2021

COMPUTER SCIENCE — HONOURS

Paper : DSE-B-4

(Advance Java)

Full Marks : 50

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Answer ***question no.*** **1** and ***any four*** from the rest.

1. Answer ***any five*** questions : 2×5

(a) Differentiate between servlets and applets.

(b) Is it possible to include the results of another page in jsp?

(c) How can you create Custom Tags in JSP? Show with an example.

(d) What are the different data types present in javascript?

(e) Discuss the NaN property in javascript.

(f) Explain the use of css() method in jQuery.

(g) Discuss about the functionalities of Spring IOC container.

(h) Discuss about the functionalities of JVM.

2. (a) Explain life cycle of servlet.

(b) Discuss getcharacterencoding() and setcharacterencoding() methods.

(c) Write the differences between httpservlet and genericservlet. 4+(2+2)+2

3. (a) Explain jsp life cycle.

(b) Write the advantages of using jsp.

(c) Discuss different jsp scripting elements. 4+2+4

4. (a) What is javascript?

(b) Show how javascript handles onclick(), onmouseover() and onload() events with example.

(c) Discuss how to do client side validation using javascript. 2+(2+2+2)+2

5. (a) What is jquery?

(b) Show the steps of form validation using jQuery with an example.

Please Turn Over

(c) Explain application server services of jQuery.

(d) Give an example using jQuery.length. 2+3+3+2

6. (a) What is a session?

(b) Show how a session is created.

(c) What are the session information passing mechanisms between client and server?

(d) How to destroy a session? 2+2+4+2

7. (a) What are the advantages of spring framework?

(b) Explain spring MVC framework.

(c) Discuss the spring jdbc packages. 2+4+4

8. Write short notes on ***any two*** of the following : 5×2

(a) Servlet collaboration

(b) Exception handling in jsp.

(c) Spring AOP

(d) Spring ORM framework.

2021

COMPUTER SCIENCE — HONOURS

Paper : DSE-B-3

(Introduction to Computational Intelligence)

Full Marks : 50

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Answer ***question no.*** **1** and ***any four*** from the rest.

1. Answer ***any five*** questions : 2×5

(a) What do you understand by state space search?

(b) Differentiate data driven search and goal driven search.

(c) Define fuzzy set.

(d) Discuss any two characteristics of Prolog.

(e) What is Heuristic function?

(f) What do you mean by Semantic Net?

(g) Distinguish between Machine learning and Deep learning.

(h) Discuss in brief about fuzzy relationship.

2. (a) Discuss with an example about the Depth First Search algorithm.

(b) Discuss about the time complexity of Depth First Search. (4+4)+2

3. Write short notes on (***any two***) : 5×2

(a) Gradient Descent Method

(b) Feed forward neural network

(c) De-fuzzification

(d) Training dataset.

4. (a) Differentiate between probabilistic approach and fuzzy logic based approach.

(b) What is the sequence of steps taken in designing a fuzzy logic machine? 5+5

5. (a) What do you understand by Game playing in Artificial Intelligence?

(b) Explain Minimax search algorithm for game playing. 3+7

Please Turn Over

6. (a) Differentiate fuzzy set and crisp set.

(b) Prove that $\left(\tilde{A} \cap \tilde{B}\right)^c = \tilde{A}^c \cup \tilde{B}^c$

where, $\tilde{A} = \{(x_1, 0.4), (x_2, 0.3)\}$

and $\tilde{B} = \{(x_1, 0.2), (x_2, 0.6)\}$

and $\tilde{A}$ and $\tilde{B}$ are fuzzy set. 5+5

7. $\tilde{A}$ and $\tilde{B}$ are two fuzzy sets.

$\mu_{\tilde{A}}(x) = \frac{x}{x+1}$ and $\mu_{\tilde{B}}(x) = \frac{1}{x}$

Find membership function of each of the following :

(a) $\tilde{A}^c$ *and* $\tilde{B}^c$

(b) $\tilde{A} \cup \tilde{B}$

(c) $\tilde{A} \cap \tilde{B}$

(d) $\left(\tilde{A} \cup \tilde{B}\right)^c$

(e) $\left(\tilde{A} \cap \tilde{B}\right)^c$ 2×5

8. (a) Discuss with an example about A^* algorithm.

(b) Is iterative deeping search complete?— Justify your answer. 7+3

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