



INTERNET OF
THINGS
FOUNDATION



CLOUD
CREDENTIAL
COUNCIL

Mock Exam

Version 1.0.0

September 2017

Q1. Which protocol is used by Internet to link devices all over the world?

- a) TCP/IP
- b) HTTP
- c) DNS
- d) FTP

Q2. Which of the following statements is true?

- a) IoT is the subset of M2M and IoE.
- b) IoE is a superset of IoT and M2M is a subset of IoT.
- c) M2M is a superset of IoT and IoE is a subset of M2M.
- d) IoE is the subset of IoT and M2M.

Q3. Which of the following represents the full form of IoE?

- a) Internet of Everyday
- b) Internet of Everything
- c) Institute of Education
- d) Institute of Environment

Q4. Which of the following statements illustrate the advantage of IoT over M2M?

Statement 1: The cloud-based architecture makes IoT more scalable over M2M.

Statement 2: IoT doesn't need incremental hard-wired connections.

Statement 3: IoT doesn't need SIM card installations.

Statement 4: IoT emphasis on the usage of proprietary device connections while M2M on the use of standard device connections.

- a) Statement 1, Statement 3 and Statement 4
- b) Statement 2, Statement 3, and Statement 4
- c) Statement 1, Statement 2, and Statement 3
- d) Statement 1, Statement 2, and Statement 4

Q5. Which option expresses the sequential stages of the CPS environment lifecycle?

- a) Sense, Action, Effect, Control
- b) Action, Sense, Effect, Control
- c) Sense, Control, Action, Effect
- d) Action, Effect, Sense, Control

Q6. Which of the following two categories will see maximum growth in global corporate profits due to IoT?

- a) Asset utilization and customer experience
- b) Employee productivity and innovation
- c) Asset utilization and innovation
- d) Customer experience and innovation

Q7. -----and -----have contributed towards the growth of IoT.

- a) Cloud computing and cheap processing
- b) Legacy equipment and data analytics
- c) New business models and big data
- d) Cheap sensors and security

Q8. Which of the following options contribute to the monetization by cost reduction?

- a) Price differently
- b) Improve efficiency
- c) Increase margin
- d) Identify new markets

Q9. Which of the following options is the most basic monetization model of IoT?

- a) Service Revenue
- b) Data Revenue
- c) Ecosystem Building
- d) Hardware Premium

Q10. Which of the following options reflects the stages of Maturity model of IIoT?

- a) Conventional, Smart, Software defined, Instrumented, Autonomous
- b) Conventional, Software defined, Instrumented, Smart, Autonomous
- c) Conventional, Autonomous, Smart, Instrumented, Software defined
- d) Conventional, Instrumented, Software defined, Smart, Autonomous

Q11. Efficient, intelligent operations, a key way to create new business opportunities, will:

- a) Create new value streams for customers, introduce processes that speed time to market, compare market performance, and respond rapidly to customer needs and requirements.
- b) Allow organizations to quickly capture more data about their operations and products required to create new income generating avenues, improve efficiency, and enhance customer loyalty.
- c) Allow companies to diversify the revenue streams.
- d) Allow access to information from independent end node and enable organizations to make precise decisions on pricing, logistics, sales, support deployment, etc.

Q12. Which of the following options represents the basic building blocks of IoT?

- a) Sensors, DNS servers, Gateways, Applications
- b) APIs, Gateways, DNS servers, Sensors
- c) Sensors, Processors, Gateways, Applications
- d) LAN, Processors, DNS servers, Applications

Q13. All of the following are generic factors which determine the suitability of sensors, except:

- a) Resolution
- b) Bandwidth
- c) Noise
- d) Accuracy

Q14. Which of the following options provides intelligence to data?

- a) Sensors
- b) Gateways
- c) Processors
- d) Applications

Q15. Which of the following is an IoT application under logistics?

- a) Smart irrigation
- b) Weather monitoring
- c) Smart parking
- d) Fleet tracking

Q16. Which of the following options is built in IPv6 with the intent of providing security, but absent in IPv4?

- a) Transmission Control Protocol (TCP)
- b) Internet Engineering Task Force (IETF)
- c) Dynamic Host Configuration Protocol (DHCP)
- d) Internet Protocol security (IPsec)

Q17. Which of the following protocols uses “Routing Layer” for transport?

- a) TCP/IP Protocol Stack
- b) Z-Wave
- c) ZigBee
- d) 6LoWPAN

Q18. The network connection established by ZigBee is:

- a) router, coordinator, processor
- b) coordinator, router, end device
- c) end device, coordinator, processor
- d) end device, router, processor

Q19. Which of the following options needs a large network size?

- a) Smart Office
- b) Smart City
- c) Smart Transportation
- d) Smart Retail

Q20. Which of the following options is a major challenge for Bluetooth devices?

- a) High power consumption
- b) Less speed
- c) Low transfer rate
- d) Interoperability

Q21. Which of the following options provides expansion of SMICT?

- a) Smart, Media, Achievable, Computing, Things in the Internet
- b) Social, Mobile, Analytics, Cloud, Technology
- c) Social, Mobile, Analytics, Cloud, Things in the Internet
- d) Smart, Media, Analytics, Computing, Techniques

Q22. Which of the following options is emerging as the control unit of IoT?

- a) Smart watches
- b) Smartphones
- c) Laptops
- d) Tablets

Q23. Which of the following is a characteristic of big data?

- a) Volatility
- b) Volume
- c) Structured
- d) Complexity

Q24. Which of the following is a big data analytics application?

- a) Middleware
- b) Data warehouse
- c) Dashboards
- d) Extract Transform Load

Q25. The IoT requirement of availability of applications poses which cloud challenge?

- a) Cloud security and privacy
- b) Quality of service assurance
- c) Support for application elasticity
- d) Cloud reliability

Q26. Which of the following techniques is used to perform data exploration?

- a) Creating graphs
- b) Statistical modeling
- c) Pre-processing and integration of data
- d) Information discovery

Q27. All of the following options contribute in creating better business with lower marketing expenses and improved customer response, except:

- a) Advances in data analytics
- b) Huge data created by social media apps and IoT wearables
- c) Automation and robotics
- d) Stringent cyber laws

Q28. Which of the following options is an attribute of velocity characteristic of big data?

- a) Variety
- b) Volume
- c) Time-value
- d) Volatility

Q29. Which of the following is a key challenge related to IoT-related security?

- a) Conventional safeguards less effective
- b) Size of sensors
- c) Big data analytics platform
- d) Compliance requirements are not fulfilled

Q30. Insecure Web interfaces can result from which of the following option?

- a) Account enumeration
- b) Insecure network services
- c) Lack of privacy
- d) Insecure cloud interface

Q31. Which of the following results in insufficient authorization?

- a) Account enumeration
- b) Account lockout
- c) Cross-site scripting
- d) Lack of two-factor authentication

Q32. What is the function of Secure Socket Layer (SSL) and Transport Layer Security (TLS)?

- a) They ensure two-factor authentication.
- b) They provide communications security over a computer network.
- c) They ensure only necessary ports are exposed and available.
- d) They ensure that services are not vulnerable to buffer overflow and fuzzing attacks.

Q33. All of the following measures ensure a secure cloud interface, except:

- a) Default password and default usernames should be changed during the initial setup.
- b) Ensure credentials are not exposed over the Internet.
- c) Implement two or more factors authentication where possible.
- d) Ensure only authorized individuals have access to the collected personal information.

Q34. All of the following measures are required for securing software/firmware, except:

- a) Ensuring data storage medium cannot be easily removed
- b) Ensuring the update file is encrypted using accepted encryption methods
- c) Ensuring the updated file does not contain sensitive data
- d) Ensuring the device has the ability to update

Q35. As per HP review of security loop holes in the IoT devices, which of the following is at maximum risk?

- a) Web interface
- b) Encryption
- c) Personal information
- d) Privacy

Q36. Which of the following measures is required to secure IoT?

- a) Not using a risk assessment methodology
- b) Creating interoperability between the devices and technologies
- c) Using plain text data in critical systems
- d) Examining Established Programs

Q37. Which of the following device helps in keeping track of calories burnt?

- a) Smart bracelet
- b) Smart band
- c) Smart meter
- d) Smart thermostat

Q38. All of the following options add to the advantage of IoT in healthcare, except:

- a) Decreased medical costs
- b) Improved outcomes of treatment
- c) Enhanced management of drugs
- d) Risks of data breaches

Q39. All of the following functions are performed by smart parking, except:

- a) Communicates information about the tyres of the vehicle.
- b) Senses vehicle occupancy in real-time.
- c) Optimizes parking space usage.
- d) Guides commuters to available parking.

Q40. What was the first recognized IoT device?

- a) Radio
- b) Car
- c) Fridge
- d) Coke vending machine



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Mock Exam Answers

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Q1. Correct Answer: a) TCP/IP

Rationale

Transfer Control Protocol/Internet Protocol is a set of rules that governs communication among all computers which are connected to the Internet.

Q2. Correct Answer: b) IoE is a superset of IoT and M2M is a subset of IoT.

Rationale

IoE is considered a superset of IoT. M2M communication is considered a subset of IoT.

Q3. Correct Answer: b) Internet of Everything

Rationale

IoE is the frequently used term in relevance to IoT and it stands for Internet of Everything.

Q4. Correct Answer: c) Statement 1, Statement 2, and Statement 3

Rationale

The cloud-based architecture makes IoT more scalable, removing the need for incremental hard-wired connections and Subscriber Identity Module (SIM) card installations.

Q5. Correct Answer: c) Sense, Control, Action, Effect

Rationale

The four main stages of CPS environment lifecycle are sense, control, action, and effect.

Q6. Correct Answer: d) Customer experience and innovation

Rationale

The areas of customer experience and innovation will see maximum growth in global corporate profits.

Q7. Correct Answer: a) Cloud computing and cheap processing

Rationale

Cloud computing and cheap processing are key drivers which have contributed towards the growth of IoT.

Q8. Correct Answer: b) Improve efficiency

Rationale

Improve efficiency is a strategy used to contribute to the monetization by cost reduction.

Q9. Correct Answer:

d) Hardware Premium

Rationale

Hardware Premium is the simplest model where organizations charge a price-premium for the product's connected features.

Q10. Correct Answer: d) Conventional, Instrumented, Software defined, Smart, Autonomous.

Rationale

The correct sequence defining Maturity model of IIoT is Conventional, Instrumented, Software defined, Smart, and Autonomous.

Q11. Correct Answer: d) Allow access to information from independent end node and enable organizations to make precise decisions on pricing, logistics, sales, support deployment, etc.

Rationale

Efficient, intelligent operations will allow access to information from independent end nodes, similar to today's smart grid that already supplies to utility companies, will enable organizations to make precise decisions on pricing, logistics, sales, support deployment, etc.

Q12. Correct Answer: c) Sensors, Processors, Gateways. Applications

Rationale

All of the options mentioned are required for the implementation of IoT, but only sensors, processors, gateways, and applications come under the basic building blocks.

Q13. Correct Answer: b) Bandwidth

Rationale

Resolution, noise, accuracy, repeatability, range, and selectivity are the key factors which determine the suitability of sensors.

Q14. Correct Answer: c) Processors

Rationale

The raw data from sensors is further filtered and processed by processors, thereby, resulting in meaningful information.

Q15. Correct Answer: d) Fleet tracking

Rationale

IoT will allow automated fleet management solutions to connect with vehicles and monitor vehicles' movement.

Q16. Correct Answer: d) Internet Protocol security (IPsec)

Rationale

IPsec is built into the IPv6 protocol, usable with a suitable key infrastructure. IPv4 was not designed with security in mind.

Q17. Correct Answer: b) Z-Wave

Rationale

Z-Wave uses "Routing Layer" for transfer.

Q18. Correct Answer: b) coordinator, router, end device

Rationale

A ZigBee network is made up of a coordinator (C) which is required to establish a network connection. C establishes PAN, router (R) which provides the network connection to the end devices (E) which are the IoT devices connected to the network.

Q19. Correct Answer: c) Smart Transportation

Rationale

Smart transportation will require a large network size, including 3G, 4G, satellite communication, etc.

Q20. Correct Answer: d) Interoperability

Rationale

Interoperability is a major challenge in Bluetooth devices.

Q21. Correct Answer: c) Social, Mobile, Analytics, Cloud, Things in the Internet

Rationale

The correct expansion for SMACT is Social, Mobile, Analytics, Cloud, Things in the Internet.

Q22. Correct Answer: b) Smartphones

Rationale

Smartphones are becoming the control unit for IoT with the advancement in wearable, connected IoT devices. Equipped with numerous sensors and apps, the smartphone gathers a plethora of information about its user's context and is able to interact easily with a range of other devices.

Q23. Correct Answer: b) Volume

Rationale

Volume, velocity, and variety are the three main characteristics of big data.

Q24. Correct Answer: c) Dashboards

Rationale

Dashboards is the big data analytics application.

Q25. Correct Answer: d) Cloud reliability

Rationale

The IoT requirement of availability of applications results in cloud challenge of cloud reliability.

Q26. Correct Answer: b) Statistical modeling

Rationale

Data exploration is performed with statistical modeling that results in summaries, queries, and reports.

Q27. Correct Answer: d) Stringent cyber laws

Rationale

Advances in data analytics, huge data created by social media apps/IoT wearables, and automation/robotics will contribute immensely to the creation of better business.

Q28. Correct Answer: c) Time-value

Rationale

Time value is an attribute of velocity.

Q29. Correct Answer: a) Conventional safeguards less effective

Rationale

The three key challenges to IoT-related security include less effective conventional safeguards, compromised autonomous machines can cause immense damage, and privacy can be compromised.

Q30. Correct Answer: a) Account enumeration

Rationale

Account enumeration is responsible for insecure Web interfaces.

Q31. Correct Answer: d) Lack of two factor-authentication

Rationale

Lack of two-factor authentication is a major source of insufficient authorization.

Q32. Correct Answer: b) They provide communications security over a computer network.

Rationale

SSL and TLS are cryptographic protocols that provide communications security over a computer network.

Q33. Correct Answer: d) Ensure only authorized individuals have access to the collected personal information.

Rationale

Ensuring only authorized individuals have access to the collected personal information will help in strengthening the privacy of users.

Q34. Correct Answer: a) Ensuring data storage medium cannot be easily removed

Rationale

Ensuring the update file is encrypted using accepted encryption methods, ensuring the updated file does not contain sensitive data, and ensuring the updated file does not contain sensitive data help in securing software/firmware.

Q35. Correct Answer: c) Personal information

Rationale

HP reviewed 10 most popular IoT devices and discovered that 90% of devices collected some piece of personal information which can be compromised.

Q36. Correct Answer: d) Examining Established Programs

Rationale

Examining established programs involves learning from the established programs and apply the lessons to a hyper-connected world.

Q37. Correct Answer: b) Smart band

Rationale

Smart band allows one to keep a track of the calories burnt.

Q38. Correct Answer: d) Risks of data breaches

Rationale

Medical data can be breached, putting the lives into risk.

Q39. Correct Answer: a) Communicates information about the tyres of the vehicle.

Rationale

Smart parking involves sensing information about vehicle occupancy in real time, optimizing parking space usage, guiding commuters to available parking, etc.

Q40. Correct Answer: d) Coke vending machine

Rationale

The first IoT device was a Coke vending machine at Carnegie Mellon Computer Science Department.