

INFORMATION AND COMMUNICATION TECHNOLOGY - I

Grade 13

2 HOU

Index No.

1. Find the correct answer for none volatile memory

- (1) SRAM (2) Cache memory (3) ROM (4) Register (5) Bus

2. Consider the following statements,

A – Data validation is a process of determining the accuracy of data.

B – Presence check is checked whether the data entry field is blank or not

C – Data type check whether the data is in allowed range

Which of the following statements are correct?

- (1) A (2) A and B (3) B and C (4) A and C (5) A, B and C

3. Find the correct answer.

- (1) Plagiarism is illegal copying of software
(2) Piracy is the illegal distribution or use of software
(3) Copyright is not protect all right of the original works
(4) Licensed software is not having copyright protection
(5) None of the above

4. Which of the following is not a data input mode?

- (1) Direct input (2) Indirect input (3) Remote input
(4) ~~Office line~~ data input (5) Online data input
offline

5. Which of the following statement is shows correct examples for the hardware components?

- (1) input device-barcode and output device – OCR
(2) output device – LED monitor and input device – printer
(3) Storage device – optical disk and input device mouse
(4) input device – graphic plotter and storage device – CD
(5) scanning device – OCR and output device – key board

6. What are the main parts of stored-program concept.

- (1) Control units, ALU, Registers, RAM, ROM
(2) Input, Output, Memory, CU, ALU
(3) Input, Registers, Output, CU, ALU
(4) CU, Secondary storage, Input, output
(5) None of the above

7. Consider the following statements regarding computer ports,
- A – PS/2 are used only to connect mouse.
 - B – Parallel ports are used to connect scanners.
 - C – VGA are used to connect projects and monitors to the computer

Which of the following is correct?

- (1) A
- (2) A and B
- (3) B and C
- (4) A and C
- (5) A, B and C

8. Which of the following are equal to hexadecimal $3D_{16}$

- A – 61_{10}
- B – 111101_2
- C – 75_8

Select most appropriate answer,

- (1) A
- (2) B
- (3) C
- (4) A and B
- (5) A, B and C

9. Get the -7's binary number using two's complement method,

- (1) 0000011_2
- (2) 11111000_2
- (3) 11111001_2
- (4) 11111010_2
- (5) None of the above

10. What is the decimal equivalent to the binary 10101.11_2 ?

- (1) 22.75
- (2) 22.25
- (3) 21.75
- (4) 21.25
- (5) 21.50

11. A full adder logic circuit will have

- (1) Two inputs and one output
- (2) Three inputs and three outputs
- (3) Two inputs and two outputs
- (4) Three inputs and two outputs
- (5) None of the above

12. The capability of the operating system to enable two or more than two programs to execute simultaneously in a single computer system by using a single processor is

- (1) Multiprocessing
- (2) Multitasking
- (3) Multiprogramming
- (4) Multiexecution
- (5) None of these

13. File type can be represented by

- (1) file name
- (2) file extension
- (3) file identifier
- (4) file size
- (5) None of the above

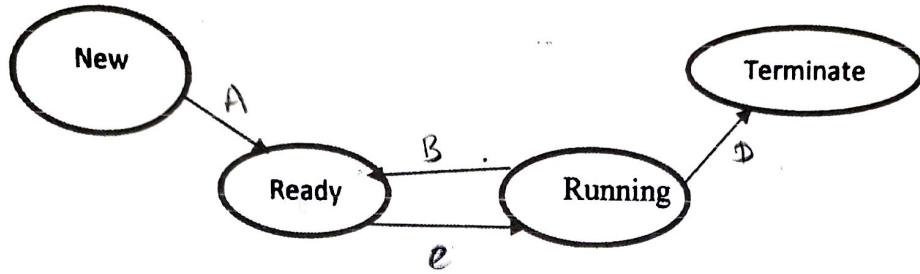
14. Consider the following statements,

- A – The BIOS copies operating system(OS) into RAM and OS starts executing
- B – BOIS looks to the CMOS chip
- C – The OS loads the device drives
- D – The CPU executes the startup program's instructions in the BIOS

Which of the following is correct sequence of operations when the computer is switched on?

- (1) A → B → C → D
- (2) D → A → B → C
- (3) D → B → A → C
- (4) D → C → B → A
- (5) B → D → C → A

15. Part of a state transitions diagram is given below.



Which of the following are correct transition triggers given below.

- (1) A – Admitted, B – Event wait, C – Interrupt, D – Dispatch
- (2) A – Admitted, B – Dispatch, C – Interrupt, D – Released
- (3) A – Admitted, B – Interrupt, C – Dispatch, D – Event completion
- (4) A – Admitted, B – Interrupt, C – Event wait, D – Event completion
- (5) A – Admitted, B – Interrupt, C – Scheduler, D – Released

16. Physical memory capacity is 8GB. Size of the memory frame is 4KB. Which of the following answer is the total number of frames in the physical memory?

- (1) 2 frames (2) 1024*1024 frame (3) 4*2 frames (4) 2^{20} frames (5) None of the above

17. A full adder logic circuit will have

- (1) Two inputs and one output (2) Three inputs and three outputs
- (3) Two inputs and two outputs (4) Three inputs and two outputs (5) None of the above

18. Which of the following html page section - tag combination is incorrect?

- A. Head - <title> B. Body - <href> C. Body - <p> D. Body - <h1>
- (1) A only (2) B only (3) B and C only (4) B and D (5) None of the above

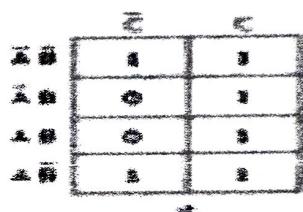
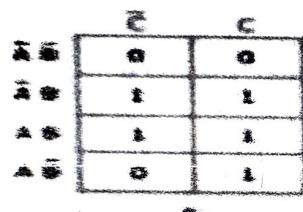
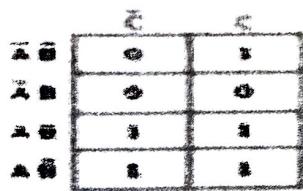
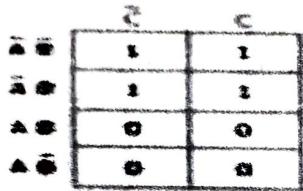
19. Consider the following statements regarding <a> tag.

- A. <a> tag can be used to embed an audio file into a web page.
- B. <a> is an empty tag which is used in the head section of a html page.
- C. <a = "https://www.youtube.com/"> will insert a hyperlink to Youtube in your web page.

Which of the above statement is true?

- (1) A only
- (2) B only
- (3) C only
- (4) B and C only
- (5) None of the above

20. Which of the K-maps given below represents the expression $X = AC + BC + B$?



- (1) a (2) b (3) c (4) d (5) None of the above

21. Network devices operate at certain network model layers.

Which of the following device – layer pair is correct?

- (1) Router – Network access layer (2) Hub – Data link layer
(3) Multilayer Switch – Network layer (4) Switch – Physical layer (5) Repeater – Transport Layer

22. A home network with the IP address 192.168.1.0/29 has 5 devices configured with static IP addresses.

After configuration one of the following devices could not connect to the network.

Choose the device.

- (1) Device A - 192.168.1.2 (2) Device B - 192.168.1.3 (3) Device C - 192.168.1.5
(4) Device D - 192.168.1.6 (5) Device E - 192.168.1.7

23. Which of the following subnet masks will allow usable 128 hosts per network?

255.255.254.0

255.255.255.0

255.255.255.128

- (1) A only (2) B only (3) C only (4) A and B only (5) All A,B and C

24. Which IP address correctly shows the host portion of the address (host portion is underlined)?

- (1) 126.201.54.231 (2) 10.250.1.1 (3) 223.250.200.2
(4) 191.41.35.112 (5) 209.240.80.78

25. Which of the following statement(s) is/are true?

- (1) By dividing the time of the shared channel, slotted ALOHA eliminated the complete collision of frames.
- (2) 32 bit long MAC address enable unique identification of destination hardware interface. ✓
- (3) The breakdown of one computer or cable in Ring topology can lead to the breakdown of the entire network.
- (4) Pulse Code Modulation is one of the most commonly used methods to convert analog data into digital form. ✓
- (5) None of the above

26. The undesired effect created by a signal on another signal when sharing the same transmission medium is known as:

- (1) Attenuation
- (2) Delay distortion
- (3) Thermal Noise
- (4) Intermodulation
- (5) Crosstalk

27. The Transport protocol to use when speed is critical and error correction is not necessary is:

- (1) Transmission Control Protocol
- (2) User Datagram Protocol
- (3) Internet Protocol
- (4) Ethernet
- (5) Hyper Text Transfer Protocol

28. What is the program or hardware device that filters the information coming through an internet connection to a network or computer system?

- (1) Antivirus
- (2) Router
- (3) Firewall
- (4) Cookies
- (5) None of the above

29. This is an encryption/decryption key known only to the party that exchange secret messages.

- (1) digital signature
- (2) private key
- (3) public key
- (4) security token
- (5) security key

30. What is the difference between websites, "http://protocol.com" and "https://protocol.com"?

- (1) The "S" denotes that the communication between the client and the server is much faster.
- (2) The "S" denotes that the communication between the client and the server is stateless.
- (3) The "S" denotes that the communication between the client and the server is synchronized.
- (4) The "S" denotes that the communication between the client and the server is secure.
- (5) The "S" denotes that the communication between the client and the server is simple.

• Consider following logical schema mapped from a part of an ER diagram for a Local Bank.

Account(Acc_No, Acc_Type, Balance, Holder_ID)

Acc_Holder(Holder_ID, Holder_Name, Holder_Address)

31. Which of the following statement(s) is/are true regarding the above schema.

A - It is an example for a one-to-many relationship mapping.

B - It is an example for a many-to-many relationship mapping.

C - Above mapping does not support storing data for a Joint bank account in the database.

- (1) A and B only
- (2) B and C only
- (3) A and C only
- (4) A, B and C only
- (5) None of the above

32. Which of the following statement is incorrect regarding a Primary key of a table?
- (1) A Primary key can consist of single or multiple columns.
 - (2) A Primary key column cannot have NULL values.
 - (3) A table can have more than one primary key.
 - (4) Each value of the Primary Key column is unique.
 - (5) A Primary key can be an existing table column or a column that is specifically generated.
33. An attribute which can be further divided into subparts with independent meaning is known as,
- (1) Single-value attribute (2) Multi-value attribute (3) Derived attribute
 - (4) Simple attribute (5) Composite attribute
34. Which of the following data models does not support modelling Many-to-Many relationships?
- (1) Hierarchical model (2) Network model (3) Relational model
 - (4) Object Relational model (5) None of the above
35. To add FOREIGN KEY constraint on a column of an already created table, we can use:
- (1) DDL command CREATE (2) DML command ALTER (3) DDL command ALTER
 - (4) DDL command UPDATE (5) DML command UPDATE
36. Which of the following SQL operators allows retrieving database on a search pattern rather than on exact values?
- (1) IN (2) BETWEEN (3) OR (4) AND (5) LIKE
37. What is the correct SQL query to change contact details of a customer with the Customer ID 007?
- (1) INSERT INTO Customer (Telephone) VALUES (0751585654) WHERE Cust_ID = 007;
 - (2) ALTER TABLE Customer SET Telephone = 0751585654 WHERE Cust_ID = 007;
 - (3) ALTER TABLE Customer UPDATE Telephone = 0751585654 WHERE Cust_ID = 007;
 - (4) UPDATE Customer SET Telephone = 0751585654;
 - (5) UPDATE Customer SET Telephone = 0751585654 WHERE Cust_ID = 007;
38. A relation in 2NF needs to be normalized into 3NF when there is,
- A - A column contains multiple values for a single record.
 - B - A non-key attribute determined by a part, but not the whole primary key.
 - C - A non-key attribute determined by another non-key attribute.
- (1) A only (2) B only (3) C only (4) A and B only (5) B and C only
39. When the same entity participates more than once in a relationship it is known as,
- (1) Weak relationship (2) Strong relationship (3) Unary relationship
 - (4) Binary relationship (5) Ternary relationship

40. Consider following relation R and its Functional dependencies.

$$R = \{ A, B, C, D, E, F, G \}$$

$$A, B \longrightarrow G$$

$$A \longrightarrow C, D$$

$$B \longrightarrow E, F$$

$$E \longrightarrow F$$

Assume the Primary key of R to be A and B. Which of following statement regarding relation R is true?

- (1) Relation R is in First normal form but not in Second normal form.
- (2) Relation R is in Second normal form but not in First normal form.
- (3) Relation R is in Second normal form but not in Third normal form.
- (4) Relation R is in Third normal form but not in Second normal form.
- (5) Relation R is in Third normal form.

41. Which of the following is not a guideline for drawing a Data Flow Diagram (DFD)?

- (1) All data flows going out of the system must be generated by a process or a data store.
- (2) Each process should have at least one input and an output.
- (3) Each data store should have at least one data flow in and one data flow out.
- (4) A data can flow directly between two external entities.
- (5) A direct data flow cannot exist between an external entity and a data store.

42. A bookshop is implementing a new system for its customers to order online. Before launching the systems for its wider customer base, they choose 50 customers and ask them to try the new system, and provide feedback to identify possible issues.

What Deployment method the bookshop is applying?

- (1) Prototyping
- (2) Parallel
- (3) Direct
- (4) Phased
- (5) Pilot

43. In the gaming industry, "beta versions" are released by game developers to collect feedback from the gaming community before the game's official release.

What type of testing is performed during this stage of game development?

- (1) White box testing
- (2) Unit testing
- (3) Integration Testing
- (4) System Testing
- (5) Acceptance Testing

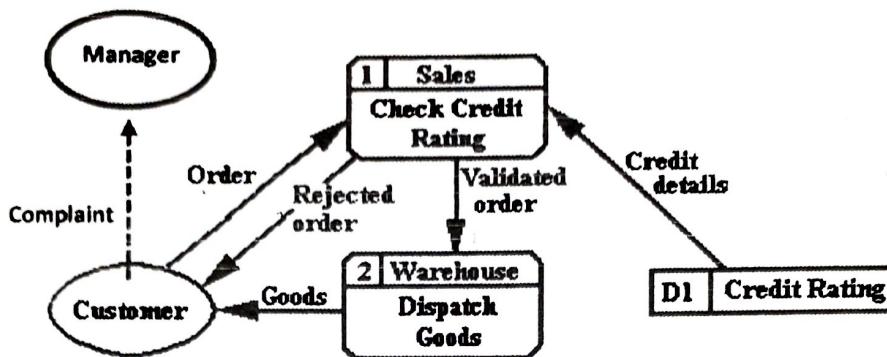
44. What is the correct progression of data flow diagrams in system analysis and design phase?

- (1) Current physical DFD \rightarrow Current logical DFD \rightarrow Required logical DFD \rightarrow Required physical DFD
- (2) Current logical DFD \rightarrow Current physical DFD \rightarrow Required physical DFD \rightarrow Required logical DFD
- (3) Current physical DFD \rightarrow Required physical DFD \rightarrow Current logical DFD \rightarrow Required logical DFD
- (4) Required physical DFD \rightarrow Required logical DFD \rightarrow Current logical DFD \rightarrow Current physical DFD
- (5) Required logical DFD \rightarrow Required physical DFD \rightarrow Current logical DFD \rightarrow Current physical DFD

45. By implementing , an organization can enhance its business performances by integrating key business processes into one system and centralizing its data.

- (1) Executive Support System
- (2) Office Automation System
- (3) Expert System
- (4) Enterprise Resource Planning system
- (5) Knowledge Management System

46. Consider the following Level 1 DFD diagram for processing a customer order.



Which of the following modelling rule is violated in the above diagram?

- (1) Each process should have equal number of data flow in and out.
- (2) Each external entity should have equal number of data flow in and out.
- (3) A direct data flow cannot exist between Check Credit Rating and Dispatch Goods processes.
- (4) Credit Rating data store should have at least one data flow in and one data flow out.
- (5) A direct data flow cannot exist between Customer and Manager.

47. "The system shall facilitate a secured communication channel for transferring payment details via the internet".

Above statement is an example for:

- (1) Essential functional requirement
- (2) "Nice to have" functional requirement
- (3) Essential non-functional requirement
- (4) "Nice to have" non-functional requirement
- (5) None of above

48. What would be the best system development lifecycle model to use if the system can be modularized and developed in parallel, to reduce the development time?

- (1) Agile method
- (2) Rapid Application Development
- (3) Spiral model
- (4) Waterfall model
- (5) Prototyping

49. Which of the following is not a task covered by SSADM?

- (1) Investigating the current environment
- (2) Determining business systems options
- (3) Determining feasibility
- (4) Defining requirements
- (5) Developing and testing the proposed system

50. An advantages of using custom developed software over COTS Packages would be,

- (1) Have a greater chance of incorporating industry set standards.
- (2) Tend to be far more configurable.
- (3) Can be implemented in significantly less time.
- (4) Less resources are required in terms of human capital, office space and money.
- (5) The company can gain a real competitive advantage over its competitors.