B.Sc (Hons.) IN CSE FOURTH YEAR, SEVENTH SEMESTER EXAMINATION, 2022

ARTIFICAL INTELLIGENCE

[According to the new Syllabus]

Subject Code : 540201

Examination Code : 5617

Time–3 hours; Full Marks–80

[N.B. The figures in the right margin indicate full marks. Answer any four quyestion.]

1. (a) What is Artificial Intelligence? Differentiate between Knowledge and Intelligence. 2+3=5
   (b) How a machine can work as an Intelligent System? 5
   (c) What are the significant features of an expert system? 5
   (d) What are the different domain of Al? Describe them. 5
2. (a) What is meant by rational agent and omniscient agent? Define agent function and agent program. 5
   (b) Discuss goal based agent with figure. 5
   (c) Describe the various types of environment. 6
   (d) What are the criteria for evaluating search strategies?, Explain. 4
3. (a) Why we need searching algorithm in Al? Differentiate. between informed and uninformed searching algorithm. 2+4=
   (b) Describe Depth first search and Breadth first search algorithm with example. 5
   (c) What are the limitations of Blind search? 4
   (d) Write a short note on 8-puzzle problem. 5
4. (a) What is admissible heuristic? Write down the benefits of A* search with respect to greedy search. 2+
   (b) What do you know about α - β pruning? How does α - β pruning improve the minimax algorithm? Explain. 2+
   (c) What are four ways to represent knowledge in Al? Explain frame representation technique. 2+
5. (a) What is perceptron? Describe single layer and multi-layer perceptron. 2+
   (b) flow error is calculated in Backpropagatiorr? 3
   (c) Mention the variations on Back propagation. Explain any one of them. 1+
   (d) Using the data given below, calculate the final weights for the single layer perceptron : 7

Threshold 0= 0.2

Learning rate x= α =0.1

Inputs		Desired output	Initial weights		Actual output	Error	Final Weights	
X_1	X_2	(Yd)	W_1	W_2	Y	(e)	W_1	W_2
1	0	0	0.3	-0.1		-1	?	?

6. Write short notes on following topics (any four) : 5x4=20

(a) Genetic Algorithm

(b) Game Theory

(c) Perceptron Learning

(d) Back propagation

(e) Knowledge Representation

(F) Machine Learning.

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ARTIFICAL INTELLIGENCE

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Time–3 hours; Full Marks–80

B.Sc (Hons.) IN CSE FOUTH YEAR, SEVENTH SEMESTER EXAMINATION, 2022

E-COMMERCE AND WEB ENGINEERING

[According to the new Syllabus]

Subject Code : 540207
Examination Code : 5617
Time–3 hours; Full Marks–80

[N.B. The figures in the right margin indicate full marks. Answer any four quyestion]

1. (a) What is e-commerce business model? Discuss major six popular e-commerce business models. 8
   (b) List out some advantages and disadvantages of electronic payment system. 4
   (c) What are e-commerce marketing strategies for beginners? 4
   (d) What is the vision of e-governance in Bangladesh? 4
2. (a) Describe the basic security challenges of E-commerce. 5
   (b) What is digital signature? Explain the mechanism of digital signature 5
   (c) Define firewall? State the function of Firewall in E-commerce. 5
   (d) Define URL. Distinguish between http and https. 5
3. (a) What are the functions of web browser? 3
   (b) What is the full form of Google? How does the Google Search Engine work? 1+3=4
   (c) Differentiate between on-page SEO and off-page SEO. 5
   (d) What is Google Algorithm? How many types of Google Algorithms are there? 8
4. (a) Write a code segment that will create password field in HTML Form 5
   (b) Demonstrate the use of heading and ordered list tags in a HTML webpage. 5
   (c) Write down HTML and CSS code to design :

Home	Services	Contact
	Hardware	
	Software	
	Graphics Design	

   (d) List out different types of errors that may occur in CSS and explain how to handle those errors. 5
5. (a)

5. (a) Explain Document object Model(DOM) with Suitable examples and code. 5
(b) Write a Java Script program to convert: temperature from Celsius to Fahrenheit and viceversa. 5
(c) Explain function definition, function calling, function parameter and return type with a suitable example in JavaScript. 6
(d) What is AJAX? Why AJAX is needed in WebPages? 4

6. Write short note on any four from the following : 5x4=20
(a) You Tube
(b) Google Drive
(c) Digital Government
(d) PHP 5uperglobal Variables
(e) CSS Box Model
(d) Goggle Adsense.

B.Sc (Hons.) IN CSE FOUTH YEAR, SEVENTH SEMESTER EXAMINATION, 2021

E-COMMERCE AND WEB ENGINEERING

[According to the new Syllabus]

Subject Code : 540207

Examination Code : 5617

B.Sc (Hons.) IN CSE FOURTH YEAR, SEVENTH SEMESTER EXAMINATION, 2022

COMPUTER GRAPHICS

[According to the new Syllabus]

Subject Code : 540205

Examination Code : 5617

Time–3 hours; Full Marks–80

[N.B. The figures in the right margin indicate full marks. Answer any four quyestion.]

1. (a) What do you understand by Computer Graphics? Discuss the real life use of computer graphics. 4
   (b) What is raster scan? Explain with diagram raster scan CRT display. 1+5=6
   (c) What is scan conversion? Describe briefly Bresenham's line drawing algorithm. 1+5=6
   (d) What is output device? Explain different types of graphics output device. 1+3=4
2. (a) What is transformation? Explain different types of geometric transformation. 1+6=7
   (b) Discuss Bresenham's circle algorithm. 6
   (c) Differentiate geometric transformation and co-ordinate transformation. 4
   (d) Define Refresh flicker, Aspect ratio and resolution. 3
3. (a) What is composite transformation? Explain with an example. 4
   (b) Briefly explain Cohen-Sutherland line clipping algorithm. 6
   (c) Perform a 45° rotation of a triangle A (0, 0), B (1, 1) and C (5, 2): 6
      (i) about the origin
      (ii) about p(-1, -1).
   (d) Explain 2D graphics pipeline.
4. (a) Define projection. Explain the taxonomy of projection. 1+5=6
   (b) Discuss different types of parallel projection. 5
   (c) Discuss Painter's algorithm for visible surface determination. 5
   (d) Explain Eight-way symmetry of a circle. 4
5. (a) Explain the ways of representing a polygonal net model. 4
   (b) Write down the properties of Bezier approximation. 4
   (c) How can you test whether a polygon P obscure another polygon or not? 6
   (d) Describe Z-buffer algorithm. 6
6. (a) Define color model? What is the purpose of chromaticity diagram. 4
   (b) Explain different interpolative shading methods. 6

(c) Given points $P_1(1, 2, 0)$, $P_2(3, 6)$ 20) and $P_3(2, 4, 6)$ and a viewpoints at $C(0, 0, -10)$. Determine which point obscure the other when viewed from C. 4

(d) What is Coherence? Explain different types of Coherence. 6

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COMPUTER GRAPHICS

[According to the new Syllabus]

Subject Code : 540205

Examination Code : 5617

Time–3 hours; Full Marks–80

N.B. The figures in the right margin indicate full marks. Answer any four quyesti

1. (a) What do you mean by interactive graphics system? Explain the co framework for interactive graphics

B.Sc (Hons.) IN CSE FOURTH YEAR, SEVENTH SEMESTER EXAMINATION, 2022

COMPILER DESIGN AND CONSTRUCTION

[According to the new Syllabus]

Subject Code : 540203

Examination Code : 5617

Time–3 hours; Full Marks–80

[N.B. The figures in the right margin indicate full marks. Answer any four question]

1. (a) What do you mean by compiler? Describe the parts of compilation with example. 8
   (b) Describe a language-processing system. 4
   (c) Illustrate the functions of a preprocessor. 4
   (d) Define symbol table. What are the functions of a symbol table? 4
2. (a) What do you mean by parse tree? Write down the properties of parse tree. 5
   (b) Define ambiguous grammar. Consider the following grammar 5

   string → string → string
   string → string → string
   string →0 | 1 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9

   Is the grammar ambiguous for the string 9 - 5 + 2? Justify your answer.
   (c) How does a lexical analyzer interface between input stream. and a parser? 5
   (d) Describe about NFA and DFA. 5
3. (a) Define regular definition. Write down the regular definition for Pascal Identifiers. 2+3
   (b) What are the phases for creating a lexical analyzer with Lex? 5
   (c) Write down the algorithm for. constructing a DFA from an NFA. 5
   (d) Construct a DFA for the regular expression (a/b)* abb. 6
4. (a) What is operator precedence paring? Write down some advantages rind disadvantages of operator precedence parsing. 4
   (b) What do you mean by left factoring? Consider the following grammar: 6

   S → iCtSS'/ iCtSeS / a
   C →b

   Left factor the above grammar.
   (c) Find H1RSTand FOLLOW for the following grammar :

   S → iCtSS' / a

$S' \rightarrow eS / E$

$C \rightarrow b$

(d) What do you mean by parsing? Difference between top-down and bottom-up parsing? 4

(a) What do you mean by three-address code? What is the implementation method of three address code? Describe with example. 5

(b) Implement three address code, quadruples, triples and indirect triples for the statement a: = b * - c + b * -c. 8

(c) Write down the algorithm for partitioning into basic blocks. 5

(d) Give the main idea of dead code elimination. 2

6. (a) Define register and address descriptors. Write down a code-generation algorithm. 6

(b) What are the properties of good error diagnostic? 4

(c) Define error. What are the different types of syntactic error? 5

(d) Describe the plan of error detector and corrector. 5

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Time–3 hours; Full Marks–80

[N.B. The figures in the right margin indicate full marks. Answer any four quyestion]

1. (a) Define translator software. What are the differences between