S7 CSE QUESTION BANK

COMPUTER SCIENCE & ENGINEERING

**VIDYA ACADEMY OF SCIENCE AND TECHNOLOGY
TECHNICAL CAMPUS, KILIMANOOR**
(A unit of Vidya International Charitable Trust)
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Index

Course Name:ARTIFICIAL INTELLIGENCE

Module I		
Sl. No	**Model Questions**	**Marks**
1.	What is a rational agent? Explain.	**3**
2.	Describe any two ways to represent states and the transitions between them in agent programs.	**3**
3.	Explain the structure Goal-based agents and Utility-based agents with the help of diagrams.	**8**
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**
5.	Explain the structure Simple reflex agents and Model-based reflex agents with the help of diagrams.	**8**
6.	Discuss about any five applications of AI.	**6**
7.	Explain the different approaches in AI	**6**
8.	Explain the any five foundations of AI	**6**
9.	Brief the history of AI	**8**
10.	What is AI?	**3**
Module II		
1.	Differentiate between informed search and uninformed search.	**3**
2.	Define heuristic function? Give two examples.	**3**
3.	Explain Best First Search algorithm. How does it implement heuristic search?	**6**
4.	Describe any four uninformed search strategies.	**8**
5.	Write and explain A* search algorithm.	**6**
6.	Explain the components of a well defined AI problem? Write the standard formulation of 8-puzzle problem.	**8**
7.	Explain Breadth first search with suitable example	**6**
8.	Explain Depth first search with suitable example	**6**

9.	Explain the heuristic accuracy on performance.	6
10.	Differentiate between Greedy best-first search and Recursive best-first search.	3

Module III

1	What Are the Components of a Constraint Satisfaction Problem? Illustrate with an example.	3
2	Formulate the following problem as a CSP. Class scheduling: There is a fixed number of professors and classrooms, a list of classes to be offered, and a list of possible time slots for classes. Each professor has a set of classes that he or she can teach.	3

3	(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
	___............................
	  F O U R
		8

4	What is local consistency in CSP constraint propagation? Explain different types local consistencies.	6
5	Illustrate the use of alpha-beta pruning in games.	6
6	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
7	Explain constraint Satisfaction problems	6
8	Define in your own words the terms constraint, Backtracking search, arc consistency, backjumping, min-conflicts and cycle cutset.	8
9	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
10	Explain Intelligent backtracking	6

		Module IV	
1.		What is a knowledge based agent? How does it work?	3
2.		Represent the following assertion in propositional logic: "A person who is radical (R) is electable (E) if he/she is conservative (C), but otherwise is not electable."	3
3.		Convert the following sentences into first order logic: Everyone who loves all animals is loved by someone. Anyone who kills an animal is loved by no one. Jack loves all animals. Either Jack or Curiosity killed the cat, who is named Tuna. Did Curiosity kill the cat?	6
4.		Give a resolution proof to answer the question "Did Curiosity kill the cat? "	8
5.		Prove or find a counter example to the following assertion in propositional logic: If $\alpha \models (\beta \wedge \gamma)$ then $\alpha \models \beta$ and $\alpha \models \gamma$.	6
6.		For each pair of atomic sentences, give the most general unifier if it exists: Older (Father (y), y), Older (Father (x), John).	8
7.		Explain Forward and Backward Chaining	6
8.		Differentiate between Propositional logic and First order logic	5
9.		Prove Propositional theorem	6
10.		Explain First order predicate Logic	6
		Module V	
1.		Describe the various forms of learning?	3
2.		State and explain Ockham's razor principle	3
3.		How is the best hypothesis selected from alternatives?	8
4.		Explain Univariate Linear Regression.	6
5.		Consider the following data set comprised of two binary input attributes (A1 and A2) and one binary output.	8

```
----------------------------------------------------------
Example      A₁        A₂        Output y
----------------------------------------------------------
  X₁          1          1           1
  X₂          1          1           1
  X₃          1          0           0
  X₄          0          0           1
  X₅          0          1           0
  X₆          0          1           0
```

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.

6.	Explain Linear classification with logistic regression	6
7.	Explain Supervised learning with examples.	7
8.	Explain Learning Decision tree using an example	7
9.	Explain regression with example	7
10.	Explain classification with Linear models.	7

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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	What is the role of query string in web communication? Write an example for a query string.	3	KTU May 2019
3	W rite the syntax of the URL? Rewrite the default URL of your university website by adding a subdomain named 'Research' and a web page named 'FAQ.html'. Also link this URL through the logo of 'kturesearch.png' placed in a web page. The FAQ page should be opened in a new window	5	Model Question
4	Design a webpage that displays the following table. 	6	Model Question
5	What is the difference between web servers and browsers in the context of their implementation and functionality?	4	KTU May 2019
6	What is MIME type, Give examples? Why should MIME type information be essentially included in HTTP responses?	3	KTU Dec 2019
7	Mention any three HTTP methods, provide a brief description about the functionality of each	3	KTU Dec 2019
8	Why do you call MIME as an extension feature? Justify with suitable statements.	3	KTU Dec 2019
9	Describe the situations in which POST method is preferred and why?	4	KTU May 2019
10	Write the syntax of URL with suitable example.	3	KTU May 2020
11	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

12	Write an HTML code to display your class time table?	6	KTU Dec 2020
13	Explain: <a> , <img> ,<p> ,<div> elements with example	4	Model question
14	Create and test an XHTML document that describes and unordered list of atleast 5 popular books. The bullet for each book must be a small image of its books cover	4	Model question
Module II			
1	What are the advantages of using a CSS framework? Explain the features of Bootstrap in relation to the above answer.	4	KTU May 2019
2	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
3	External style sheets are usually preferred over other kinds of style sheets. Why?	4	KTU May 2019
4	What are selector forms, explain with example different types of selector forms	4	KTU Dec 2019
5	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
6	How can CSS be used to display a XML document? Illustrate with an example.	5	KTU May 2019
7	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
8	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 of 1.5cm	5	KTU Dec 2019
9	Illustrate the usage of JavaScript DOM in event handling and explain any three methods with example.	8	Model Question
10	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
11	What is the difference between JavaScript primitives and objects in the context of how they are stored in memory?	3	KTU May 2019

12	Write a JavaScript program to implement various mathematical operations. Input should be prompted for and confirmation should be asked before proceeding to next operation.	5	KTU May 2019
13	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?	6	KTU Dec 2020
14	How does jQuery enhance the ease of JavaScript code implementation, explain?	3	KTU May 2019
15	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

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
4	What are the two modes that the PHP processor operates in, explain	2	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	a) What are the different ways to create array in PHP? Explain with example? b) List out any 4 string functions in PHP?	6	KTU Dec 2020

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	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
4	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
5	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
6	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
7	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
8	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 should be calculated and returned from a function. The table headings should be "Number" and "Factorial"	6	Model question
9	What is the significance of cookies in web? How can a cookie be created and destroyed in PHP?	5	KTU sept 2020
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
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
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

Course Code: CET 445
Course Name:NATURAL DISASTER AND MITIGATION

	MODULE 1		
Sl. No	**Questions**	**Marks**	**KTU/KU Month/Year**
1	With a typical example explain how a hazard differs from a disaster	3	MODEL
2	Explain the terms: vulnerability and risk and how they contribute to disasters	3	MODEL
3	Describe how an infrastructure project could trigger disaster.	6	MODEL
4	How does resilience influence the recovery from a disaster? Illustrate with examples	8	MODEL
5	Bring out the differences between emergency and disaster. How is the risk for a disaster assessed?	14	MODEL
6	Enumerate natural disasters, and mention their impacts.	3	MODEL
7	What do you mean by Carbon Foot Print	3	MODEL
8	Categorize the various layers of atmosphere based on their distance from earth and explain the features of each layer with a neat diagram.	14	MODEL

MODULE 2

Sl. No	Questions	Marks	/KU Month/Year
1	What are the causes of floods? How do they decide the magnitude of impact?	14	MODEL
2	How are earthquakes caused? What is the connection between earthquake and tsunami?	3	MODEL
3	What are the causes of floods? How do they decide the magnitude of impact?	14	MODEL
4	Discuss the triggering factors for landslides. Illustrate how they could become disastrous in the case of an infrastructure project.	14	MODEL
5	Evaluate the factors giving rise to forest fires. Analyse the influence of climate change on them.	14	MODEL
6	How can prevent soil degradation ?		

MODULE 3

Sl. No	Questions	Marks	KTU/KU Month/Year
1	Discuss the triggering factors for landslides. Illustrate how they could become disastrous in the case of an infrastructure project	14	MODEL
2	Discuss the triggering factors for landslides. Illustrate how they could become disastrous in the case of an infrastructure project	14	MODEL
3	. How does desertification occur? Discuss the mitigation measures.	14	MODEL
4	Compare and contrast the concepts of disaster response and recovery with suitable examples.	14	MODEL

5	Appraise (with suitable examples) the significance of ideas of relief, rehabilitation, reconstruction and recovery in disaster management	6	MODEL
6	How is soil formed? Why do soils differ in characteristics?	3	DEC 20
7	Compare creep and solifluction	9	DEC 20

MODULE 4

Sl. No	Questions	Marks	KTU/KU Month/Year
1	How is environmental impact connected to disasters?	3	DEC 17, APR 18
2	Compare and contrast the concepts of disaster response and recovery with suitable examples	5	DEC 17
3	. Appraise (with suitable examples) the significance of ideas of relief, rehabilitation, reconstruction and recovery in disaster management	5	DEC 17
4	What do you mean by SWOT Analysis.Discuss the limitations and advantages	14	DEC 17
5	Explain Disaster Management Cycle with a cycle.	4 3	DEC 17 DEC 19

MODULE 5

Sl. No	Questions	Marks	KTU/KU Month/Year
1	Prepare a disaster management plan for a landslide scenario in a hilly terrain. Discuss the organisational set up needed for the same	14	MODEL
2	Discuss the various factor to be considered in conducting environmental impact assessment of a highway project, keeping in mind the probable hazards/disasters	14	MODEL
3	How does desertification occur? Discuss the mitigation measures.	14	MODEL
4	Compare and contrast the concepts of disaster response and recovery with suitable examples	14	MODEL
5	Prepare a disaster management plan for a landslide scenario in a hilly terrain. Discuss the organisational set up needed for the same	14	MODEL
6	Discuss the various factor to be considered in conducting environmental impact assessment of a highway project, keeping in mind the probable hazards/disasters	14	MODEL

SL.NO	QUESTIONS	MARK	
	MODULE 1		
1	Differentiate Unsafe act and Unsafe conditions with suitable examples	3	MODEL
2	Discuss the significance of a safety committee in improving the safety performance of an industry	3	MODEL
3	List the various accident causation theories and explain any one in details.	14	MODEL
4	Discuss the significance of safety policy in reducing the accidents.	4	MODEL
5	Safety and productivity are the two sides of a coin'. Are you agreeing with this statement? Explain with your arguments.	10	MODEL
6	Discuss the role of management, supervisors, workmen, unions, government and voluntary agencies in safety.	14	MODEL
7	Write down the needs, types and advantages of safety committee?	14	MODEL
8	Write down the needs of safety in industries?	14	MODEL
9	Define the following terms a) Industrial safety b) Accident c) Injury d) Unsafe act e) Unsafe Condition f) Dangerous Occurrence g) Reportable accidents	(7*2=14)	MODEL
10	Write down the responsibilities of a safety officer?	3	MODEL
11	Which are the hazardous work which can expose the workers to have?	3	MODEL
12	The protection of workers from occupational accidents and diseases is the primarily the responsibility of management. Discuss the role of management to achieve this objective?	14	MODEL
	MODULE 2		
1	Which are the different types of permit? Highlight its suitability	3	MODEL
2	Which are five 'S' used in housekeeping?	3	MODEL
3	Classify the personal protective equipment. List the suitability of at least fifteen types of PPEs.	10	MODEL
4	How will you calculate the frequency rate? Explain with an example.	4	MODEL
5	How will you compare the safety performance of	10	MODEL

	two industries? Explain with suitable example		
6	Which are the steps to be followed in confined space entry to protect the life a worker.	4	MODEL
7	Write short notes on safety performance rate • Frequency rate • severity rate • incidence rate • activity rate	3	MODEL
8	Firm A has 60 workers working 48 hours a week and 20 accidents (lost time) resulting in 120 man-days lost. Firm B has 80 workers working 48 hours a week and 30 accidents resulting in 150 man-days lost. Which firm has the better safety performance during the same six months?	14	MODEL
9	What are the industrial models used for in the workplace? Write the methodology for each.	14	MODEL
10	Explain any three types of maintenance and their effects on housekeeping	3	MODEL
11	Using the following data calculate the frequency rate of accident in an industrial plant. a) Number of workers=500 b) Number of disabling injuries per year= 5. c) Average number of hours worked by worker per year=2000.	14	MODEL
12	Discuss the types and hazards of a confined space?	3	MODEL
MODULE 3			
1	List the various safety features of ladders	3	MODEL
2	How safety of the workers can be ensured during a demolition operations.	3	MODEL
3	Discuss the safety and fire protection facilities required for a high rise building as per National building code.	14	MODEL
4	Identify the various hazards during the different stages of building construction.	7	MODEL
5	Discuss the important types of ergonomic hazards associated with industries.	7	MODEL
6	What are safety measures adopted in construction phase?	4	MODEL
7	What is the causes of ergonomics hazards in construction work?	7	MODEL
8	Explain the National Building Code of India	7	MODEL
9	Discuss the safety measures to be followed in blasting and demolition work	14	MODEL
10	What is the relevance of ergonomic construction safety?	7	MODEL
MODULE 4			
1	Which are the hazards associated with manual	3	MODEL

	material handling?		
2	Discuss the safety issues of Gas welding operations.	3	MODEL
3	Which are the various types of machine guarding devices used industries. Discuss the suitability of each machine guarding devices.	14	MODEL
4	With suitable sketches briefly explain seven defects of wire ropes.	14	MODEL
5	What are the various types of Guards?	7	MODEL
6	Explain safety measures needed in turning and grinding.	14	MODEL
7	What are the various material handling equipment?	7	MODEL
8	Explain the safety needed in arc welding and gas welding.	14	MODEL
9	Explain Hearing Conservation Programme in Production industries.	7	MODEL
10	Discuss the safety issues in arc welding operations.	3	MODEL
MODULE 5			
1	Differentiate Hazard and Risk.	3	MODEL
2	Why MSDS is mandatory for chemical products.	3	MODEL
3	Define objectives of dow fire and explotion index	3	MODEL
4	Define material factor for calculation of Dow F & EI	5	MODEL
5	What are the different types of hazards.	10	MODEL
6	Define classes of fires	10	MODEL
7	What are the different types of chemical hazards	10	MODEL
8	What is Hazard and Operability Analysis? How do you conduct a HAZOP analysis?	14	MODEL
9	Define hazard identification methods	14	MODEL
10	Wahat are the risk assessment tools	14	MODEL
11	Discuss about different types of chemical hazards.	14	MODEL
12	What are the different types of fire extinguishers.	14	MODEL