

ADVANCED LEVEL
Information Communication Technology
Model Paper 1

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. SSADM stands for,

1. Small Systems Analysis and Design Methodology.
2. Structured System Analysis and Design Methodology.
3. Structured Systems Analytical and Design Methodology.
4. Structured Software Analytical and Design Methodology.
5. Structured Software Analysis and Design Methodology.

02. Which of the following doesn't describe non-functional requirement?

1. Documentation of a system
2. Response time of a system
3. Effectiveness of a system
4. Services that system should provide
5. Accessibility of a system

03. Bottom-up integration testing is a testing method which begins with

1. System Testing.
2. Unit Testing.
3. Acceptance Testing.
4. Alpha Testing.
5. Beta Testing.

04. Which of the following command is issued to determine the line which a computer or router not functioning as expected in a computer network?

1. Tracert
2. Ping
3. IPConfig
4. Netstat
5. Hostname

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05. In system development a feasibility study is conducted by

1. Managers of an organization.
2. Intended users of the system.
3. System analysts upon instructions of managers of the organization.
4. Senior programmers upon instructions of both the proposed users and managers of the organization.
5. Software engineers.

06. Which of the following is true about system testing?

1. Each component of a system is inspected at the implementation phase.
2. Unit testing is conducted by project manager.
3. Acceptance testing is used to inspect whether each tested module is combined accurately.
4. Acceptance test is conducted by software development team only.
5. Integrated testing is performed by software development team including software engineers and project managers.

07. Given below are some of the advantages of using fiber optic cable over copper wires in data communication.

- A. Electromagnetic waves do not interfere.
- B. High speed of transmission.
- C. Resistance to mechanical shocks.
- D. Ability to wire with sharpe bents.
- E. Higher distance of data transmission.

Which of the following consist of true statements.

1. (A) and (B) only.
2. (B), (C) and (D) only.
3. (A), (B), (C) and (E) only.
4. (A), (B), (C) and (D) only.
5. All of the above.

08. Which of the following operating system type best defines multiple users connected to a single computer?

1. Real time
2. Multi Threading
3. Multi Core
4. Multi Programming'
5. Time Shared

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:
    x=i
    print(x,end="-")
```

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

10. Study the following statements on waterfall model of system development.

- A. It is more suitable for daily used projects that user requirements are well identified.
- B. It is not possible to follow this model in data system projects always in real world.
- C. This model is carried out step by step.

Which of the above statement/s is /are true.

- | | |
|----------------------|--------------|
| 1. (A) only. | 2. (B) only. |
| 3. (A) and (B) only. | 4. (C) only. |
| 5. All of the above. | |

11. Which of the following is equivalent, after simplifying the Boolean statement

$$F = (A'.B').(A+B)'$$

- | | |
|----------|------|
| 1. 0 | 2. 1 |
| 3. A | 4. B |
| 5. A'.B' | |

12. Which of the following is the output of Python statement `print((3+15)%4+3**2)`

- | | |
|-------|-------|
| 1. 6 | 2. 9 |
| 3. 11 | 4. 25 |
| 5. 49 | |

13. What is the value after executing the Python expression $10 - 3 * 2 + 2.0 / 2$?

- | | |
|--------|--------|
| 1. 5.0 | 2. 5 |
| 3. 6 | 4. 6.0 |
| 5. 3.0 | |

14. Study the following statements regarding physical schema for the development of data management system.

- A. It is close to physical storage.
- B. It creates a supporting data structure called index.
- C. It is used by database designers and database administrators.
- D. It is an abstract of whole project.
- E. It explains data storing pattern.

Which of the above statements are true?

- | | |
|---------------------------|---------------------------|
| 1. (A), (B) and (C) only. | 2. (A), (B) and (E) only. |
| 3. (B), (C) and (D) only. | 4. (B), (C) and (E) only. |
| 5. (C), (D) and (E) only. | |

15. In which of the followings the Ubiquitous technology is not used?

- | | |
|---|-----------------------|
| 1. Customizations of automobiles | 2. Controll of crimes |
| 3. Domestic environments | 4. Location tracking |
| 5. Design of combinational logic circuits | |

16. Which of the following is true, when mapping a many-to-many binary 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 | |

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Consider the given SQL statement to create “STUDENT” and “LENDING_BOOK” tables.
And answer questions 17 and 18.

CREATE TABLE LENDING_BOOK			CREATE TABLE STUDENT		
((
ACCT_REG	VARCHAR(10)	NOTNULL,	STUDENT_ID	CHAR(5)	NOTNULL,
BOOK_NAME	VARCHAR(20)	NOTNULL,	NAME	VARCHAR(25)	NOTNULL,
AUTHOR	VARCHAR(25)	NOTNULL,	BIRTHDAY	DATE	NOTNULL,
DESCRIPTION	VARCHAR(75),		ADDRESS	VARCHAR(25)	NOTNULL,
ISSUED_DATE	DATE,		PROVINCE	CHAR(10),	
STUDENT_ID	CHAR(5)	NOT NULL,	PRIMARY KEY (STUDENT_ID));		
PRIMARY KEY (ACCT_REG));					

17. Consider the following statements.

- A. “STUDENT_ID field can be used to connect STUDENT and LENDING_BOOK tables.
- B. It is compulsory to input data in to DATE data type fields of both the tables.
- C. A comma “ , ” can be used instead of “ ; ” in PRIMARY KEY(STUDENT_ID));
- D. It is compulsory to place a comma “ , ” between two fields.

Which of the following statements are true?

1. (A) and (B) only.
2. (A) and (C) only.
3. (A) and (D) only.
4. (A), (B) and (C) only.
5. All of the above.

18. Consider the following statements.

- A. STUDENT_ID is the FOREIGN KEY of LENDING_BOOK table
- B. It is not compulsory to input data to the STUDENT_ID field
- C. CHAR data type can be included in BIRTHDAY field of STUDENT table.
- D. It is not compulsory to input data to PROVINCE field.

Which of the above statement/s is/are true?

1. (D) only.
2. (A) and (D) only.
3. (C) and (D) only.
4. (A), (C) and (D) only.
5. (A), (B) and (D) only.

19. Which of the followings is the correct statement regarding IP addresses and subnet masks?

1. 192.156.6.3 is an example of class “B” IP address.
2. 6 host computers can be connected to a network with a subnet mask of 255.255.255.224.
3. IPV4 addresses contain 8 bits.
4. 224.32.1.5 is an example of class “C” IP address.
5. 255.255.0.0 is an example of class “D” IP address.

20. Which answer describes the output of the following Python code?

```
h = {'a':12,'b':13,'c':45}
```

```
for i in h:
```

```
    print(h['a'])
```

1. 12 is displayed 3 times in separate lines.
2. 12, 13 and 45 numbers displayed in separate lines
3. a, b and c letters are displayed in separate lines.
4. letter 'a' is displayed 3 times in separate lines.
5. error.

21. What is the output of the following Python statement?

```
tuple1 = (5,6,7,8)
```

```
tuple2 = (4,7,8,2)
```

```
a = tuple1+tuple2
```

```
print(a)
```

- | | |
|--------------------|-----------------------|
| 1. Error. | 2. (5,6,7,8)(4,7,8,2) |
| 3. 5,6,7,8,4,7,8,2 | 4. (5,6,7,8,4,7,8,2) |
| 5. 5 6 7 8 4 7 8 2 | |

22. Consider the following Python code.

```
data=[25,28,30,40,85,92,100]
```

```
for i in data:
```

```
    if i >= 40:
```

```
        print(i, end=',')
```

What is the output of the above code?

- | | |
|---------------------------------|------------------|
| 1. 25, 28, 30, | 2. 25, 28,30,40, |
| 3. 85, 92, 100, | 4. Error |
| 5. 25, 28, 30, 40, 85, 92, 100, | |

23. In a relational database table, primary key values do not have null values. What type of integrity constraints is used in this situation?

- | | |
|----------------------------------|-----------------------------|
| 1. Entity integrity | 2. Referential integrity |
| 3. Domain integrity | 4. Data integrity constrain |
| 5. Attribute integrity constrain | |

24. Which of the following is correct about the data anomalies caused by data redundancy?

1. Only the creation anomalies are caused by data redundancy
2. Only the update anomalies are caused by data redundancy
3. Only the insertion anomalies are caused by data redundancy
4. Only the deletion anomalies are caused by data redundancy
5. The creation, update and deletion anomalies are caused by data redundancy

25. What is the output of the Python statement print (“\” ”)?

- | | |
|----------|--------|
| 1. ” | 2. \” |
| 3. \ | 4. “ “ |
| 5. “ “ “ | |

26. What is the output of the Python statement `print (4/2+2-2*2/4)`?
1. 2
 2. 3.0
 3. 4.0
 4. 3
 5. 2.0
27. Which of the following is/are correct about normalization in a relational database?
- A – It is a method to eliminate data duplication
B – One of the advantage of the normalization is to keep data consistency
C – If a data table does not contain repeating groups, it is in first normal form
1. A only
 2. B only
 3. A, B only
 4. B, C only
 5. A,B,C all
28. Which of the following is true about the URL `http://www.abc.com/index.html`?
1. Top-level domain is .com
 2. index.html is a protocol
 3. Internet is a service of the www
 4. http is a webpage
 5. Top-level domain is a www.abc.com
29. In OSI network reference model, UDP is in
1. Physical layer.
 2. Application layer.
 3. Session layer.
 4. Datalink layer
 5. Transport layer.
30. WiFi 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" class 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. Consider the following statements about dynamic random access memory (DRAM).

- A – It has more density comparing with SRAM
- B – Requires refreshing
- C - It has less speed comparing with SRAM

Which of the above is/are correct?

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

33. Consider the following Python program.

```
a = 0
b = 0
print (a/b)
```

Which of the following is/are correct about this program?

- | | |
|--|-------------|
| A – This reveals an error message | |
| B – This will not reveal error message | |
| C – This contains syntax error | |
| D – This contains run time error | |
| 1. A,B only | 2. B,C only |
| 3. A,D only | 4. C,D only |
| 5. A,C only | |

34. Which of the following network configuration would be completely affected in case of a failure of any node (computer)?

- | | |
|---------|---------|
| 1. Star | 2. Ring |
| 3. Tree | 4. Mesh |
| 5. Bus | |

35. Which of the following device is used to separate voice and data into relevant end devices within a home telephone network?

- | | |
|-------------|------------|
| 1. Hub | 2. Router |
| 3. Splitter | 4. Gateway |
| 5. Modem | |

36. What is the equivalent form(s) of the following Boolean expression?

$$f(x, y, z) = \bar{x}y + xy\bar{z} + xyz$$

$$A = \bar{x}y + y$$

$$B = y$$

$$C = x$$

$$D = \bar{x}y + x$$

$$E = \bar{x}y + xy$$

- | | |
|----------------------|--------------|
| 1. A only | 2. B only |
| 3. C only | 4. B, E only |
| 5. A, B, C, D, E all | |

37. Memory management technique in which system stores and retrieves data from secondary storage for use in main memory is called

- | | |
|-------------------|-------------------|
| 1. Fragmentation. | 2. Paging. |
| 3. Mapping. | 4. Virtual memory |
| 5. Swapping. | |

38. Which of the following statements is correct with respect to an HTML document?

1. The will display a new line between words “love” and “HTML”.
2. The & will display the output “&”.
3. The <hr/> tag will display a border around the text.
4. The > will display a < symbol.
5. The tag will display bold text.

39. A process is selected from the _____ queue by the _____ scheduler, to be assigned a PCB.

- | | |
|--------------------------|---------------------|
| 1. job, short term | 2. job, long term |
| 3. ready, short term | 4. ready, long term |
| 5. terminate, short term | |

40. Which of the following code will create the following lists on the web browser?

1. Coffee
 - i. Black
 - ii. Milk
 - iii. Cappuccino
2. Tea
 - c. Black
 - d. Milk
 - e. Green

1.

```
<ol> <li> Coffee </li>
  <ol start="1" type="i">
    <li> Black </li><li> Milk </li><li> Cappuccino </li>
  </ol>
  <li> Tea </li>
  <ol start="3" type="a">
    <li> Black </li><li> Milk </li><li> Green </li>
  </ol>
</ol>
```

2.

```
<ol> <li> Coffee </li>
  <ol start="1" type="i">
    <li> Black </li><li> Milk </li><li> Cappuccino </li>
  </ol>
  <li> Tea </li>
  <ol start="1" type="a">
    <li> Black </li><li> Milk </li><li> Green </li>
  </ol>
</ol>
```

3.

```
<ol> <li> Coffee </li>
  <ol start="1" type="i">
    <li> Black </li><li> Milk </li><li> Cappuccino </li>
  </ol>
  <li> Tea </li>
  <ol start="3" type="c">
    <li> Black </li><li> Milk </li><li> Green </li>
  </ol>
</ol>
```

4. ` Coffee
 <ol start="1" type="a">
 Black Milk Cappuccino

 Tea
 <ol start="3" type="a">
 Black Milk Green

 `

5. ` Coffee
 <ol start="a" type="i">
 Black Milk Cappuccino

 Tea
 <ol start="3" type="a">
 Black Milk Green

 `

41. Which of the following is not stored in the PCB of a process?

1. State of the process
2. Name of the process
3. I/O devices used by the process
4. Context switch time
5. Resources allocated to the process

42. The degree of multiprogramming is

1. the number of processes executed per unit time.
2. the number of processes in the ready queue.
3. the number of processes in the I/O queue.
4. the number of processes in memory.
5. the number of processes in virtual memory.

43. A threat in a computer network where an attacker attempts to prevent legitimate users from accessing information or services is called

1. Man in the middle.
2. Denial of service.
3. Espionage.
4. Spoofing.
5. Elevation of Privilege.

44. Which of the following statements is correct about IP addresses and subnetting?
1. Subnet mask 255.0.0.0 defines that the IP address is in Class B.
 2. IP Address in the format of x.x.x.x/25 is a Class C address
 3. IP Address in the format of x.x.x.x/25 is a Class B address
 4. Subnet mask 255.255.255.0 defines that the IP address is in Class C.
 5. Subnet mask 255.255.255.0 defines that the respective IP address is a IPv4 address.
45. Consider the following statement regarding a Learning Management System (LMS) of a university.
- "System shall be able to facilitate downloading lecture notes"
- Which of the following is correct with respect to the above statement?
1. It is a nice to have functional requirement.
 2. It is an essential functional requirement.
 3. It is a nice to have non-functional requirement.
 4. It is an essential non-functional requirement.
 5. It is not a requirement of the system.
46. The main memory of a computer system is byte addressable and has a maximum usable size of 128MB. What is the minimum width of its address bus in bits?
1. 26 bits
 2. 27 bits
 3. 28 bits
 4. 16 bits
 5. 36 bits
47. Encryption is best described as
1. a set of procedures that is applied to data to modify its appearance.
 2. a set of procedures that is applied to data to prevent its reading by unauthorised parties.
 3. a set of procedures that is applied to data to modify its structure permanently to prevent its reading by unauthorised parties.
 4. a set of procedures that is applied to data to modify its structure permanently.
 5. a set of procedures that is applied to data to prevent it is modified by unauthorized parties.

48. Consider the following statements:

A - `table{bgcolor:red;}`

B - `table{color:red;}`

C - `body{color=red;}`

D - `body,table{color:red;}`

Which of the above CSS statement(s) is/are syntactically correct?

- | | |
|---------------------|------------------|
| 1. A only. | 2. B only. |
| 3. B and C only. | 4. B and D only. |
| 5. A, B and D only. | |

49. The correct order of corresponding OSI layers for having the functionalities of packet prioritization, error detection, end to end flow control and inter process communication are

1. network, physical, transport, data link.
2. network, data link, transport, application.
3. network, presentation, data link, application.
4. network, presentation, physical, transport.
5. network, data link, presentation, transport.

50. Consider the following statements about the TCP/IP:

A - It is the basic protocol of the Internet.

B - It is a packet switching protocol.

C - It is a four-layer standard communication model.

Which of the above statement(s) is /are correct?

- | | |
|-------------------|-----------------|
| 1. A only | 2. B only |
| 3. B and C only | 4. A and C only |
| 5. All A, B and C | |

END