and store the userid value as a Session variable if the userid is valid.	6	Model question
6	Create a valid HTML document for yourself, including your name, address, and email address. Also add your college; your major and the course. Perform form handling in PHP and process the output using POST method.	6	Model question
7	Write an embedded PHP script which displays the factorial of all numbers from 1 to 10 in a table in the web page. The factorial	6	Model

	should be calculated and returned from a function. The table headings should be "Number" and "Factorial"		question
8	What is the significance of cookies in web? How can a cookie be created and destroyed in PHP?	5	KTU sept 2020
9	(a) What is the significance of cookies in web? How can a cookie be created and destroyed in PHP? (b) Write equivalent PHP statements corresponding to the following i)Declare an associative array named "marks" to store the key-value pairs ("Ram", 40),("Alice",20),("Raj",45),("Mary",35). ii)Modify the value associated with the key "Ram" to 50. iii)Sort the array and print the sorted key value pairs. iv)The entry identified by the key "Raj"	14	KTU Dec 2022
10	(a) Design an HTML form for entering a number by the user. Write a PHP code to display a message indicating, whether the number is positive or negative, when clicking on the submit button. (b) Write a PHP form handling program to perform the user registration of any website with a minimum of 5 different fields and insert the data into a My SQL table after establishing necessary connections with the Database.		KTU Dec 2022
11	Discuss the various steps for establishing PHP-My SQL connection with a My SQL database.	3	KTU Dec 2022
12	Illustrate with a sample PHP script, how CREATE operations on My SQL table are implemented in PHP	8	KTU Dec 2022,Dec 2023
Module V			
1	With a neat diagram, explain about Laravel MVC Framework.	6	Model Question
2	Discuss in detail about Laravel's Routing mechanisms.	8	Model Question
3	Enumerate the data types in JSON. Illustrate the document definition of a 'Student document 'using JSON Schema.	8	Model Question
4	Discuss the following in Laravel Views i. Creating & Rendering Views ii. Passing Data to Views iii. Sharing Data with All Views	6	Model Question
5	Describe the schema of a document implemented in JSON with suitable examples	3	Model question
6	Explain the role of Resource controllers in Laravel.	3	Model Question
7	What is Route Model Binding in Laravel? Which types of route model binding are supported in Laravel?	5	Model Question,K TU Dec

			2023
8	Explain how laravel performs route handling using routes calling controller methods?	5	Model Question
9	List the data types used in JSON? Explain the use of parse () and stringify() functions in JSON with examples.	5	Model Question,K TU Dec 2023
10	Il lustrate the implementation of a JavaScript function greeting () using external .js file, to display a welcome message, when you click on a Button in an HTML page.	5	Model Question
11	Describe the schema of a document implemented in JSON with suitable examples	3	KTU Dec 2022
12	a)Explain the role of Resource controllers in Laravel. b)With a neat diagram, explain about Laravel MVC Framework c)Discuss in detail about Laravel's Routing mechanisms	3	KTU Dec 2022

EET 435 RENEWABLE ENERGY ENGINEERING

MODULE I

Sl.No	Questions	Mark	KTU
1	With a neat diagram explain solar cell characteristics	4	Sep 2020
2	Define a) Solar constant b) Air mass c) Irradiance	3	DEC 22
3	List greenhouse gases. Explain the science of greenhouse effect	3	DEC 22
4	Explain briefly the impact of conventional sources of energy on environment	6	DEC 22
5	Calculate the angle made by beam radiation with normal to a flat plate collector on November 30, at 9.00 AM solar time for a location at27%0' N. The collector is tilted at an angle of latitude plus 120, with the horizontal and is pointing due south.	8	DEC 22 MAY 24
6	How is nuclear fission different from nuclear fusion? Discuss the method of energy generation in both the cases	6	DEC 22
7	Calculate the average value of global solar radiation on a horizontal surface for March 2I, at the latitude 6f 120 N. The ratio of average length of solar day and length of the longest solar day is 0.68. The constants a = 0.28 and b : 0.5'		DEC 22
8	The difference between the daytime and night-time temperature is minimum in coastal areas. But in deserts, there is a large swing between the daytime and night- time temperatures. Why?	3	MAY 24
9	Under what conditions can electric cars be considered as "zero-emission" vehicles?	3	MAY 24
10	Define the following terms and differentiate between their meanings a) Beam radiation and Diffuse radiation b) Surface azimuth angle and solar azimuth angle c) Local clock time and local apparent time	6	MAY 24 DEC 23
11	Calculate the sun's altitude and azimuth angle at 8.30 AM solar time on March 18 for a location at 350 N latitude	6	MAY 24
12	Write short notes on classification of energy resources. Also explain which type of alternate energy source is the best suitable for rural and agricultural applications and why?	7	DEC 23

EET 435 RENEWABLE ENERGY ENGINEERING

MODULE II

Sl.No	Questions	Mark	
1	Classify tidal power plants and brief explain any two of them.	6	Dec 2019
2	What is meant by "bio fouling" and what is effect on OTEC. What are the methods used avoid this problem.	4	Dec 2019
3	Classify tidal power plants based on the type of basin used.	6	Sep 2020
4	List out any five merits and demerits of OTEC. Explain various types of tidal power plants.	10	Dec 2017
5	State the merits and limitation of ocean energy conversion plant. Drawing a schematic diagram, explain the principle of a closed cycle OTEC Plant. Why closed cycle OTEC is preferred?	10	Dec 2017
6	Explain the principle of tidal power generation. List the advantages and limitations of tidal power plant	9	Dec 2018 DEC 23
7	What is the difference between active and passive solar applications? Give examples of active and passive solar applications.	3	Dec 22
8	Describe about solar pond with a sketch?	3	Dec 22
9	With a neat sketch, explain the working of a medium temperature solar power generation cycle	8	Dec 22
10	What are the components of solar liquid flat plate collectors? Draw a solar liquid flat plate collector and discuss the critical requirements of cover plate and absorber plate for the efficient working of the collector?	8	Dec 22
11	With a schematic diagram, explain the working of a Claude cycle OTEC plant	8	MAY 24
12	Explain about tidal power plant with a neat sketch? Kerala state has a long coastal area, discuss the environmental impact of installing a tidal power project	8	MAY 24

MODULE III

1	Explain how wind power plants are classified. Explain vertical axis wind turbine with necessary diagrams.	5	April 18 MAY 24

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2	What are the two fundamental mechanisms to produce force from the wind? What are the advantages and disadvantages of a wind energy conversion system?	5	May 19
3	Give a comparison between vertical axis and horizontal axis wind machines	5	May 19
4	Explain yaw control mechanism	6	Sep 20 DEC 24
5	With a neat diagram explain the construction of a propeller type wind power system	6	Sep 20
6	Define power coefficient of wind turbines. Derive an expression for power coefficient. Explain Betz Criterion and its significance?	8	DEC 22
7	Discuss briefly the effect of tip speed ratio (TSR) on torque and solidity	6	DEC 22
8	With neat sketches, explain the different types of wind turbines used to extract wind energy	6	DEC 22
9	What are the advantages and disadvantages of wind energy conversion system	8	DEC 22
10	Explain swept area, cut in speed and cut out speed for wind mill.	3	DEC 23
11	List the basic component of wind mill and draw the wind energy conservation system	3	DEC 23
12	Derive the one-dimensional momentum theory and Beltz's limit for the wind mill. Also state the assumption in theory and draw the variation of pressure and velocity in wind mill	8	DEC 23

MODULE IV

1	Explain the process of anaerobic digestion of biomass into biogas. Draw the schematic diagram of a biodigester.	5	April 18

2	What is anaerobic digestion? Explain briefly	5	May 19
3	What are biomass resources? Enumerate the processes which are used for biomass conversion	10	May 19 MAY 24
4	What are the factors that affect biogas generation	5	Sep20
5	With a neat schematic diagram, explain the biomass gasification based electric power generation system.	5	Dec 17
6	Draw the schematic of a KVIC type of bio gas plant. Briefly explain the power generation from satellites.	10	Dec18
7	Explain the production of producer gas from biomass.	5	Dec 19
8	What is anaerobic digestion? Explain briefly	5	May 19
9	Explain about binary cycle geothermal power generation	6	Dec 22
10	Can we produce biogas at home? justify your answer.	8	DEC 23
11	Explain Construction & working of Floating drum type biogas plant with neat sketch	6	DEC 23
12	Explain with neat sketch the construction and working of Janata model biogas plant	8	MAY 24

MODULE V

1	Explain the design and selection of different types of turbines used for small hydro plants.	5	April 18
2	Explain how fuel cell works as a renewable energy source.	5	April 18
3	Describe how energy is harnessed from satellite stations	5	April 18
4	Draw the layout of a micro hydro project.	4	Dec 18
5	Explain any one type of fuel cell.	5	Dec 18
6	Prepare a brief note on emerging technologies in the field of renewable energy.	4	May 19
7	What is small hydro power? How is it classified? Obtain an expression for the power that can be generated from a small hydro power station.	5	May 19
8	What are fuel cells? Mention few applications of fuel cells.	5	May 19

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			DEC 23
9	Explain the working principle of a fuel cell.	4	MAY 24
10	Briefly explain the hydrogen energy system with necessary diagram	5	Dec 2019
11	Briefly describe about Fuel Cell Technology, Hydrogen Energy, Alcohol energy and Power from Satellite stations	10	MAY 24
12	Describe how energy is harnessed from satellite stations. Explain the how urban waste is converted into useful energy.	10	DEC 23

CET 445 NATURAL DISASTERS AND MITIGATION (S7 CSE ELECTIVE)

QUESTION BANK

MODULE 1

Sl.No.	Questions	Marks	KTU, Year
1	In relation to Disaster mitigation, define the terms risk and vulnerability.	3	KTU-May,2023
2	With help of neat sketch, Illustrate the inter-relationship between various Earth Subsystems.	3	KTU-May,2023
3a	Explain classifications of hazards.	9	KTU-May,2023
b	With a typical example, explain carbon footprint.	5	KTU-May,2023
4a	Define the terms emergency, capacity, and resilience.	6	KTU-May,2023
b	Define hazard and disaster. With a typical example, explain how a hazard differs from a disaster.	8	KTU-May,2023
5	With the help of an example, illustrate the interaction between geosphere and atmosphere.	3	KTU-May,2024
6	Recent reports have shown that that human induced greenhouse gas emissions is the root main cause behind multiple disasters in recent years. Explain with some case studies.	7	KTU-May,2024
7	How is urbanization related disasters?	7	KTU May2024
8	How does a hazard differ from a disaster? Explain with examples.	3	KTU DEC,2022
9	What is carbon footprint? How is it related to disasters?	3	KTU DEC,2022
10a	Illustrate the interactions between sub-systems of earth in the case of fossil fuel and extraction and consumption. How can this lead to disasters?	8	KTU DEC,2022
b	What does the term urbanization mean? How is urbanization related to disaster?	6	KTU DEC,2022
11	Explain the terms (i) exposure (ii) vulnerability (iii) capacity.	6	KTU DEC,2022
12	Explain the term resilience. How does resilience of a community influence the recovery form a disaster?	8	KTU DEC,2022

MODULE 2

Sl.No.	Questions	Marks	KTU, Year
1	Enlist effects of Volcanic eruption on: 1) Environment 2) Biodiversity 3) Economy.	3	KTU-May,2024

2	How is a tsunami formed? List out any six possible impacts of tsunami	3	KTU-May,2024
3	Discuss the possible negative impacts of flood. List out the mitigation measures.	14	KTU-May,2024
4a	Explain the elastic rebound theory for earthquakes.	4	KTU-May,2024
b	Discuss the various hazardous effects of an earthquakes	10	KTU-May,2024
5	State any three classifications of floods.	3	KTU-May,2023
6	What are the different types of seismic waves	7	KTU-May,2023
7a	State and explain any three impacts of earthquakes on the earth's subsystems.	7	KTU-May,2023
b	Explain plate tectonics theory for cause of earthquakes with suitable diagrams.	7	KTU-May,2023
8a	Using neat sketches, explain the mechanism of formation of Tsunamis.	7	KTU-May,2023
b	State and explain any four major impacts of Tsunamis on the subsystems	7	KTU-May,2023
9	Discuss the classification of earthquakes.	3	KTU DEC,2022
10	What is storm surge? What are its causes?	3	KTU DEC,2022
11	Discuss the various hazards associated with a volcano.	14	KTU DEC,2022
12	Discuss the mitigation measures to reduce the impact of tsunamis.	14	KTU DEC,2022

MODULE 3

Sl.No.	Questions	Marks	KTU, Year
1	What is soil degradation?	3	KTU-May,2023
2	How is soil formed?	3	KTU-May,2023
3	what is desertification? Explain any four causes of desertification.	3	KTU-May,2024
4	What are the causes of wildfire?	3	KTU-May,2024
5	How will you assess the vulnerability of an area to landslides?	7	KTU-May,2023
6	How is it possible to mitigate landslides based on non-structural methods?	7	KTU-May,2023
7a	Explain any three strategies for mitigating the impacts of soil degradation.	7	KTU-May,2023
b	Explain any five major causes of soil degradation	7	KTU-

Sl.No.	Questions	Marks	KTU, Year
			May,2023
8	Define Soil Degradation. Discuss the factors which can cause soil degradation.	14	KTU-May,2024
9	List out the impacts of landslides. Explain the control measures adopted to prevent landslides	14	KTU-May,2024
10	Discuss the various ecological functions served by soil.	3	KTU DEC,2022
11	Differentiate translational and rotational slides	3	KTU DEC,2022
12a	What are the different types of forest fires? Explain.	8	KTU DEC,2022
b	Discuss the negative impacts of a forest fire.	6	KTU DEC,2022
13	Discuss in detail the mitigation measures that can be adopted to alleviate the impacts of soil desertification.	14	KTU DEC,2022

MODULE 4

Sl.No.	Questions	Marks	KTU, Year
1	Define disaster risk management.	3	KTU-May,2023
2	Using neat sketch, Illustrate the disaster management cycle'	3	KTU-May,2023
3	compare and contrast disaster prevention and disaster preparedness	3	KTU-May,2024
4	which are the core elements of disaster risk management? Explain.	3	KTU-May,2024
5	What is meant by onsite and offsite emergency plans? (6) . b) Explain in detail the various components of a disaster management plan.	14	KTU-May,2024
6	How does SWOT analysis help in disaster management? Discuss the advantages and limitations of SWOT analysis	14	KTU-May,2024
7a	Explain any five major causes of soil degradation	7	KTU-May,2023
b	Explain any three strategies for mitigating the impacts of soil degradation	7	
8a	How will you assess the vulnerability of an area to landslides?	8	KTU-May,2023
b	How is it possible to mitigate landslides based on non-structural methods?	6	
9	Explain SWOT analysis and its uses in disaster management. What are the advantages and disadvantages of the method?	14	KTU DEC,2022
10	What are the factors that determine the nature of disaster response? Explain.	14	KTU DEC,2022
11	Explain the different phases in disaster risk management cycle.	3	KTU DEC,2022
12	What are the major actions included in disaster response?	3	KTU DEC,2022

Sl.No.	Questions	Marks	KTU, Year
	MODULE 5		
1	List out the essential facilities to be ensured at a relief camp.	3	KTU-May,2024
2	What is the role of technology in disaster management?	3	KTU-May,2024
3	Enumerate the major steps involved in the pre-disaster measures for floods.	3	KTU-May,2023
4	Enumerate major steps involved in a post-disaster phase?	3	KTU-May,2023
5a	Define 'relief in the context of disaster management. Identify the principles guiding relief.	7	KTU-May,2023
b	How will you formulate disaster management plan for landslide	7	KTU-May,2023
6	Discuss the various factor to be considered in conducting environmental impact assessment of a construction of a new dam project, keeping in mind the probable hazards/disasters	14	KTU-May,2023
7	Prepare disaster management plan in the case of landslide on a railway track near station.	14	KTU-May,2024
8	Explain the various steps in EIA for a major infrastructure project. Discuss how following EIA rules can abate any possible disaster	14	KTU-May,2023
9	Enumerate the facilities to be ensured in an emergency relief camp.	3	KTU DEC,2022
10	What are the objectives of a disaster management plan?	3	KTU DEC,2022
11	What are the steps involved in E.I.A process in India?	14	KTU DEC,2022
12	Explain the pre-disaster, disaster and post-disaster phase measures taken for a flood.	14	KTU DEC,2022

FACULTY IN CHARGE: SHAHANA A H

ASSISTANT PROFESSOR, CSE

MCN 401 – INDUSTRIAL SAFETY ENGINEERING

	MODULE 1		
SL.NO	**QUESTIONS**	**MARK**	**KTU/KU Month/Year**
1	How safety improves the productivity of a firm	3	MAY 24
2	What are the causes of industrial accidents	3	MAY 24
3	Explain the role of management, supervisors, government and voluntary agencies in safety.	14	MAY 24
4	Which are the various accident causation theories? Explain	7	MAY 24
5	Discuss the significance of safety committee	7	MAY 24
6	With suitable examples differentiate between unsafe act and unsafe conditions referred to construction industry.	3	DEC 23
7	How do voluntary agencies supports safety measures in various organization	3	DEC 23
8	Explain Heinrich's domino theory for accident causation. Also mention any two modifications made on this basic concept.	7	DEC 23
9	Explain the six distinguished functions of safety committee in an industry	7	DEC 23
10	With suitable examples explain how does safety management improve productivity of a firm.	6	DEC 23
11	Explain the responsibilities of supervisors to ensure safety in an industrial organization.	8	DEC 23
12	Write the importance of safety in organisations	3	MAY 23
	MODULE 2		
1	What are the advantages of good housekeeping	3	MAY 24
2	What are the elements of an emergency response plan from a confined space	3	MAY 24
3	Classify the personal protective equipment. List the suitability of at least seven types of PPEs.	14	MAY 24
4	Write the significance of work permit system. Explain various types of work permits?	7	MAY 24
5	How will you compare the safety performance of two industries?	7	MAY 24
6	With suitable sketches mention the features of any two PPE for eye protection in industrial hazardous sites.	3	DEC 23
7	Explain the major objectives of work permit system	3	DEC 23
8	Explain the key functions of any three different types of respiratory protective equipments	6	DEC 23
9	Explain any ten important responsibilities of housekeeping head of an organization.	8	DEC 23

10	Write short notes on the following: i. Cold work permit ii. Reactive measures for safety performance monitoring iii. Five S (5S) concept in housekeeping.	14	DEC 23
MODULE 3			
1	How safety of the workers can be ensured during Excavation work	3	MAY 24
2	What are the various hazards of underwater work	3	MAY 24
3	Discuss the safety and fire prevention facilities required for a building, as per National building code	14	MAY 24
4	Create a list of general safety precautions to be taken during tunnelling, blasting, and demolition operations:	14	MAY 24
5	Explain any five critical reasons for high rate of accidents in construction industry.	3	DEC 23
6	As an engineering supervisor how do you ensure the overall safety during demolition operations?	3	DEC 23
7	Write short notes on the following: i. Cumulative Trauma Disorders due to ergonomic issues in work sites ii. Hazards and risks during Underpinning works iii. Safety measures during excavation works	14	DEC 23
8	With suitable schematics, mention any eight specific safety precautions for scaffolding to ensure the safety of the workers.	9	DEC 23
9	Explain the classification of residential buildings based on the National Building Code of India	5	DEC 23
10	How can workers' safety be ensured during underpinning work?	3	MAY 23
MODULE 4			
1	Mention the various Safety considerations in Material Handling	3	MAY 24
2	What are the objectives of machinery safeguards	3	MAY 24
3	What do you meant by hearing conservation program in production industries? Explain the key elements of a hearing conservation program	14	MAY 24,DEC 23
4	What are the different types of machine guarding devices used in industries? Discuss the suitability of each.	14	MAY 24
5	Explain the safety guidelines to be followed for the lifting hooks used in heavy industrial mechanisms.	3	DEC 23
6	Describe about the safety practices to be followed during arc welding process	8	DEC 23
7	Differentiate between manual and mechanised material handling with suitable examples	6	DEC 23
8	An industrial plant is equipped with crane, conveyors, hoist etc. Explain the maintenance strategy to be followed for any of the material handling equipment to ensure safe working environment.	9	DEC 23

9	With suitable schematics, explain the operation of any presence sensing device suitable as a safety guarding device for an industrial unit	5	DEC 23
10	List the safety precautions to be followed during grinding operation	3	MAY 23
MODULE 5			
1	How do you classify fires	3	MAY 24
2	What do you meant by inventory analysis of hazards	3	MAY 24
3	What is meant by Preliminary Hazard Analysis? How do you conduct a Preliminary Hazard Analysis?	7	MAY 24
4	Briefly explain Material Safey Data Sheets (MSDS)	7	MAY 24
5	Briefly explain fire and explosion hazard rating of process plant	7	MAY 24
6	Explain the various steps involved in the hazard identification and risk assessment	7	MAY 24
7	Explain the different causes of electric hazards	3	DEC 23
8	Write short note on toxic gas release due to chemical and fire explosion	3	DEC 23
9	Describe the relevance and procedure for HAZOP for safety assessment	9	DEC 23
10	Explain how does MSDS differ from a product label referred to material safety.	5	DEC 23
11	Explain any four types of fire - extinguishers.	9	DEC 23
12	Describe about any four hazardous properties of chemical materials.	5	DEC 23