

Model Question Paper

Subject Code: MT0039

Subject Name: Artificial intelligence and Remote communication

Credits: 2

Marks: 70

Part A (One mark questions)

1. The electronics device in the satellite that takes an uplink signal and converts it to a downlink signal is called a _____

- A) transponder.
- B) transformer.
- C) transistor.
- D) translator.

2. If the satellite is in a circular orbit 35,863 km that satellite is called as

- A) Geo map Satellites
- B) Geo section Satellites
- C) Geostationary Satellites
- D) Geo space Satellites

3. Which frequency band is heavily used for terrestrial applications

- A) K and Ku
- B) C and X
- C) L and S
- D) K and X

4. The word agent is derived from the Latin word agere which means _____.

- A) to be done
- B) to do
- C) to go
- D) to be given



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5. In the _____ Search method the nodes in the tree are generated in order of their distance from the root.
- A) Brute-Force
 - B) Breadth-First
 - C) Blind state-space
 - D) Uniform-cost
6. What are heuristics
- A) Rules of thumb that may solve a given problem, but do not guarantee a solution
 - B) The environment in which the search takes place
 - C) A problem space together with an initial state and a goal state
 - D) None of the above
7. In AI, a representation of _____ is a combination of data structures and interpretive procedures that is used in the right way in a program.
- A) knowledge
 - B) power
 - C) strength
 - D) Intelligence
8. The fundamental ideas about retrieval that have been developed in AI systems might be termed as _____ and _____
- A) Analogy ,reasoning
 - B) Thinking, doing
 - C) Event, domain
 - D) Linking, lumping
9. _____ is the primary consideration in designing knowledge-based AI systems.
- A) Analogy
 - B) Efficiency
 - C) Efficacy
 - D) Acquisition



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10. _____ invented wireless telegraph in 1896
- A) Guglielmo Marconi
 - B) Philo T. Farnsworth
 - C) Dr MARTIN COOPER
 - D) G.Marcon
11. ISDN stands for
- A) Integrated services digital network
 - B) Integrated services data network
 - C) Indian standard data network
 - D) integrated synchronized data network
12. GSM stands for
- A) General system for mobile communication
 - B) Global System for Money Communications
 - C) Global System for Mobile Communications
 - D) Globus System for Multiple Communications
13. _____ is called the father of AI.
- A) James .C Gosling
 - B) Dennis ritchie
 - C) Alan Turing
 - D) Isaac newton.
14. The _____ approach uses the knowledge of mathematics and engineering.
- A) rationalist
 - B) top-down
 - C) bottom-up
 - D) push-pop approach



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15. The Artificial Intelligence is concerned with designing intelligent computer systems that exhibit intelligent characteristics expressed by _____
- A) Functional behavior
 - B) human brain
 - C) Human behavior
 - D) Statistical analysis
16. 1. AI is used in diverse fields like space exploration, robotics,
 2. AI is used for military purpose
- A) 1-T, 2-F
 - B) 1-T, 2-T
 - C) 1-F, 2-F
 - D) 1-F, 2-T
17. _____ is a computerized advice-giver, that is capable of reasoning but which is usually confined to a rather narrow field of knowledge
- A) Expert system
 - B) Knowledge system
 - C) Common system
 - D) communication system
18. Rules in the knowledge base may only express a _____ that a conclusion follows from certain premises, rather than a certainty.
- A) Probability
 - B) Combination
 - C) Permutation
 - D).None of the above
19. Transmitted signals is in the form of _____ waves
- A) Electric waves
 - B) Magnetic waves
 - C) Electromagnetic waves



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- D) Electron waves
20. Optimum frequency range for satellite transmission is in the range _____ to _____
- A) 6 to 10GHz
 - B) 1 to 10GHz
 - C) 5 to 10GHz
 - D) 3 to 5 GHz

Part B (Two mark questions)

21. What is the typical coverage area of a wireless LAN
- A) diameter of 50 to 100m
 - B) Diameter of 100 to 300m
 - C) Diameter of 150 to 200m
 - D) Diameter of 250 to 300m
22. There are two schools of thoughts as far as the approaches to AI are considered. They are _____ and _____.
- A) human-centered approach, rationalist approach
 - B) Centered approach, rationalist approach
 - C) human-centered approach, statistical approach
 - D) functional approach, rationalist approach
23. _____ function assigns a numeric cost to each path.
- A) goal
 - B) cost
 - C) path
 - D) Path cost
24. The _____ as psychological model of human associative memory.
- A) semantic net
 - B) net
 - C) event



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D)node

25. Which option defines nyquist rate

- A)Given a bandwidth of B, the highest signal rate that can be carried is 3B.
- B)Given a bandwidth of B, the highest signal rate that can be carried is B.
- C)Given a bandwidth of B, the highest signal rate that can be carried is 2B.
- D)Given a bandwidth of B, the highest signal rate that can be carried is B/2.

26. The very first operational use of AI was the _____ used in the second world war to aid ground gunners to predict the path of a plane given its radar data.

- A)missiles
- B)rocket
- C)gun director
- D)satellite

27. Which of the following is TRUE about wireless networking?

1. The well-designed wireless network provides high speed, convenience and much more flexibility.
2. Wireless networks afford people tremendous freedom and mobility. Wireless networks can access the Internet, check e-mail, access an intranet, and print to a printer from anywhere.
3. In a wireless network there is a need to punch holes through walls or furniture to link computers and peripherals

- A) 1 only
- B) 2 only
- C) Both 1 and 2
- D) 3 only

28. The satellite communication offers following advantages:

1. satellites carry about one-third of the voice traffic and all of the TV signals.
2. Satellites in lower orbits will support high speed data services like internet access.



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3. Transmission cost is independent of distance, within satellite area of coverage.
- A) 1 only
 - B) 2 only
 - C) 3 only
 - D) 1, 2 and 3
29. The satellite communication offers following advantages
- 1. The satellite communication accommodates applications like broadcast, multicast, and point-to-point.
 - 2. low bandwidths or data rates are available to the user.
 - 3. The quality of transmission is extremely high.
- A) 1 and 2
 - B) 3 and 2
 - C) 1 and 3
 - D) 1, 2 and 3
30. If Bandwidth=1MHz, SNR=251, channel capacity=8Mbps find M (signal levels)
- A) 8
 - B) 16
 - C) 4
 - D) 2
31. Based on mode, transmission media can be classified as _____ and _____
- A) guided and unguided
 - B) Transmitter and Receiver
 - C) measurable and non-measurable
 - D) Single level and Multilevel



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Part C (Four mark questions)

32.

- i The Lower frequency suffers greater spreading, or free space loss.
- ii The area of coverage of a satellite system far exceeds that of a terrestrial system.
- iii Electrical noise generated by the earth's heat near its surface adversely affects reception.

A) i-F, ii-F, iii-T

B) i-F, ii-T, iii-T

C) i-F, ii-F, iii-F

D) i-F, ii-T, iii-F

33. Match the following

- | | |
|-------------------------|---------------------------|
| 1. Allen | i. Theory of computation |
| 2. Russel and Whitehead | ii. Principia Mathematica |
| 3. Wiener | iii. Cybernetics |
| 4. B.F. Skinner | iv. Verbal behavior |

A) 1-iv, 2, ii, 3-iii, 4-i

B) 1-i, 2, ii, 3-iv, 4-iii

C) 1-ii, 2, i, 3-iii, 4-iv

D) 1-i, 2, ii, 3-iii, 4-iv

34. State True or False

- i. Agents operate under human control
- ii. Goal test determines whether a given state is a goal state.
- iii. states are means for transforming the problem from one state to another

A) i-T, ii-F, iii-T

B) i-T, ii-F, iii-F

C) i-F, ii-T, iii-F

D) i-T, ii-T, iii-F



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35. Match the following

- i. Formal reasoning involves the syntactic manipulation of data structures to deduce new ones following pre specified rules of inference.
- ii. Procedural reasoning uses simulation to answer questions and solve problems.
- iii. Generalization and abstraction are also natural reasoning processes for humans that are difficult to pin down well enough to implement in a program.

A) i-T, ii-F, iii-T

B) i-T, ii-F, iii-F

C) i-F, ii-F, iii-T

D) i-T, ii-T, iii-T

36. if spectrum of a channel is between 3 MHz and 4 MHz and SNR db = 24 dB. what is the channel capacity

A) 6Mbps

B) 8Mbps

C) 4Mbps

D) 2Mbps

37.

- | | |
|-------------------|--|
| 1. Diagnosis | i. Governing the behavior of a system by anticipating problems |
| 2. interpretation | ii. The analysis of data, to determine their meaning |
| 3. Monitoring | iii. The continuous interpretation of signals from a system |
| 4. Control | iv. The process of finding faults in a system |

A) a-iii, b-i, c-iv, d-ii

B) a-ii, b-i, c-iii, d-iv

C) a-iii, b-ii, c-i, d-iv

D) a-iv, b-ii, c-iii d-i

38 The performance of a satellite link depends on following factors:

- i. Distance between earth station antenna and satellite antenna



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- ii. terrestrial distance between earth station antenna and the "aim point" of the satellite
- iii. Atmospheric attenuation

- A) i only
- B) i and ii
- C) i ,ii and iii
- D) ii only



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Answer Keys

Part – A		Part - B		Part - C	
Q. No.	Ans. Key	Q. No.	Ans. Key	Q. No.	Ans. Key
1	A	21.	B	32.	B
2	C	22.	A	33.	D
3	C	23.	D	34.	C
4	B	24.	A	35.	D
5	B	25.	C	36.	B
6	A	26.	C	37.	D
7	A	27.	C	38.	C
8	D	28.	D		
9	B	29.	C		
10	D	30.	B		
11	A	31.	A		
12	C				
13	C				
14	A				
15	C				
16	B				
17	A				
18	A				
19	C				
20	B				