ADVANCED LEVEL
Information Communication Technology
Model Paper 2

Class   : ISM / Shakthi

Duration   : 2 Hours   Date : ....

Candidate's name : ....

Paper - I

Answer all the questions.

In each of the questions 1 to 50, pick one of the alternatives from 1, 2, 3, 4, 5 which is correct or most appropriate and mark your response with a cross (X) in the answer sheet provided.

01. ENIAC was invented by

  1. John Von Neumann.   2. Ada Lovelace.

  3. John & Eckert.   4. Charles Babbage.

  5. Blaise Pascal.

02. The decimal equivalent of hexadecimal number BA5 is

  1. 2891.   2. 2980.

  3. 2981.   4. 341.

  5. 3253.

03. The decimal equivalent of binary number 01010110 is

  1. 84   2. 82   3. 88   4. 80   5. 86

04. 8 bits 2s complement representation of decimal number 6 and -12 are

  1. 00000110 and 10101010 respectively. 2. 11100101 and 11101010 respectively.

  3. 01010101 and 00101010 respectively. 4. 00000110 and 11110100 respectively.

  5. 10100101 and 11101010 respectively.

05. Addition of hexadecimal number EC and decimal number 85 is

  1. 236 in decimal.   2. 55 in hexadecimal.

  3. 57 in decimal.   4. 259 in decimal.

  5. 321 in decimal.

06. Which of the following loads the operating system into the memory?

    1. Bootstrap loader   2. BIOS

    3. CMOS   4. POST check

    5. Microsoft

07. What are the values used in the following type?

       d = {"john":40, "peter":45}

    1. "john", 40, 45, and "peter"   2. "john" and "peter"

    3. 40 and 45   4. d = (40:"john", 45:"peter")

    5. 4 and 5

08. In Python, to open a file d:\colours.svg for adding data replacing the existing content, we use

    1. outfile = open("d:\\colours.svg", "a")   2. outfile = open("d:\\colours.svg", "rw")

    3. outfile = open("d:\\colours.svg", "w")   4. outfile = open(file = "d:\\colours.svg")

    5. outfile = open(file = "d:\\colours.svg", "i")

09. A text file named "text.txt" has stored the numbers 54321. What is the output of the following code when the content of file has been read?

       f = open("text.txt", "r")

       for i in f:

          print(i,end="-")

    1.   -5-4-3-2-1-   2.   -5-4-3-2-1

    3.   54321-   4.   5-4-3-2-1

    5.   5-4-3-2-1-

10. Your computer is assigned the IP address 156.233.42.56 / 23. How many hosts per subnet, and subnets can be created under this network?

    1. 128 hosts and 510 subnets   2. 510 hosts and 128 subnets

    3. 128 hosts and 512 subnets   4. 126 hosts and 510 subnets

    5. 510 hosts and 126 subnets

Consider the following table named "super" with data.

First Name	Last Name	Address	City	Age
Mickey	Mouse	123 Fantasy Way	Anaheim	73
Bat	Man	321 Cavern Ave	Gotham	54
Wonder	Woman	987 Truth Way	Paradise	39
Donald	Duck	555 Quack Street	Mallard	65
Bugs	Bunny	567 Carrot Street	Rascal	58
Wiley	Coyote	999 Acme Way	Canyon	61
Cat	Woman	234 Purrfect Street	Hairball	32
Tweety	Bird	543	Itotltaw	28

11. Which of the following SQL statements can be used to retrieve the First Name of records who are older than 40?
    1. SELECT First Name FROM Super WHERE Age < 40
    2. RETRIEVE First Name FROM Super WHERE Age > 40
    3. CREATE First Name FROM Super WHERE Age < 40
    4. GET First Name FROM Super WHERE Age > 40
    5. SELECT First Name FROM Super WHERE Age > 40

12. Which of the following statements can be used to change the age of "Bat Man" to 30?
    1. ALTER TABLE SET Age="30" WHERE First Name="Bat" AND Last Name="Man"
    2. ALTER SET Age="30" WHERE First Name="Bat" AND Last Name="Man"
    3. UPDATE TABLE SET Age="30" WHERE First Name="Bat" AND Last Name="Man"
    4. UPDATE Super SET Age="30" WHERE First Name="Bat" AND Last Name="Man"
    5. ALTER Super SET Age="30" WHERE First Name="Bat" AND Last Name="Man"

13. Output of the Python statement print(53%5*2+7-4) is
    1. 6.   2. 27.
    3. 13.   4. 10.
    5. 9.

14. Which of the following is not considered as biometrics authentication?

   1. Finger print   2. Retina
   3. Password   4. Voice
   5. Facial Expressions

15. In TCP IP computer networks, Transport Protocol Data Unit (TPDU) is referred to as a

   1. packet.   2. frame.
   3. segment.   4. window.
   5. message.

16. Which of the following is true, when mapping a many-to-many unary relationship into a logical structure?

   1. One relation is created..   2. Two relations are created.
   3. Three relations are created.   4. Four relations are created.
   5. Five relations are created.

17. A recursive relationship is between an entity and

   1. itself.   2. a subtype entity.
   3. two other entities.   4. an attribute.
   5. an attribute of the same entity.

18. If no repeating groups of data exist and no partial dependencies exist in a relation, then the relation is in

   1. First normal form.   2. Second normal form.
   3. Third normal form.   4. Unnormalized state.
   5. fully Normalized state.

19. In HTML, you can pre-select a drop down list item by using the …………. attribute.

   1. Select   2. Selected
   3. Optioned   4. Option
   5. Checked

20. Which of the following statements are true considering Python file handling?

    a) When you open a file for reading, if the file does not exist, an error occurs.

    b) When you open a file for reading, if the file does not exist, the program will open an empty file.

    c) When you open a file for writing, if the file does not exist, a new file is created.

    d) When you open a file for writing, if the file exists, the existing file is overwritten with the new file.

    1. a,b,c   2. a,c,d   3. a,b,c,d   4. a,d,b

    5. a and d

21. What is the final value of variable "indexOfMax", when the following python code is executed?
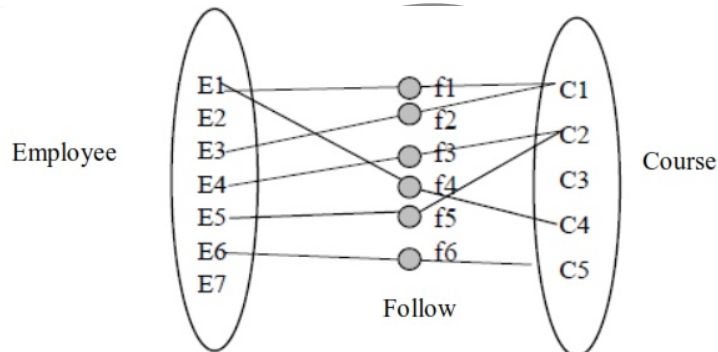
    ```
    myList = [1, 5, 5, 5, 5, 1]
    max = myList[0]
    indexOfMax = 0
    for i in range(1, len(myList)):
        if (myList[i]> max):
            max = myList[i]
            indexOfMax = i
    ```

    1. 5   2. 3

    3. 2   4. 1

    5. 4

22. A computer in a sub network is assigned the IP Address 192.240.16.91 and the subnet mask 255.255.255.128. Which of the following IP Addresses **<u>cannot</u>** be assigned to a computer in the same sub network?

    1. 192.240.16.120   2. 192.240.16.92

    3. 192.240.16.126   4. 192.240.16.96

    5. 192.240.16.221

23. Following is a mapping of instances of Employee and Course entities related by the relationship named "follow".

Which of the following statements is true ?

    A - Two one to many relationships exists in the above mapping.

    B - Only one 1:M relationship exists in the above mapping.

    C - Only one M:N relationship exists in the above mapping.

1. A only
2. B only
3. A,C only
4. B, C only
5. A, B, C all

24. Which of the following represents associative law used in Boolean algebraic simplification?
    1. $A+B = B+A$
    2. $A+(B+C) = (A+B)+C$
    3. $A(B+C) = AB+AC$
    4. $A+A=A$
    5. $A+1=1$

25. Which of the following provides the ability to create the structure of tuples in a database?
    1. DML (Data Manipulation Langauge)
    2. DDL (Data Definition Langauge)
    3. Query
    4. Relational Schema
    5. DMDL

26. Which of the following device can combine multiple analog signals into one signal over a shared medium?
    1. Switch
    2. Router
    3. Hub
    4. Multiplexer
    5. De-Multiplexer

27. Which of the following server is used to allocate IP addresses to each device connected to a network?

    1. DNS server
    2. DHCP server
    3. Mail server
    4. Proxy server
    5. Web server

28. When communicating, the decrease of the strength of a signal with distance is called

    1. Delay distortion.
    2. Noise.
    3. Attenuation.
    4. Collision.
    5. Propergation.

29. Select the most suitable model for the given description.

    "Initial version of the system required to be developed and presented to the users. Then based on the feedback obtained from the user the system should be changed and presented again. This process should be iterated until the users are satisfied with the system".

    1. Waterfall Model
    2. Evolutionary Prototyping
    3. Incremental Development
    4. Spiral Model
    5. RAD

30. Bluetooth can be used to implement a wireless

    1. personal area network.
    2. local area network.
    3. virtual private network.
    4. metropolitan area network.
    5. virtual network.

31. What is the correct CSS code to set the text colour of "h1" ID to red?

    1. #h1{text-color:red;}
    2. .h1{color:red;}
    3. h1{color:red;}
    4. #h1{color:red;}
    5. .h1{text-color:red;}

32. The type of information system that captures and reproduces the knowledge of an expert problem solver using Artificial Intelligence (AI) technology is known as a

    1. Transaction processing system.
    2. Executive information system.
    3. Expert system.
    4. Embedded System.
    5. Office Automation System.

33. Which of the following statement is correct about management information system?

    1. Create and share documents that support day-today office activities.
    2. Process business transactions (e.g., time cards, payments, orders, etc.).
    3. Capture and reproduce the knowledge of an expert problem solver.
    4. Use the transaction data to produce information needed by managers to run the business.
    5. None of the above.

34. Which of the following activities is carried out during the Systems Implementation phase of the traditional systems development life cycle?

    1. Observation of site to gather requirements
    2. Preparing SRS document
    3. Preparing the request for proposal
    4. Carrying out the feasibility study
    5. Training Users

35. Paul Power is a manufacturing company in Sri Lanka which has its head office in China. What is the most convenient method to conduct weekly progress review meetings between the local staff in Sri Lanka and the senior management team in China?

    1. Telephone Calls
    2. SMS
    3. Email
    4. Skype
    5. Facebook

36. An application which requires more memory space than the maximum memory space available in the primary memory of a computer is ready for execution, uses

    1. Virtual Memory.
    2. Random Access Memory.
    3. Cache Memory.
    4. Registers.
    5. Extended Memory.

37. Consider the following statement regarding a mobile phone.

    "All the smart phones shall have a touch screen interface"

    The above statement defines

    1. A mandatory, functional requirement.
    2. An optional, functional requirement.
    3. A mandatory, non-functional requirement.
    4. An optional, non-functional requirement.
    5. A mandatory, optional requirement.

38. Operating System maintains the page table for

    1. each process.   2. each thread.
    3. each instruction.   4. each address.
    5. each computer.

39. A process is selected from the _____ queue by the _____ scheduler, to be executed.

    1. blocked, short term   2. wait, long term
    3. ready, short term   4. ready, long term
    5. terminate, short term

40. The processes that are residing in main memory and are ready and waiting to execute are kept on a list called

    1. job queue.   2. ready queue.
    3. execution queue.   4. process queue.
    5. de queue.

41. In paging, physical memory is broken into fixed-sized blocks called

    1. frames.   2. pages.
    3. backing store   4. none of the mentioned
    5. partitions.

42. Logical memory is broken into blocks of the same size called

    1. frames.   2. pages.
    3. backing store   4. none of the mentioned
    5. partitions.

43. The E-commerce domain that involves business activity initiated by the consumer and targeted to businesses is known as

    1. Business to Business (B2B).   2. Consumer to Business (C2B).
    3. Business to Consumer (B2C).   4. Consumer to Consumer (C2C).
    5. Employee to Business (E2B).

44. Which of the following statements is correct about IP addresses and subnet masks?

    1. 192.248.32.3 is a Class B If address.
    2. A network with a subnet mask 255.255.255.248 can accommodate six hosts.
    3. An IP address consists of 16 bits.
    4. 10.32.1.5 is a Class C IP address.
    5. 255.255.255.0 is a Class C IP address

45. Consider the following models:

    A - Network
    B - Waterfall
    C - Relational

    Which of the above is a / are database model/s?

    1. A only.   2. B only.
    3. C only.   4. A and B only.
    5. A and C only.

46. The main memory of a computer system is byte addressable and has a maximum usable size of 64MB. What is the minimum width if its address bus in bits?

    1. 26 bits   2. 24 bits
    3. 8 bits   4. 16 bits
    5. 36 bits

47. What would be the result if the following Boolean expression is simplified?

$$F(x, y) = \overline{xy}(\bar{x} + y)(y + \bar{y})$$

    1. x'   2. y'

    3. x   4. y

    5. xy

48. Consider the following characteristics:

    A - Autonomous

    B - Performs in dynamic environments

    C - Functions restricted to a time period

    D - Interacts with highly increasing information

Which of the above are characteristics of a Software Agent?

    1. A and B only.   2. A and C only.

    3. A, B and C only.   4. A, B and D only.

    5. B, C and D only.

49. Consider the following statements about HTML:

    A - A well-formed HTML document should comprise two sections. a head and a body.

    B - An HTML document is a computer program.

    C - White spaces. tabs and blank lines can always be used to format the display of a document.

    D - The content of the body section is displayed by browsers.

Which of the above are correct?

    1. A and D only.   2. Band Conly.

    3. Band D only.   4. A. C and D only.

    5. B. C and D only.

50. Consider the following assignment statements:

    A - a, b = "John", 30   **B** - a, b = 1   **C** - a=b=1

    D - a = True   **E** - a = true

    Which of the above are syntactically correct Python statements?

    1. A and C only.   2. B and D only.

    3. A, C and D only.   4. B, D and E only.

    5. C, D and E only.

END