

Online Assessment (Special Examination) (Even Sem/Part-I/Part-II Examinations 2019 - 2020

Course Name - Soft Computing

Course Code - BCSE604B

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Answer all the questions. Each question carry one mark.

9. 1. Core of Soft Computing is

Mark only one oval.

- Fuzzy Computing, Neural Computing, Genetic Algorithms
- Fuzzy Networks and Artificial Intelligence
- Artificial Intelligence and Neural Science
- Neural Science and Genetic Science

10. 2. Who initiated the idea of Soft Computing

Mark only one oval.

- Charles Darwin
- Lofti A Zadeh
- Rechenberg
- Mc_Culloch

11. 3. Artificial intelligence is

Mark only one oval.

- It uses machine-learning techniques. Here program can learn From past experience and adapt themselves to new situations
- Computational procedure that takes some value as input and produces some value as output.
- Science of making machines performs tasks that would require intelligence when performed by humans
- None of these

12. 4. Expert systems

Mark only one oval.

- combine different types of method or information
- approach to the design of learning algorithms that is structured along the lines of the theory of evolution(
- an information base filled with the knowledge of an expert formulated in terms of if-then rules
- None of these

13. 5. Falsification is

Mark only one oval.

- Modular design of a software application that facilitates the integration of new modules
- Showing a universal law or rule to be invalid by providing a counter example
- A set of attributes in a database table that refers to data in another table
- None of these

14. 6. Evolutionary computation is

Mark only one oval.

- combining different types of method or information
- Approach to the design of learning algorithms that is structured along the lines of the theory of evolution.
- Decision support systems that contain an information base filled with the knowledge of an expert formulated in terms of if-then rules.
- None of these

15. 7. Massively parallel machine is

Mark only one oval.

- A programming language based on logic
- A computer where each processor has its own operating system, its own memory, and its own hard disk
- Describes the structure of the contents of a database
- None of these

16. 8. $n(\log n)$ is referred to

Mark only one oval.

- A measure of the desired maximal complexity of data mining algorithms
- A database containing volatile data used for the daily operation of an organization
- Relational database management system
- None of these

17. 9. Which is true about the Shallow knowledge

Mark only one oval.

- The large set of candidate solutions possible for a problem
- The information stored in a database that can be, retrieved with a single query
- Worth of the output of a machine learning program that makes it understandable for humans
- None of these

18. 10. Vector

Mark only one oval.

- does not need the control of the human operator during their execution
- is an arrow in a multi-dimensional space. It is a quantity usually characterized by an ordered set of scalars
- the validation of a theory on the basis of a finite number of examples
- None of these

19. 11. Fuzzy Computing

Mark only one oval.

- mimics human behavior
- doesn't deal with 2 valued logic
- deals with information which is vague, imprecise, uncertain, ambiguous, inexact, or probabilistic
- All of these

20. 12. The membership functions are generally represented in

Mark only one oval.

- Tabular Form
- Graphical Form
- Mathematical Form
- Logical Form

21. 13. The region of universe that is characterized by complete membership in the set is called

Mark only one oval.

- Core
- Support
- Boundary
- Fuzzy

22. 14. A fuzzy set wherein no membership function has its value equal to 1 is called

Mark only one oval.

- normal fuzzy set
- Sub normal fuzzy set
- convex fuzzy set
- concave fuzzy set

23. 15. The crossover points of a membership function are defined as the elements in the universe for which a particular fuzzy set has values equal to

Mark only one oval.

Infinite

1

0

0.5

24. 16. Fuzzy logic is :

Mark only one oval.

used to respond to questions in a humanlike way

a new programming language used to program animation

the result of fuzzy thinking

a term that indicates logical values greater than one

25. 17. UA robot is a _____

Mark only one oval.

computer-controlled machine that mimics the motor activities of living things

machine that thinks like a human

machine that replaces a human by performing complex mental processing tasks

type of virtual reality device that takes the place of humans in adventures

26. 18. Robots used in automobile plants would be classified as :

Mark only one oval.

- Perception systems
- Industrial robots
- Mobile robots
- Knowledge robots

27. 19. Graphic programs widely used in the graphic arts profession include _____

Mark only one oval.

- Desktop publishing programs, image editors and illustration programs
- Artificial intelligence, virtual reality, and illustration programs
- Mega media programs, image editors, and desktop publishing programs
- Virtual reality, desktop publishing programs, and illustration programs

28. 20. Consider a fuzzy set A defined on the interval $X = [0, 10]$ of integers by the membership function : $\mu_A(x) = x / (x + 2)$ Then the α cut corresponding to $\alpha = 0.5$ will be

Mark only one oval.

- {0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10}
- {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}
- {2, 3, 4, 5, 6, 7, 8, 9, 10}
- None of these

29. 21. The height $h(A)$ of a fuzzy set A is defined as $h(A) = \sup A(x)$

Mark only one oval.

$h(A) = 0$

$h(A) < 0$

$h(A) = 1$

$h(A) < 1$

30. 22. A _____ point of a fuzzy set A is a point $x \in X$ at which $\mu_A(x) = 0.5$

Mark only one oval.

core

support

cross-over

α - cut

31. 23. Suppose the function y and a fuzzy integer number around -4 for x are given as $y = (x-3)^2 + 2$. Around $-4 = \{(2, 0.3), (3, 0.6), (4, 1), (5, 0.6), (6, 0.3)\}$ respectively. Then $f(\text{Around } -4)$ is given by:

Mark only one oval.

$\{(2, 0.6), (3, 0.3), (6, 1), (11, 0.3)\}$

$\{(2, 0.6), (3, 1), (6, 1), (11, 0.3)\}$

$\{(2, 0.6), (3, 1), (6, 0.6), (11, 0.3)\}$

$\{(2, 0.6), (3, 0.3), (6, 0.6), (11, 0.3)\}$

32. 24. Given $U = \{1,2,3,4,5,6,7\}$ $A = \{(3, 0.7), (5, 1), (6, 0.8)\}$ then A will be: (where $\sim \rightarrow$ complement)

Mark only one oval.

- $\{(4, 0.7), (2,1), (1,0.8)\}$
- $\{(4, 0.3), (5, 0), (6, 0.2)\}$
- $\{(1, 1), (2, 1), (3, 0.3), (4, 1), (6,0.2), (7, 1)\}$
- $\{(3, 0.3), (6,0.2)\}$

33. 25. Perceptron learning, Delta learning and LMS learning are learning methods which falls under the category of

Mark only one oval.

- Error correction learning - learning with a teacher
- Reinforcement learning - learning with a critic
- Hebbian learning
- Competitive learning - learning without a teacher

34. 26. A perceptron has input weights $W1 = -3.9$ and $W2 = 1.1$ with threshold value $T = 0.3$. What output does it give for the input $x1 = 1.3$ and $x2 = 2.2$?

Mark only one oval.

- 2.65
- 2.3
- 0
- 1

35. 27. In a single perceptron, the updating rule of weight vector is given by

Mark only one oval.

- $w(n + 1) = w(n) + \eta[d(n) - y(n)]$
- $w(n + 1) = w(n) - \eta[d(n) - y(n)]$
- $w(n + 1) = w(n) + \eta[d(n) - y(n)] * x(n)$
- $w(n + 1) = w(n) - \eta[d(n) - y(n)] * x(n)$

36. 28. $w(n + 1) = w(n) - \eta[d(n) - y(n)] * x(n)$

Mark only one oval.

- $x^3 - x - 1 = 0$
- $x^3 + x - 1 = 0$
- $x^2 - x - 1 = 0$
- $x^2 + x - 1 = 0$

37. 29. A fuzzy set A on R is..... iff $A(\lambda x_1 + (1 - \lambda)x_2) \geq \min [A(x_1), A(x_2)]$ for all $x_1, x_2 \in R$ and all $\lambda \in [0, 1]$, where min denotes the minimum operator.

Mark only one oval.

- Support
- α -cut
- Convex
- Concave

38. 30. What are the 2 types of learning

Mark only one oval.

- Improvised and unimprovised
- supervised and unsupervised
- Layered and unlayered
- None of these

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