19CAU35

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BCA DEGREE EXAMINATION MAY 2022
(Sixth Semester)

Branch – **COMPUTER APPLICATIONS**

SOFT COMPUTING

Time: Three Hours Maximum: 75 Marks

SECTION-A (10 Marks)

Answer **ALL** questions
ALL questions carry **EQUAL** marks (10 x 1 = 10)

1 In computing, the output is called as
(i) Consequent (ii) Outfeed
(iii) Anticedents (iv) Premise

2 For the given Fuzzy set A, which Elements does not belong to A?
A={(x1,0.25), (x2,0), (x3,1), (x4,0.5)}
(i) x1 (ii) x2
(iii) x3 (iv) x4

3 A neuro software can be defined as
(i) A software that is used to analyze neurons
(ii) A powerful and easy neural network
(iii) Software utilized by a neurosurgeon
(iv) A software aimed to assist experts in the real world

4 Feature of ANN in which ANN creates its own organization of representation of information it receives during learning time is
(i) Adaptive learning (ii) What if analysis
(iii) Supervised learning (iv) Self - Organization

5 In Feedforward ANN, information flow is
(i) Unidirectional (ii) Multidirectional
(iii) Tridirectional (iv) Bidirectional

6 The most famous Recurrent Neural Network is
(i) Perceptron's (ii) Radial basis networks
(iii) Hopfield net (iv) Binary search

7 What is auto- association task in neural network?
(i) Find relation between 2 consecutive inputs
(ii) Predicting the future inputs
(iii) Categorization of inputs
(iv) Related to storage & recall task

8 If the weight matrix stores the given patterns then the network becomes?
(i) Hetero associative memory (ii) Multidirectional associative memory
(iii) Auto associative memory (iv) Temporal associative memory

9 For the binary coded genetic discussed in the course, how many solution(s) is/ are involved in a single mutation operation?
(i) 4 (ii) 3
(iii) 1 (iv) 2

10 What is the first approach in optimization method?
(i) Theory of bending (ii) Theory of elongation
(iii) Theory of stress (iv) Theory of layout

Cont...

SECTION - B (25 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks (5 x 5 = 25)

11 a Describe the structure of knowledge based system.

OR

B Explain about Generalized Fuzzy Operations with suitable example.

12 a List out the Characteristics of neural network.

OR

b Illustrate the different steps involved in the training algorithm of Perceptron.

13 a Describe the Back propagation learning algorithm for FFNN.

OR

b Summarize the applications of RBF.

14 a Compare Auto associative memory with Hetero associative memory.

OR

b Describe the applications of Associative memory.

15 a List out the advantages and disadvantages of Genetic Algorithm.

OR

b Analyze Particle Swarm optimization technique.

SECTION -C (40 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks (5 x 8 = 40)

16 a Examine the various types of soft computing Techniques and its Applications.

OR

b Elaborate on fuzzy set operations.

17 a Analyze any one application where biological neural network preferred over artificial neural network and why?

OR

b Discuss about the three basic models of ANN with its Applications.

18 a Discuss Feed Forward Neural Network Architecture and Give pattern recognition tasks solved by FFNN.

OR

b Illustrate the function approximation using Radial Basis Function Neural Network.

19 a Draw the Architecture of a Bi- directional Associative memory and discuss about its working

OR

b Outline the Advantages and limitations of Traditional optimization methods.

20 a Summarize the Working Principle of Genetic Algorithm.

OR

b Elaborate on Ant colony optimization. How do ACO be a solution to optimization problem?

Z-Z-Z END