Multiple Choice Questions and Answers

Unit Test: I
Courses: IF/CM6I
Name of Subject: Emerging Trends in Computer and Information Technology
Subject Code: 22618
Semester: VI

Unit 1: Artificial Intelligence

Artificial Intelligence MCQ

1. What is Artificial intelligence?
a) Putting your intelligence into Computer
b) Programming with your own intelligence
c) Making a Machine intelligent
d). Putting more memory into Computer

2. Who is a father of AI?
a) Alain Colmerauer
b) John McCarthy
c) Nicklaus Wirth
d) Seymour Papert

3. The first AI programming language was called:
a) BASIC
b) FORTRAN
c) IPL
d) LISP

4. Artificial Intelligence has its expansion in the following application.
a) Planning and Scheduling
b) Game Playing
c) Robotics
d) All of the above

5. The characteristics of the computer system capable of thinking, reasoning and learning is known as _____
a) Machine intelligence
b) Human intelligence
c) Artificial intelligence
d) Virtual intelligence

6. What is the term used for describing the judgmental or common sense part of problem solving?
a) Heuristic
b) Critical
c) Value based
d) Analytical

7. _____ is a branch of computer science which deals with helping machines finds solutions to complex problems in a more human like fashions
a) Artificial Intelligence
b) Internet of Things
c) Embedded System

d) Cyber Security

8. In ____ the goal is for the software to use what it has learned in one area to solve problems in other areas.

a) Machine Learning
b) Deep Learning
c) Neural Networks
d) None of these

9. Computer programs that mimic the way the human brain processes information is called as

a) Machine Learning
b) Deep Learning
c) Neural Networks
d) None of these

10. A ____ is a rule of thumb, strategy, trick, simplification, or any other kind of device which drastically limits search for solutions in large problem spaces.

a) Heuristic
b) Critical
c) Value based
d) Analytical

11. _____ do not guarantee optimal/any solutions

a) Heuristic
b) Critical
c) Value based
d) Analytical

12. Cognitive science related with _____

a) Act like human
b) ELIZA
c) Think like human
d) None of above

13. _____ Model should reflect how results were obtained.

a) Design model
b) Logic model
c) Computational model
d) None of above

14. Communication between man and machine is related with _____

a) LISP
b) ELIZA
c) All of above
d) None of above

15. ELIZA created by _____

a) John McCarthy
b) Steve Russell
c) Alain Colmerauer
d) Joseph Weizenbaum

16. The concept derived from _____ level are propositional logic, tautology, predicate calculus, model, temporal logic.

a) Cognition level

b) Logic level
c) Functional level
d) All of above

17. _____ that deals with the interaction between computers and humans using the natural language
a) LISP
b) ELIZA
c) PROLOG
d) NLP

18. The core components are constituents of AI are derived from _____
a) Concept of logic
b) Cognition
c) Computation
d) All of above

19. Aristotle's theory of syllogism and Descartes and kant's critic of pure reasoning made knowledge on _____.
a) Logic
b) Computation logic
c) Cognition logic
d) All of above

20. _____ model were developed and incorporated in machines which mimicked the functionalities of human origin.
a) Functional model
b) Neural model
c) Computational model
d) None of above

21. Chomsky's linguistic computational theory generated a model for syntactic analysis through _____
a) Regular Grammar
b) Regular Expression
c) Regular Word
d) None of these

22. Human to Machine is _____ and Machine to Machine is _____.
a) Process, Process
b) Process, Program
c) Program, Hardware
d) Program, Program

23. Weak AI is also known as ____
a) Narrow AI
b) General AI
c) Neural AI
d) None of above

24. _____ AI is able to perform dedicated task.
a) Narrow AI
b) General AI

c) Neural AI
d) None of above

25. Weak AI is_____
a) The embodiment of human intellectual capabilities within a computer.
b) A set of computer programs that produce output that would be considered to reflect intelligence if it were generated by humans.
c) The study of mental faculties through the use of mental models implemented on a computer
d) All of the above
e) None of the above

26. Strong AI is_____
a) The embodiment of human intellectual capabilities within a computer.
b) A set of computer programs that produce output that would be considered to reflect intelligence if it were generated by humans.
c) The study of mental faculties through the use of mental models implemented on a computer
d) All of the above
e) None of the above

27. Artificial intelligence is_____
a) The embodiment of human intellectual capabilities within a computer.
b) A set of computer programs that produce output that would be considered to reflect intelligence if it were generated by humans.
c) The study of mental faculties through the use of mental models implemented on a computer
d) All of the above
e) None of the above

28. Apple siri is a good example of _____ AI.
a) Narrow AI
b) General AI
c) Neural AI
d) None of above

29. IBM Watson supercomputer comes under ____ AI.
a) Narrow AI
b) General AI
c) Neural AI
d) None of above

30. ____ AI is a type of intelligence which could perform any intellectual task with efficiency like human.
a) Narrow AI
b) General AI
c) Super AI
d) None of above

31. The idea behind _____AI to make such a system which could be smarter and think like a human by its own.
a) Narrow AI
b) General AI
c) Super AI
d) None of above

32. Playing chess, purchasing suggestions on e-commerce site, self-driving cars, speech recognition, and image recognition are the example of ____.

a) Narrow AI
b) General AI
c) Super AI
d) None of above

33. _____AI is a type of intelligence which could perform any intellectual task with efficiency like a human.

a) Narrow AI
b) General AI
c) Super AI
d) None of above

34. Machine can perform any task better than human with cognitive properties is known as _____AI.

a) Narrow AI
b) General AI
c) Super AI
d) None of above

35. Ability to think, puzzle, make judgments, plan, learn, communication by its own is known as _____ AI.

a) Narrow AI
b) General AI
c) Super AI
d) None of above

36. ____ AI is hypothetical concept of AI.

a) Narrow AI
b) General AI
c) Super AI
d) None of above

37. Which AI system not store memories or past experiences for future actions.

a) Reactive machine
b) Limited memory
c) Theory of mind
d) None of above

38. Which machines only focus on current scenarios and react on it as per as possible best action.

a) Reactive machine
b) Limited memory
c) Theory of mind
d) None of above

39. IBM's deep blue system is example of ___.

a) Reactive machine
b) Limited memory
c) Theory of mind
d) None of above

40._____machine can stores past experiences or some data for short period time .

a) Reactive machine
b) Limited memory
c) Theory of mind
d) None of above

41. Self-driving car is example of ____.
a) Reactive machine
b) Limited memory
c) Theory of mind
d) None of above

42. Which AI should understand the human emotions, people, and beliefs and be able to interact socially like humans.
a) Reactive machine
b) Limited memory
c) Theory of mind
d) None of above

43. Which machines will be smarter than human mind?
a) Reactive machine
b) Limited memory
c) Theory of mind
d) Self-Awareness

44. _____machines will have their own consciousness and sentiments
a) Reactive machine
b) Theory of mind
c) Self-Awareness
d) Both B and C

45. 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

46. Machine learning invent by _____.
a) John McCarthy
b) Nicklaus Wirth
c) Joseph Weizenbaum
d) Arthur Samuel

47_____is a branch of science that deals with programing the systems in such a way that they automatically learn and improve with experience
a) Machine Learning
b) Deep Learning
c) Neural Networks
d) None of these

48. Classifying email as a spam, labeling webpages based on their content, voice recognition are the example of _____.
a) Supervised learning
b) Unsupervised learning

c) Machine learning
d) Deep learning

49. K-means, self-organizing maps, hierarchical clustering are the example of _____.
a) Supervised learning
b) Unsupervised learning
c) Machine learning
d) Deep learning

50. Deep learning is a subfield of machine learning where concerned algorithms are inspired by the structured and function of the brain called _____.
a) Machine learning
b) Artificial neural networks
c) Deep learning
d) Robotics

Data Visualization and Data Storytelling MCQ

1. ……is the graphical representation of information and data
a) Data Analysis
b) Data Visualization
c) Data Storytelling
d) Data engineering

2. What is the foremost objective of data visualization?

a) To convey complex data
b) To convey incomplete data
c) To convey data correctly
d) To make data more complex

3. Effective data visualization can help to:-

a) Reveal patterns, trends, and findings from an unbiased viewpoint.
b) Provide context, interpret results, and articulate insights.
c) Streamline data so your audience can process information.
d) All of the above

4. What is true about Data Visualization?
a) Data Visualization is used to communicate information clearly and efficiently to users by the usage of information graphics such as tables and charts.
b) Data Visualization helps users in analyzing a large amount of data in a simpler way.
c) Data Visualization makes complex data more accessible, understandable, and usable.
d) **All of the above**

5..…… are values for which arbitrarily fine intermediates exist.

a) Continuous data values
b) date data values
c) Discrete data values
d) Categorical ordered data values

6……type of variables is used to represent whole integers

a) Numerical continuous
b) Numerical discrete
c) Categorical ordered
d) Numerical integers

7. The combination of a set of position scales and their relative geometric arrangement is called a ……...

a) Cartesian system
b) Curved axes
c) Nonlinear axes
d) Coordinate system

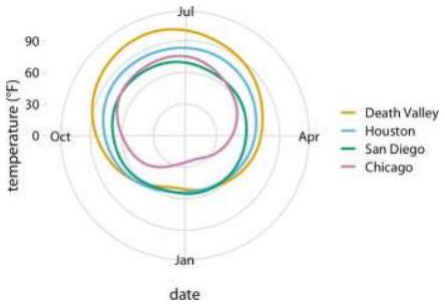
8. The most widely used coordinate system for data visualization is the ……..

a) Cartesian coordinates
b) Curved axes
c) Nonlinear axes
d) Polar coordinates

9. Which coordinate system can be useful for data of a periodic nature, such that data values at one end of the scale can be logically joined to data values at the other end.

a) Cartesian coordinates
b) Curved axes
c) Nonlinear axes
d) Polar coordinates

10. How data is represented in below figure?



a) Representation of Data on linear scales
b) Representation of Data on logarithmic scales
c) Representation of data on curved axes
d) Representation of data on Cartesian system

11. Which of the following is the use case for color in data visualization?

a) To distinguish groups of data from each other
b) To represent data values,
c) To highlight.
d) All of the above

12. What is the name of below given color scale?

a) Qualitative color scales
b) Sequential color scales
c) Accent color scales
d) None of the above

13. The ……scale is a monochromatic scale that varies from dark to light blue.

a) The ColorBrewer Blues
b) Accent color scales
c) ColorBrewer Dark2
d) Ggplot2

14. Sequential color scale is used when _____.

a) Colors are used to distinguish discrete items.

b) Colors are used to represent data values.

c) Colors are used to highlight.

d) Colors are used to represent descriptive data

15. Which color scale is used to represent quantitative data values such as income, temperaature or speed?

a) Sequential color scale
b) Accent color scale
c) Qaulitative color scale
d) None of the above

16. Accent color scale is used when _____.

a) Colors are used to distinguish discrete items.

b) Colors are used to represent data values.

c) Colors are used to highlight.

d) Colors are used to represent descriptive data

17. Qualitative color scale is used when _____.

a) Colors are used to distinguish discrete items.

b) Colors are used to represent data values.

c) Colors are used to highlight.

d) Colors are used to represent descriptive data

18. Which of the following is used to represent proportions?

a) Grouped bars
b) Dots
c) Histogram
d) Pie chart

19.Which is not used to represent distributions?

a) Stacked histogram
b) Sina plots
c) Strip charts
d) Stacked bars

20…… can be a useful alternative to violin plots and are often useful when visualizing very large numbers of distributions or changes in distributions over.

a) Ridgeline plots
b) Pie charts
c) Histogram
d) Density plot

21. ……. assume that every level of one grouping variable can be combined with every level of another grouping variable

a) Tree maps
b) Mosiac plots
c) Stacked bars
d) Heat maps

22._____ provide the most intuitive visualizations of a distribution
a) Histograms
b) Density plots
c) Cumulative densities
d) Both a and b

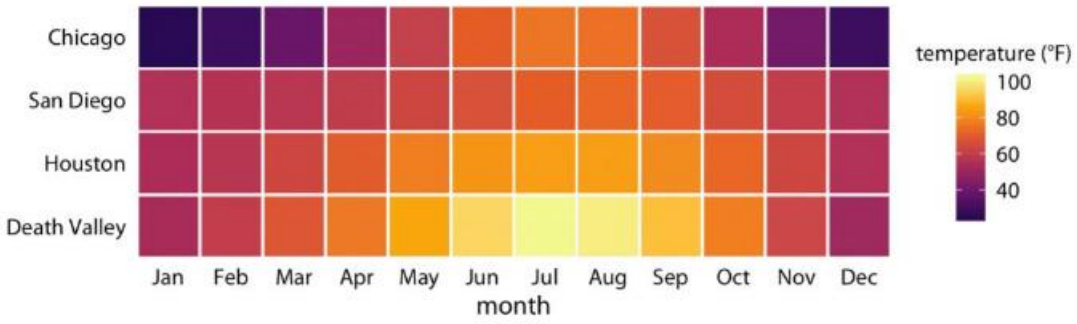
23. Proportions can be visualized as _____
a) Pie charts
b) Side-by-side bars
c) Stacked bars
d) All of the Above

24. Data can be visualized using?
a) Graphs
b) Charts
c) Maps
d) **All of the above**

25. Which one of the following is a most basic and commonly used technique for visualization?
a) **Line charts**
b) Scatter plots

c) Population pyramids
d) Area charts

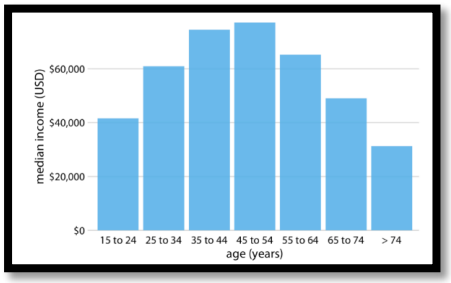
26. What is used in below image to represent data?



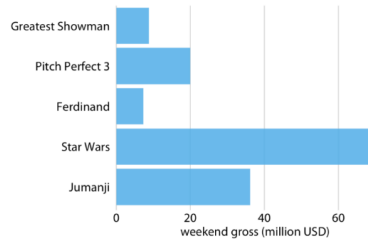
a) Bar graph
b) Histogram
c) Heat map
d) Polar coordinates

27.Which of the following graphical representation is correct?

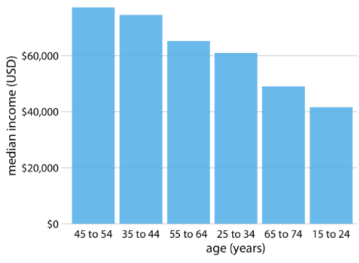
a)



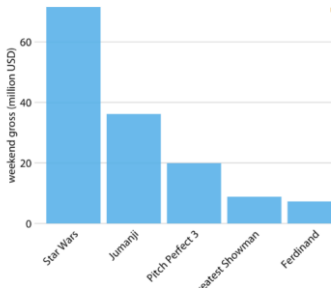
b)



c)



d)



28. The key element of data storytelling

a) Narrative

b) Visuals

c) Data

d) All of the Above

29…….....is what you do to understand the data and figure out what might be noteworthy or interesting to highlight to others

a) Explanatory analysis
b) **Exploratory analysis**
c) Data analysis
d) Data storytelling

30. ……is a methodology for communicating information, tailored to a specific audience, with a compelling narrative.

a) Data science
b) Artificial intelligence
c) Data storytelling
d) Data visualization

31. In data storytelling, internal and external stakeholders are ……..

a)Targeted audience

b) General audience

c) Specific audience

d) Data specific audience

32. which of the following is not benefit of data storytelling?

a) Providing a human touch to your data.
b) Offering value to your audience and industry.
c) Building credibility as an industry and topic thought leader.
d) To represent complex data values

33. In Storytelling, how will you communicate to your audience?

a) With live presentation

b) With a written document or email

c) With telephone call

d) Both a and b

Unit 2: Machine to Machine Communication

(Internet of Things) IoT MCQ

1. Term "the Internet of things" was coined by
a) Edward L. Schneider
b) Kevin Ashton
c) John H.
d) Charles Anthony

2. The huge numbers of devices connected to the Internet of Things have to communicate automatically, not via humans, what is this called?
a) Bot to Bot(B2B)
b) Machine to Machine(M2M)
c) InterCloud
d) Skynet

3. What does “Things” in IoT refers to?
a) General device
b) Information
c) IoT devices
d) Object

4. Interconnection of Internet and computing devices embedded in everyday objects, enabling them to send and receive data is called_____

a) Internet of Things
b) Network Interconnection
c) Object Determination
d) None of these

5. _____ is a computing concept that describes the idea of everyday physical objects being connected to the internet.

a) IOT (Internet of Things)
b) MQTT
c) COAP
d) SPI

6 _____ devices may support a number of interoperable communication protocols and communicate with other device and also with infrastructure.

a) Artificial Intelligence
b) Machine Learning
c) Internet of Things
d) None of above

7. Which one is not element of IOT?

a) Process
b) People
c) Security
d) Things

8. IIOT stands for

a) Information Internet of Things
b) Industrial Internet of Things
c) Inovative Internet of Things
d) None of above

9. Name of the IOT device which is first recognized?

a) Smart Watch
b) ATM
c) Radio
d) Video Game

10. _____ is used by IOT

a) Radio information technology
b) Satellite
c) Cable
d) Broadband

11. _____ refers to establish a proper connection between all the things of IOT.

a) Connectivity
b) Analyzing
c) Sensing
d) Active Engagement

12. IOT devices which have unique identities and can perform _____

a) Remote sensing

b) Actuating
c) Monitoring capabilities
d) All of the above

13. The sensed data communicated _____.
a) Cloud-based servers/storage.
b) I/O interfaces.
c) Internet connectivity.
d) None of the above

14. IOT devices are various types, for instance_____.
a) Wearable sensors.
b) Smart watches.
c) LED lights.
d) All of the above

15. Properties of IoT devices.
a) Sense
b) Send and receive data
c) Both a and b
d) None of above

16. IoT devices are ____
a) Standard
b) Non-standard
c) Both
d) None

17. _____ layer protocols determine how the data is physically sent over the network's physical layer or medium.
a) Application layer
b) Transport layer
c) Network layer
d) Link layer

18 _____ layer is responsible for sending of IP datagrams from the source network to the destination network.
a) Application layer
b) Transport layer
c) Network layer
d) Link layer

19. ___ layer perform the host addressing and packet routing.
a) Application layer
b) Transport layer
c) Network layer
d) Link layer

20. _____layer is responsible for error free, end to end delivery of data from source host to destination host.

a) Application layer
b) Transport layer

c) Network layer
d) Link layer

21. The _____ protocols that focus on process to process connections using ports

a) Application layer
b) Transport layer
c) Network layer
d) Link layer

22. 6LOWPAN stands for
a) 6 LOW Personal Area Network
b) IPv6 LOW Personal Area Network
c) IPv6 over Low power wireless personal area network
d) None of above

23. _____ is a collection of wired Ethernet standard for the link layer.
a) IEEE 802.3
b) IEEE 802.11
c) IEEE 802.16
d) IEEE 802.15.4

24_____ is a collection of WLAN communication standards.
a) IEEE 802.3
b) IEEE 802.11
c) IEEE 802.16
d) IEEE 802.15.4

25. ____ is a collection of wireless broadband standards (WiMax).
a) IEEE 802.3
b) IEEE 802.11
c) IEEE 802.16
d) IEEE 802.15.4

26 _____ is a collection of standards for LR-WPANs.
a) IEEE 802.3
b) IEEE 802.11
c) IEEE 802.16
d) IEEE 802.15.4

27. LR-WPANs standards from basis of specifications for high level communication protocol such as ___.
a) Zigbee
b) Allsean
c) Tyrell
d) Microsoft's Azure

28. _____ includes GSM and CDMA.
a) 2G
b) 3G
c) 4G

d) None of above

29. _____include UMTS and CDMA2000.
a) 2G
b) 3G
c) 4G
d) None of above

30 _____include LTE.
a) 2G
b) 3G
c) 4G
d) None of above

31. 802.3 is the standard for 10BASE5 Ethernet that uses _____ cable as shared medium.
a) Twisted pair cable
b) Coaxial cable
c) Fiber optic cable
d) None of the above

32. IEEE 802.11 standards provide data rates _____
a) 10 Gbit/s.
b) 1 Gbit/s
c) 1 Mb/s to up to 6.75 Gb/s
d) 250 Kb/s

33. _____ is useful for time-sensitive application that have very small data units to exchange and do not want the overhead of connection setup.
a) TCP
b) UDP
c) Transport layer
d) None of the above.

35. _____ protocol uses Universal Resource Identifiers (URIs) to identify HTTP resources.
a) HTTP
b) COAP
c) WebSocket
d) MQTT

37. Which one out of these is not a data link layer technology?
a) Bluetooth
b) UART
c) Wi-Fi
d) HTTP

38. What is size of the IPv6 Address?
a) 32 bits
b) 64 bits
c) 128 bits
d) 256 bits

39. MQTT stands for _____
a) MQ Telemetry Things
b) MQ Transport Telemetry
c) MQ Transport Things
d) MQ Telemetry Transport

40. MQTT is _____ protocol.
a) Machine to Machine
b) Internet of Things
c) Machine to Machine and Internet of Things
d) Machine Things

41. Which protocol is lightweight?
a) **MQTT**
b) HTTP
c) CoAP
d) SPI
Ans: A

42. _____ is an open application layer protocol for business messaging.

a) **AMQP**
b) DSS
c) MQTT
d) XMPP

43. XMPP is used for streaming which type of elements?
a) XPL
b) **XML**
c) XHL
d) MPL

44. CoAP uses_____ model
a) Request-Response
b) Publish-Subscriber
c) Push-Pull
d) Exclusive Pair

45. Which protocol is used to link all the devices in the IoT?
a) TCP/IP
b) Network
c) UDP
d) HTTP

46. TCP and UDP are called?
a) Application protocols
b) Session protocols
c) Transport protocols
d) Network protocols

47. _____ is a data-centric middleware standard for device-to-device and machine-to-machine communication.

a) Data Distribution Serviced (DDS)
b) Advance Message Queuing Protocol (AMQP)
c) Extensible Messaging and Presence Protocol (XMPP)
d) Message Queue Telemetry Transport (MQTT)

48. _____ is a bi-directional, fully duplex communication model that uses a persistent connection between client and server.

a) Request-Response
b) Publish-Subscriber
c) Push-Pull
d) **Exclusive Pair**

49. ___ is a stateful communication model and server is aware of all open connection.

a) Request-Response
b) Publish-Subscriber
c) Push-Pull
d) **Exclusive Pair**

51. REST APIs follow _____communication model.

a) Request-Response
b) Publish-Subscriber
c) Push-Pull
d) Exclusive Pair

51. Web Socket APIs follow _____ communication model

e) Request-Response
f) Publish-Subscriber
g) Push-Pull
h) **Exclusive Pair**

52 ____ sensors is used for automatic door controls, automatic parking system, automated sinks, automated toilet flushers, hand dryers.

a) Smoke Sensor
b) Temperature Sensor
c) IR Sensor
d) Motion Sensor

53 ____ sensor measure heat emitted by objects.

a) Smoke Sensor
b) Temperature Sensor
c) IR Sensor
d) Proximity Sensor

54. _____ detects the presence or absence of a nearby object without any physical contact.

a) Image sensor
b) Accelerometer sensors

c) IR sensor
d) Proximity sensors

55. Accelerometer sensors are used in_____
a) Smartphones
b) Aircrafts
c) **Both a and b**
d) None of above

56. Image sensors are found in_____
a) Cameras
b) Night-vision equipment
c) Radars
d) All of above

57. Gas sensors are used to detect _____gases.
a) Toxic
b) Natural
c) Oxygen
d) Hydrogen

58. Devices that transforms electrical signals into physical movements
A. Sensors
B. Actuators
C. Switches
D. Display

59. _____allows rotor to continuously rotate in one direction.
a) DC Motor
b) Linear Actuator
c) Stepper Motor
d) Servo Motor

60. Linear actuators are used in_____
a) Robotics
b) Turbines
c) Compressor
d) All of above

61. Solenoid is a specially designed _____
a) Actuator
b) Machine
c) Electromagnet
d) none of above

62 ____ is used latching, locking, triggering.
a) **Solenoid**
b) Relay
c) Linear Actuator
d) Servo motors

Introduction to 5G network MCQ

1. The _____provide the connectivity for all components and physically separated functions within the NGN
a) Transport functions
b) Access network functions
c) Gateway functions
d) Resource and admission control functions (RACF)

2. The _____ take care of end-user's access to the network as well as Collecting and aggregating the traffic coming from these accesses towards the
Core network.
a) Transport functions
b) Access network functions
c) Gateway functions
d) Resource and admission control functions (RACF)

3. _____ functions also perform QoS control mechanisms dealing directly with user traffic, including buffer management, queuing and scheduling, packet filtering, traffic classification, marking, policing, and shaping.
a) Transport functions
b) Access network functions
c) Gateway functions
d) Resource and admission control functions (RACF)

4. The _____ provide capabilities to interwork with end-user functions and/or other networks, including other types of NGN and many existing networks, such as the PSTN/ISDN, the public Internet, and so forth.
a. Transport functions
b. Access network functions
c. Gateway functions
d. Resource and admission control functions (RACF)

5._____is arbitrator between service control function and transport function.
a. Resource and admission control function
b. Access network function
c. Gateway function
d. Service control function

6._____receive content from the Application support function and service support function.
a. Access network function
b. Gateway function
c. Service control function
d. Content delivery function

7._____is used for dynamic provision of IP addresses and user equipment configuration parameters.
a. Network attachment control function
b. Access network functions
c. Gateway function
d. Service control function

8. Media Gateway controller known as_____.
A. Soft switches
B. Call controller
C. Wireless call server or call agent
D. All of above

9. Media Gateway located in_____ layer of NGN.
a. Access Layer
b. Transport Layer
c. Control Layer
d. Service Layer

10._____is responsible for functions such as media conversion circuit to packet, packet to circuit.
a. Access Gateway
b. Trunk Media Gateway
c. Signalling Gateway
d. Border Gateway

11._____provides the signalling interface between the VoIP network and the PSTN signalling network.
a. Access Gateway
b. Trunk Media Gateway
c. Signalling Gateway
d. Border Gateway

12._____is deployed at the edge and core of a service provider's network to control signalling and media streams as they enter and exit the network.
a. Access Gateway
b. Trunk Media Gateway
c. Signalling Gateway
d. Border Gateway

13. _____is any IP-IP network border such as between a service provider and a customer or between a service provider and an enterprise network.
a. Edge
b. Core
c. Access network
d. IP core network

14. _____is any IP-IP network border such as between two service providers.
a. Edge
b. Core
c. Access network
d. IP core network

15. The primary function of the _____is to provide routing and transport of IP packets.
a. Access network
b. IP core network
c. Media Server
d. Application Server

16._____functions provide the capabilities to manage the NGN in order to provide NGN services with the expected quality, security, and reliability.
a. Network attachment control function
b. Management functions
c. Gateway function
d. Service control function

17._____is characteristic of 5G.
a. Broadband
b. Low latency
c. High Data Transfer speed
d. All of above

18. NGN is Layered Architecture having _____ layers.
a.1
b.2
c.3
d.4

19. NGN Architecture supports_____ reference points.
a.1
b.2
c.3
d.4

20. _____ include resource and admission control functions, network attachment control functions as well as mobility management and control functions.
a. Transport functions
b. Transport control functions
c. Access network functions
d. Gateway functions

21. _____provide endorsement of the user, auto-discovery of user equipment capabilities, and other parameters.
a. Network attachment control functions
b. Access network functions
c. Transport functions
d. Gateway functions

22._____ manages and sets standards with regard to the spectrum use.
a. FCC
b. IEEE
c. ETSI
d. WPC

23._____ a leading standards organization that publishes standards that are adopted across industries.
a. FCC
b. IEEE
c. ETSI
d. WPC

24. _____ another standards organization that has contributed many worldwide standards.
a. FCC
b. IEEE
c. ETSI
d. WPC

25._____ With the FCC, defines how WLANs should operate from a regulatory perspective, such as operating frequencies, antenna gain, and transmission power.
a. FCC
b. IEEE
c. ETSI
d. ITU-R

26._____ Provides information resources related to WLANs with regard to industry trends and usage.
a. FCC
b. IEEE
c. ETSI
d. WLANA

27. _____ is the National Radio Regulatory Authority responsible for frequency Spectrum Management, including licensing and catering to the needs of all wireless users (Government and Private) in India.
a. FCC
b. IEEE
c. ETSI
d. WPC

28. _____ mobile wireless communication network was analog and used for voice calls only.
a. 4G
b. 2G
c. 3G
d. 1G

29. _____is a digital technology that supports text messaging.
a. 4G
b. 2G
c. 3G
d.1G

30. _____mobile technology provided a higher data transmission rate, increased capacity, and provide multimedia support.
a. 4G
b. 3G
c. 5G
d. 1G

31. _____integrates 3G with fixed internet to support wireless mobile internet, which is an evolution to mobile technology, and it overcomes the limitations of 3G.
a. 4G
b. 3G
c. 5G
d.1G

32. _____is going to be a new revolution in the mobile market which has changed the means to use cell phones within very high bandwidth.
a. 4G
b. 5G
c. 3G
d. 1G

33. _____receive a packet that is not labelled yet, insert a label (stack) in front of the packet, and send it on a data link.
a. Ingress LSRs
b. Egress LSRs
c. Intermediate LSRs
d. None of the above

34. _____receive labelled packets, remove the label(s), and send them on a data link.
a. Ingress LSRs
b. Egress LSRs
c. Intermediate LSRs
d. None of the above

35. MPLS stands for_____
a. Multi-protocol label switching
b. Multi-protocol layered switching
c. Multi-protocol level switching
d. None of the above

36. _____receive an incoming labeled packet, perform an operation on it, switch the packet, and send the packet on the correct data link.
a. Ingress LSRs
b Egress LSRs
c. Intermediate LSRs
d. None of the above

37. What is the purpose of End-to-end QoS in NGN?
a. To control the quality of service on a per-application basis
b. To control the quality of service on a per-network basis
c. To provide high quality broadband communication
d. To limit the number of users on the network

38. What did 2G mobile networks define?
a) The transition to broadband access
b) The support of voice and text only
c) The use of kilobits-per-second data rates
d) The connection of machines, objects, and devices

39. Which of the following is a characteristic of 5G networks?
a) Low data transfer speed
b) High latency
c) Limited device capacity
d) Massive network capacity

40. What is the theoretical download speed of 5G networks?
a) 1Gbps
b) 5Gbps
c) 10-20Gbps
d) 100Gbps

41. What is the Next Generation Network (NGN)?
a. A circuit-switched network
b. A packet-based network
c. A satellite-based network
d. A fiber-optic network

42. What does NGN support in terms of service delivery?
a. Voice only services
b. Data only services
c. Multiple converged services
d. Broadcast-only services

43. What is the purpose of End-to-end QoS in NGN?
a. To control the quality of service on a per-application basis.
b. To control the quality of service on a per-network basis.
c. To provide high quality broadband communication.
d. To limit the number of users on the network.

44. What is the transport technology used in NGN?
a) MPLS
b) 3G WCDMA
c) FTTH
d) xDSL

45. What are the functions of the transport stratum?
a. Transport functions and access network functions
b. Transport functions and transport control functions
c. Access network functions and transport control functions
d. None of the above

46. What is the primary function of the IP core network in the NGN architecture?
a) To provide routing and transport of IP packets
b) To terminate SS7 links and provide MTP Level 1 and Level 2 functionality
c) To support the line side interface to the core IP network for use by phones and devices
d) To provide call logic and call control functions

47. Which of the following radio bands requires a license to use?
a) Short wave
b) Medium wave
c) Cellular phone
d) Industrial, Scientific, Medical

48. Which of the following is not a disadvantage of the 1G mobile communication system?
a) Poor voice quality due to interference
b) Poor battery life
c) Limited number of users and cell coverage
d) High security and difficulty in decoding calls

49. Which technology became the base standard for further development in wireless standards after the introduction of the 2G mobile communication system?
a) Advanced Mobile Phone System (AMPS)
b) Nordic Mobile Phone System (NMTS)
c) Total Access Communication System (TACS)
d) Global System for Mobile communication (GSM)

50. Which mobile communication system supports video calling for the first time on mobile devices?
a) 2G system
b) CDMA system
c) 3G system
d) None of the above

51. Which mobile communication system has limited features on mobile devices and limited hardware capability?
a) 2G system
b) CDMA system
c) 3G system
d) None of the above

52. Which of the following is a disadvantage of the 3G system?
a) Lower data rate
b) Limited number of users and hardware capability
c) Higher bandwidth requirements to support higher data rate
d) Limited mobility

53. Which wireless technology is introduced in 4G system to enhance data rate and network performance?
a) LTE
b) Wi-Fi
c) Bluetooth
d) 3G

54. What is a key feature of 5G technology?
a) Reduced latency in milliseconds
b) Compatibility with previous versions
c) Higher data rate up to 1Gbps
d) Complex modulation schemes

55. What is a disadvantage of the 4G system?
a) Wide deployment and upgrade is time consuming
b) Higher security and reliable network
c) Ultra-fast mobile internet up to 10Gbps
d) Expensive hardware and infrastructure

UNIT 3: Blockchain Technology MCQ

1. The blockchain technology is defined in the year_____
a) 1991
b) 1997
c) 1989
d) 1982

2. The blockchain technology was defined in 1991 by the research scientist.
a) Stuart Haber and W. Scott Stornetta
b) Philip Moynagh
c) Prof. Brian MacCraith
d) None of the above

3. Block chain system is developed using the concept of _____.
a) Cryptographically Secured chain
b) Demanding
c) Secure
d) Popular

4. In the year 2000, _____published theory of cryptographic secured chains, plus ideas for implementation.
a) Stefan Konst
b) Stuart Haber and W. Scott Stornetta
c) Philip Moynagh
d) Prof. Brian MacCraith

5. In the year 2008, _____conceptualized the concept of "Distributed lockchain" called as "A Peer to Peer Electronic Cash System".
a) Satoshi Nakamoto
b) Stuart Haber and W. Scott Stornetta
c) Philip Moynagh
d) Prof. Brian MacCraith

6. Blockchain is a shared, _____, and open ledger of transactions.
a) Decentralized
b) Demanding
c) Popular
d) Secure

7.Blockchain_____ is an append-only database and cannot be changed or altered.
a) ledger database
b) relational database
c) responsive database
d) all of the above

8. Blockchain is another layer on top of the Internet and can coexist with other
a) Internet technologies
b) Computer technology
c) Service technology
d) all of the above

9.The _____has previous hash value set to 0 to indicate no data was processed before the Genesis Block.
a) Genesis Block
b) Hash of Block
c) Pointer of block
d) all of the above

10. Blockchain is example of_____.
a) Decentralized distributed system
b) Centralized distributed system
c) Both a and b
d) None of the above

11. Every node on the blockchain network has an _____of the blockchain.
a) Identical copy
b) Different copy
c) Parallel copy
d) Opposite copy

12. A decentralized distributed system is one where there is "master" node.
a) True
b) False

13. A centralized system has a centralized control with all _____and are easy to design, maintain, enforce trust, and administrate.
a) administrative rights
b) Network rights
c) Virtual rights
d) None of the above

14. A centralized system has a centralized control with all administrative rights and are _____.
a) Easy to design and enforce trust
b) Administrate and maintain.
c) Enforce trust, and administrate
d) All of the above

15. A centralized system suffer from many intrinsic limitations like_____
a) less stable
b) less secured.
c) scalability is difficult.
d) All of the above

16. Which block chain system is difficult to design and maintain, govern and impose to trust?
a) Centralized
b) Decentralized
c) Both a and b
d) None of the above

17.Advantages of decentralized system_____
a) More stable
b) Attack resistant
c) equal right to all nodes
d) All of the above

18. The blockchain technology is made of a _____architecture
a) Layered architecture
b) Chain architecture
c) Horizontal architecture
d) None of the above

19. In the application layer, you can find_____.
a) smart contracts
b) decentralized applications (DApps)
c) user interfaces (UIs) and chain code
d)All of the above

20. Application Layer is_____ layer of the block chain.
a) 2
b) 4
c) 3
d) 5

21._____ consists of services and application programming interfaces (APIs), client-side programming constructs, scripting, development frameworks that offer other apps with access to the blockchain network.
a) Application Layer
b) Execution Layer
c) Semantic Layer
d) Propagation Layer

22. Application Layer acts as the _____tool of the blockchain.
a) Front end
b) Back end
c) Database
d) Network

23. The _____execute the instructions of application in the Application Layer on all the nodes in a blockchain network.
a) Execution Layer
b) Application Layer
c) Semantic Layer
d) Propagation Layer

24. Semantic Layer also called as _____ of blockchain layer.
a) Logical Layer
b) Virtual Layer
c) Physical Layer
d) Basic Layer

25. Linking of block need to be defined on _____
a) Execution Layer
b) Application Layer
c) Semantic Layer
d) Propagation Layer

26.A _____ is used in the peer-to-peer communications between the nodes that allow them to discover each other and get synchronized with another node in a network.
a) Execution Layer
b) Application Layer
c) Semantic Layer
d) Propagation Layer

27. Which layer is responsible to make sure that all the nodes must get approve on a common state of the shared ledger.
a) Execution Layer
b) Application Layer
c) Semantic Layer
d) Consensus Layer

28. Consensus layer also deals with the_____ of the blockchain.
a) Safety and security
b) Sending and receiving
c) Uploading and downloading
d) All of the above

29. Which of these is not a limitation of centralized systems?
a) Trust issue
b) Security issue
c) Cost and time factor of transaction
d) Can scale up vertically after a certain limit.

30. What are advantages of decentralized systems over centralized systems?
a) Elimination of intermediaries trust issue
b) Easier and genuine verification of transactions
c) Increased security with lower cost
d) All of the above

31.What does P2P stand for?
a) Password to Password
b) Peer to Peer
c) Product to Product
d) Private Key to Public Key

32. What is a blockchain?
a) A Currency
b) A centralized ledger
c) A type of cryptocurrency
d) A distributed ledger on a peer-to-peer network

33.Who first proposed a blockchain-like protocol?
a. David Chaum
b. Dave Bayer
c. W. Scott Stornetta
d. Stephan const

34. Blockchain is a peer-to-peer _____ distributed ledger technology that makes the records of any digital asset transparent and unchangeable.
a) Secure
b) Popular
c) Demanding
d) Decentralized

35. What is a node?
a) A Blockchain
b) An exchange
c) A type of cryptocurrency
d) A computer on Blockchain network

36.Who created Bitcoin?
a) Elon Musk
b) Warren Buffett
c) Satoshi Nakamoto
d) Mark Zuckerberg

37. A blockchain is a type of?
a) Table
b) View
c) Database
d) Object

38.What are the benefits of blockchain technology?
a) Security and Speed
b) No hidden fees
c) Fraud control & Access levels
d) All of the above

39.What is a dApp?
a) A type of Cryptocurrency
b) A condiment
c) A type of blockchain
d) A decentralized application

40.What is a genesis block?
a) The first block of a Blockchain
b) A famous block that hardcoded a hash of the Book of Genesis onto the blockchain
c) The first block after each block having
d) The second transaction of a Blockchain