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# Previous Year Paper

# NABARD Grade A

# Computer/IT Officer

# 2022

1. Predict the correct output of below code in python

Greeting = lambda : print('Welcome to Ixambee')

Greeting ()

1) Welcome to Ixambee
2) "Welcome to Ixambee"
3) Error
4) None of these
5) All of these

***Answer : (1)***

2. Which algorithm approach focus on Local Optimum solution?

1) Greedy Algorithm
2) Dynamic Programming
3) Divide and Conquer
4) Both 1 and 2
5) None of these

***Answer : (1)***

3. There is a BST and below is the Pre order of the BST, What will be it's In order

*150 70 60 80 250 200 350*

1) 60 70 80 150 200 350250
2) 60 70 80 200 150 250 350
3) 60 200 70 80 150 250 350
4) 60 200 70 80 150 250 350
5) None of these

***Answer : (4)***

4. Which is correct version of delete query in SQL

1) DELETE FROM Students WHERE StudentRollNo= 1;
2) DELETE FROM Students;
3) DELETE FROM Students WHERE StudentName= 'Seema';
4) All are correct
5) None of these

***Answer : (4)***

5. Fill in the blanks

R _____are the same as the arrays in C language which are used to hold _____data values of the same type

1) vectors , multiple
2) DataFrame , multiple
3) vectors , Single
4) All of the above.
5) None of these

***Answer : (1)***

6. What is the output for the below code

```
My List = ["New York", "London", "Paris", "New Delhi"]
My File=open('output.txt','w')
for element in MyList:
   print >>MyFile, element
MyFile.close()
```

1) New York
Paris
New Delhi
London

2) London
Paris
New Delhi
New York

3) New York
London
Paris
New Delhi

4) None of these
5) All of these

***Answer : (3)***

7. Which involve two factor authentication

1) Biometric and password
2) Password and OTP
3) OTP and Hash Value
4) None of these
5) All of these

***Answer : (1)***

8. State true or false

MD5 Hashing Algorithm was invented by RSA Labs (Ronald Rivest) in 1991. MD5 was invented to replace its previous version, MD4. When Data is fed to MD5 Hashing Algorithm, it generates a 128-bit Hash Value String as a 32 digit hexadecimal number. Hash Value Collisions are reported for MD5 Hashing Algorithm.

1) True
2) False

***Answer : (1)***

9. Bourne-style shells uses which below symbol

1) $
2) #
3) @
4) %
5) None of these

***Answer : (1)***

10.Predict the output

```
list1 = ['physics', 'chemistry', 1997, 2000]
list2 = [1, 2, 3, 4, 5, 6, 7 ]
print "list1[0]: ", list1[0]
```

1) list1[1]: physics
2) list1[0]: physics
3) list1[2]: physics
4) None
5) All of these

***Answer : (3)***

**Direction :- Read the below passage and answer the questions**

OLAP stands for Online Analytical Processing. OLAP systems have the capability to analyze database information of multiple systems at the current time. The primary goal of OLAP Service is data analysis and not data processing.

OLTP stands for Online Transaction Processing. OLTP has the work to administer day-to-day transactions in any organization. The main goal of OLTP is data processing not data analysis.

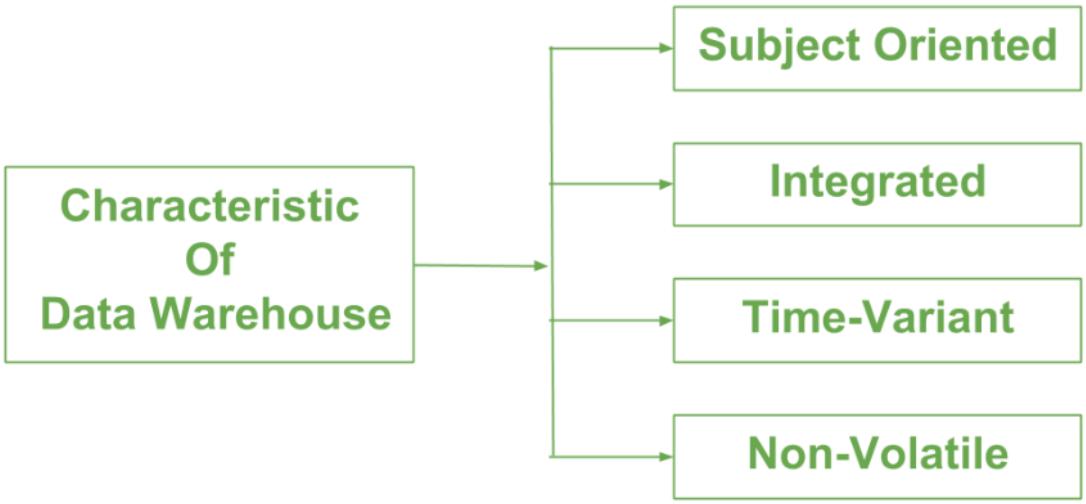
During the Extract, Transform, and Load (ETL) process, a _____(14)

also known as a landing zone, is an interim storage region used for Data Processing. The Data Staging Area is located in between the Data Source(s) and the Data Target(s), which are typically Data Warehouses, Data Marts, or other Data Repositories.

11. Which is not the property of Data warehouse

1) Subject Oriented
2) Integrated
3) Time Variant
4) Non Volatile
5) Non Repudiation

***Ans : 5***



12. OLAP and OLTP differs in

1) Application
2) Normalization
3) Data source
4) Both 1 and 3
5) All three

***Ans : 5) Difference between OLAP and OLTP***

| Category | OLAP (Online Analytical Processing) | OLTP (Online Transaction Processing) |
|---|---|---|
| Definition | It is well-known as an online database query management system. | It is well-known as an online database modifying system. |
| Data source | Consists of historical data from various Databases. | Consists of only operational current data. |
| Method used | It makes use of a data warehouse. | It makes use of a standard database management system (DBMS). |
| Application | It is subject-oriented. Used for Data Mining, Analytics, Decisions making, etc. | It is application-oriented. Used for business tasks. |
| Normalized | In an OLAP database, tables are not normalized. | In an OLTP database, tables are normalized (3NF). |
| Usage of data | The data is used in planning, problem-solving, and decision-making. | The data is used to perform day-to-day fundamental operations. |
| Task | It provides a multi-dimensional view of different business tasks. | It reveals a snapshot of present business tasks. |
| Purpose | It serves the purpose to extract information for analysis and decision-making. | It serves the purpose to Insert, Update, and Delete information from the database. |

| Category | OLAP (Online Analytical Processing) | OLTP (Online Transaction Processing) |
|---|---|---|
| Volume of data | A large amount of data is stored typically in TB, PB | The size of the data is relatively small as the historical data is archived in MB, and GB. |
| Queries | Relatively slow as the amount of data involved is large. Queries may take hours. | Very Fast as the queries operate on 5% of the data. |
| Update | The OLAP database is not often updated. As a result, data integrity is unaffected. | The data integrity constraint must be maintained in an OLTP database. |
| Backup and Recovery | It only needs backup from time to time as compared to OLTP. | The backup and recovery process is maintained rigorously |
| Processing time | The processing of complex queries can take a lengthy time. | It is comparatively fast in processing because of simple and straightforward queries. |
| Types of users | This data is generally managed by CEO, MD, and GM. | This data is managed by clerksForex and managers. |
| Operations | Only read and rarely write operations. | Both read and write operations. |
| Updates | With lengthy, scheduled batch operations, data is refreshed on a regular basis. | The user initiates data updates, which are brief and quick. |
| Nature of audience | The process is focused on the customer. | The process is focused on the market. |
| Database Design | Design with a focus on the subject. | Design that is focused on the application. |
| Productivity | Improves the efficiency of business analysts. | Enhances the user's productivity. |

13. Data warehouse has historical data.

1) Always
2) Sometimes
3) Many a times
4) Depends on application
5) None of these

***Ans : 1)***

14. Fill the blank for space 14.

1) Staging Area
2) Loading
3) Extraction
4) Transformation
5) None

***Ans : (1)***

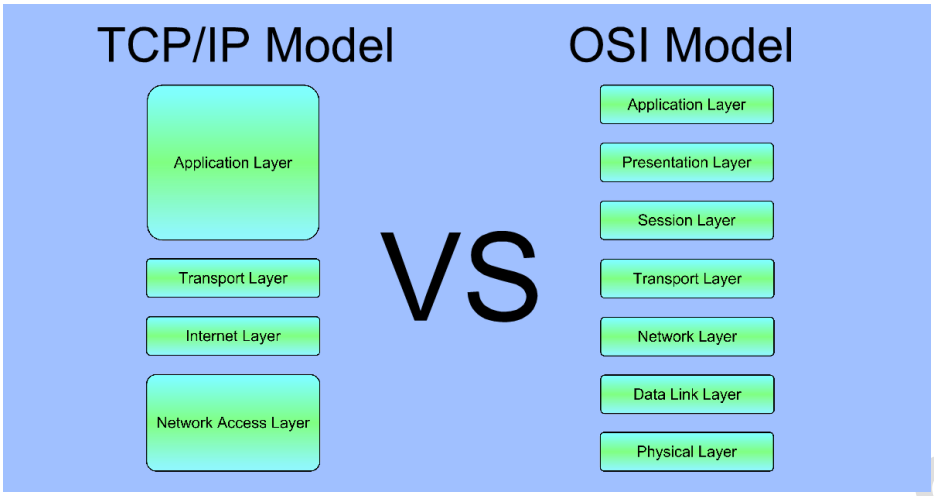
**Direction:- Read the below passage and answer the questions**

The Open Systems Interconnect (OSI) model is a conceptual framework that describes networking or telecommunications systems as seven layers, each with its own function.
The layers help network pros visualize what is going on within their networks and can help network managers narrow down problems (is it a physical issue or something with the application?), as well as computer programmers (when developing an application, which other layers does it need to work with?). Tech vendors selling new products will often refer to the OSI model to help customers understand which layer their products work with or whether it works “across the stack”.
Every layer as set of responsibility and encryption and decryption of data for secure transmission; this happens at _____(16)

15. Which layer is not in OSI but in TCP/IP

1) Internet layer
2) Network Access layer
3) Both 1 and 2
4) Host to host
5) None of these

***Ans : 3)***




16. Which is best fit for blank space 16?

1) Presentation Layer
2) Application layer
3) Session layer
4) Data Link layer
5) Network Layer

***Ans : 1) Layer 6 - Presentation***

***The Presentation Layer represents the area that is independent of data representation at the application layer. In general, it represents the preparation or translation of application format to network format, or from network formatting to application format. In other words, the layer "presents" data for the application or the network. A good example of this is encryption and decryption of data for secure transmission; this happens at Layer 6.***

17. Router is responsible for packet forwarding, including routing. Router works at which layer?

1) Presentation Layer
2) Application layer
3) Session layer
4) Data Link layer
5) Network Layer

***Ans : 5) Layer 3 - Network***

***Here at the Network Layer is where you'll find most of the router functionality that most networking professionals care about and love. In its most basic sense, this layer is responsible for packet forwarding, including routing through different routers. You might know that your Boston computer wants to connect to a server in California, but there are millions of different paths to take. Routers at this layer help do this efficiently.***

18. The _____ deals with the coordination of the data transfer between end systems and hosts.

1) Transport Layer
2) Application layer
3) Session layer
4) Data Link layer
5) Network Layer

***Ans : 1) Layer 4 – Transport***

***The Transport Layer deals with the coordination of the data transfer between end systems and hosts. How much data to send, at what rate, where it goes, etc. The best known example of the Transport Layer is the Transmission Control Protocol (TCP), which is built on top of the Internet Protocol (IP), commonly known as TCP/IP. TCP and UDP port numbers work at Layer 4, while IP addresses work at Layer 3, the Network Layer.***

**Direction:- Read the below passage and answer the questions**

Java is a most popular, object-oriented, widely used programming language and platform that is utilized for Android development, web development, artificial intelligence, cloud applications, and much more.

In Java programming, the _____(19)_____ statement is used for returning a value when the execution of the block is completed. Access modifiers help to restrict the scope of a class, constructor, variable, method, or data member.

19. Fill the blank for 19.

1) return
2) Break
3) goto
4) get
5) return type

***Ans : 1)***

20. Which is not a access modifier in java?

1) Public
2) Private
3) Protected
4) Default
5) None of these

***Ans : 5) There are four types of access modifiers available in Java:***

1. ***Default – No keyword required***
2. ***Private***
3. ***Protected***
4. ***Public***

21. Which is correct way to write methods in java?

1) public void sayHello()
2) public void sayHello
3) public void 4sayHello()
4) public void sayHello{}
5) None of these

***Ans : 1)***

**Direction:- Read the below passage and answer the questions**

Shell can be accessed by users using a command line interface. A special program called Terminal in Linux/macOS, or Command Prompt in Windows OS is provided to type in the human-readable commands. A program which is responsible for providing an interface to a user so that he/she can access the shell. It basically allows users to enter commands and see the output of those commands in a text-based interface. As a shell can also take commands as input from file, we can write these commands in a file and can execute them in shell to avoid this repetitive work. These files are called Shell Scripts or Shell Programs.

Shell script comprises the following elements –

- Shell Keywords – if, else, break etc.
- Shell commands – cd, ls, echo, pwd, touch etc.
- Functions
- Control flow – if..then..else, case and shell loops etc.

22. Which is used for C shell?

1) $
2) #
3) @
4) %
5) None of these

***Answer : (4)***

23. A single-line comment starts with

1) $
2) #
3) @
4) %
5) None of these

***Ans : 2) A single-line comment starts with hashtag symbol with no white spaces (#) and lasts till the end of the line. If the comment exceeds one line then put a hashtag on the next line and continue the comment.***

24. To exit from a loop in shell we can use?

1) return
2) break
3) goto
4) get
5) return type

***Ans : 2)***

25. POSIX is an acronym for ?

1) Portable Operating System Interface
2) POSIX Operating System Interface
3) Portable Operating Shell Interface
4) Portable Operating System Interaction
5) None of these

***Ans : 1) POSIX is an acronym for "Portable Operating System Interface". POSIX shell is based on the standard defined in Portable Operating System Interface (POSIX) – IEEE P1003.2. It is a set of standards codified by the IEEE and issued by ANSI and ISO. POSIX makes task of cross-platform software development easy. There are various POSIX versions, but the most important are POSIX.1 and POSIX.2, which define system calls and command-line interface.***

**Direction:- Read the below passage and answer the questions**

Network Security refers to the measures taken by any enterprise or organization to secure its computer network and data using both hardware and software systems.

The basic principle of network security is protecting huge stored data and networks in layers that ensure the bedding of rules and regulations that have to be acknowledged before performing any activity on the data.

These levels are:

1. Physical Network Security
2. Technical Network Security
3. Administrative Network Security

A _____(26)_____is a network security device, either hardware or software-based, which monitors all incoming and outgoing traffic and based on a defined set of security rules it accepts, rejects or drops that specific traffic.

26. Fill in the correct option for 26 blank space.

1) firewall
2) software based application
3) physical bridge
4) bridge
5) honeypot

***Ans : 1)***

27. In public key cryptography ___
key is used for encryption and ____ key is used for decryption.

1) private, private
2) private, public
3) public, private
4) public , public
5) Any of the above

***Ans : 3)***

28. Which refers to the creation of Internet Protocol (IP) packets with a false source IP address to impersonate another computer system.

1) IP spoofing, or IP address spoofing
2) Network hack attack
3) URL spoofing
4) DOS
5) None of these

***Ans : 1)***

29. Cyber attack in which a malicious actor aims to render a computer or other device unavailable to its intended users by interrupting the device's normal functioning.

1) IP spoofing, or IP address spoofing
2) Network hack attack
3) URL spoofing
4) DOS
5) None of these

***Ans : 4)***

30. State true or false
A ping of death attack involves sending a malformed packet to a targeted machine, resulting in deleterious behavior such as system crashes.

1) True
2) False

***Ans : 1)***

## DESCRIPTIVE PAPER

**Below questions are descriptive questions and you need to write the answer in 600 words. Every question of 15 marks. [Attempt any 2]**

1. What is SDLC model ? Explain about it's phases.
2. Write a note on Normalization process in DBMS.
3. Write note  Denial on Service Attack in cyber security.

**Below questions are descriptive questions and you need to write the answer in 400 words. Every question of 10 marks. [Attempt any 2]**

1. What is Dynamic Memory Allocation in C, explain with functions used in C.
2. Explain Deadlock and conditions responsible for deadlock in operating system.
3. What are the features of Big Data?