

SPECIALTY: EDM

EXAM PAPER: Computer Systems

Section A: MCQ (40 marks)

---

1. Agents behavior can be best described by.....
  - A. Perception sequence
  - B. Agent function
  - C. Sensors and Actuators
  - D. Environment in which agent is performing
2. A production rule consists of .....
  - A. A set of rule
  - B. A sequence of steps
  - C. Set of rule and sequence of steps
  - D. Arbitrary representation to problem
3. Which is the best way to go for game playing problem?
  - A. Linear approach
  - B. Heuristic approach (Some knowledge is stored)
  - C. Random approach
  - D. An optimal approach
4. What is machine learning?
  - A. The autonomous acquisition of knowledge through the use of computer programs
  - B. The autonomous acquisition of knowledge through the use of manual programs
  - C. The selective acquisition of knowledge through the use of computer programs
  - D. The selective acquisition of knowledge through the use of manual programs
5. Which of the factors affect the performance of learner system does not include?
  - A. Representation scheme used
  - B. Training scenario
  - C. Type of feedback
  - D. Good data structures
6. In language understanding, the levels of knowledge that
  - A. Phonological
  - B. Syntactic
  - C. Empirical
  - D. Logical
7. A model of language consists of the categories which does not include?
  - A. Language units
  - B. Role structure of units
  - C. System constraints
  - D. Structural units
8. Which is not a property of representation of knowledge?
  - A. Representational verification
  - B. Representational Adequacy
  - C. Inferential Adequacy
  - D. Inferential Efficiency
9. How is fuzzy logic different from conventional control methods?
  - A. If and then approach

- B. For approach
  - C. While approach
  - D. Do approach
10. If a hypothesis says it should be positive, but in fact it is negative, we call it.....
- A. A consistent hypothesis
  - B. A false negative hypothesis
  - C. A false positive hypothesis
  - D. A specialized hypothesis
11. The field that covers a variety of computer networks, both public and private, that are used in everyday jobs.
- A. Artificial Intelligence
  - B. ML
  - C. Network Security
  - D. IT
12. Network Security provides authentication and access control for resources.
- A. True
  - B. False
13. Which is not an objective of network security?
- A. Identification
  - B. Authentication
  - C. Access control
  - D. Lock
14. Which of these is a part of network identification?
- A. UserID
  - B. Password
  - C. OTP
  - D. Fingerprint
15. The process of verifying the identity of a user.
- A. Authentication
  - B. Identification
  - C. Validation
  - D. Verification
16. A concern of authentication that deals with user rights.
- A. General access
  - B. Functional authentication
  - C. Functional authorization
  - D. Auto verification
17. CHAP stands for?
- A. Challenge Handshake authentication protocol
  - B. Challenge Hardware authentication protocol
  - C. Circuit Hardware authentication protocol
  - D. Circuit Handshake authentication protocol
18. Security features that control that can access resources in the OS.
- A. Authentication

- B. Identification
- C. Validation
- D. Access control

19. An algorithm in encryption is called \_\_\_\_\_

- A. Algorithm
- B. Procedure
- C. Cipher
- D. Module

20. The information that gets transformed in encryption is \_\_\_\_\_

- A. Plain text
- B. Parallel text
- C. Encrypted text
- D. Decrypted text

21. What does HCI stand for?

- a. Human Computer Interface.
- b. Human Computer Interaction
- c. Human Computer Implementation.
- d. Human Computer Industry

22. Which one of these would NOT be found in a good HCI?

- A. Common short cuts, like CTRL+Z for undo.
- B. Icons that can have specific meanings.
- C. A long command line to achieve a function
- D. Sounds that convey meanings.

**23. Which one of these is a good reason for taking care to design a good computer human interface?**

- A. Not every user is a computer expert
- B. Well-designed HCIs allow the software to be sold at a better price.
- C. Well-designed HCIs use less computer resources.
- D. Well-designed HCIs allow the computer to run faster

24. In virtual reality which of the senses cannot currently be portrayed?

- A. Touch
- B. Hearing
- C. Sight
- D. Smell

25. HCI is based on psychological factors of humans?

- A. True
- B. False

26. Which of these is not a interface style?

- A. Command line/command prompt
- B. Menus
- C. Natural Language
- D. Voice Recognition

27. Which one of these is a good reason to include sounds in an HCI?
- A. Users react more quickly to sounds than to visual signals
  - B. Users react more slowly to sounds than to visual signals
  - C. There is no preference. People just like sounds
  - D. The computer reacts to sounds in the same way as a human
28. All countries read from left to right?
- a. True
  - b. False
29. A computer expert produces an solution with HCI which is very efficient in computer resources, based on command-lines. Which one of the following is most likely to be the result when the system is implemented?
- a. It will be welcomed by all staff.
  - b. All staff will enjoy using it after mastering the skills of command lines.
  - c. Most staff will want to become computer experts to use it.
  - d. Most staff will feel demoralised and will not want to use the system.
30. Which of these films uses futuristic HCI
- a. Speed
  - b. Minority Report
  - c. Terminator
  - d. Bambi
31. Types of computer graphics are?
- a) Vector and raster
  - b) Scalar and raster
  - c) Vector and scalar
  - d) None of these
32. Raster images are more commonly called?
- a) Pix map
  - b) Bitmap
  - c) Both a & b
  - d) None of the these
33. The quantity of an image depend on
- a) No. of pixel use by image
  - b) No. of line used by image
  - c) No. of resolution used by image
  - d) None
34. Several graphics image file formats that are used by most of graphics system are?

- a) GIF
- b) JPEG
- c) TIFF
- d) All of the above

35. Computer graphics is used in many DTP software as

- a) Photoshop
- b) Paint brush
- c) Both a & b
- d) None of these

36. Which color is produced with the green and red dots only?

- a) Blue
- b) Yellow
- c) Magenta
- d) White

37. A pixel may be defined as?

- a) Smallest size object
- b) Larger size object
- c) Medium size object
- d) Non of these

38. How is the movement of text or graphics classified?

- a) MOV
- b) Vector
- c) Alpha
- d) Animation

39. Graphics and image processing technique used to produce a transformation of one object into another is called?

- a) Animation
- b) Morphine
- c) Half toning
- d) None of the above

40. The types of computer animation are?

- a) 2D computer animation
- b) 3D computer animation
- c) Both a and b
- d) None of these

## SECTION B: QUESTIONS AND ANSWERS (60 marks)

### QUESTION 1 (20 marks)

- a) What is Human computer interaction? Site any four other fields of study that are involved in HCI **(5 marks)**
- b) By explain each of the concepts, relate affective effects of user interfaces to expressive interfaces? **(3 marks)**
- c) User frustration is common when interacting with applications through interfaces. State any three caused of user frustration. **(3 marks)**
- d) Consider the following: **(9 marks)**
  - i) Gimmicks
  - ii) Error messages
  - iii) Over burdening the user

### Question 2 (15 Marks)

- a) Briefly describe the processes of encryption and decryption in relation to cryptography. **4mks**
- b) What is the difference between Symmetric and Asymmetric key encryption? **3mks**
- c) Suppose you decide to use a 10-bit key. How many combinations are there? **3mks**
- d) James and Alexander are having a debate about Public Key Infrastructure (PKI). James says that it is simply a way of authenticating users. However, Alexander argues that it is a type of encryption algorithm. They have asked you to decide who is correct. Briefly outline the purpose of PKI. You should also explain what is meant by a certificate authority and digital certificate. **5mks**

### Question 3 (15 marks)

- i.
  - a. What is artificial intelligence? **1 marks**
  - b. List the major advantages of artificial intelligence over natural intelligence. **2 marks**

- c. List the major disadvantages of artificial intelligence as compared to natural intelligence. **2 marks**
  - d. Describe the difference between a knowledge base for an application and an organizational **2marks**
  - e. List the major AI technologies. **2 marks**
- ii. In real world, very few problems have straightforward solutions. This leads to an approach that looks for solution to the problems
- a. This approach is technically referred to as \_\_\_\_\_? **2 marks**
  - b. Spell out the process that one needs to consider in AI to obtain a solution from a given problem at hand. **2 marks**
  - c. Describe how graphs can be handy in representing a problem **3 marks**

#### **Question 4 (10 marks)**

- 1) What is a logo .....1mrks
- 2) Name 5 type of logos you know .....2.5mrks
- 3) For a new company that is still starting and need to gain popularity and customers.  
What type of logo type can you propose for such company and why? .....1.5mrks
- 4) Consider the logo below. Outline the various steps of producing it in CorelDraw or adobe illustrator .....5mrks

