



<b>Section Id :</b>	64065357852
<b>Section Number :</b>	1
<b>Section type :</b>	Online
<b>Mandatory or Optional :</b>	Mandatory
<b>Number of Questions :</b>	27
<b>Number of Questions to be attempted :</b>	27
<b>Section Marks :</b>	100
<b>Display Number Panel :</b>	Yes
<b>Section Negative Marks :</b>	0
<b>Group All Questions :</b>	No
<b>Enable Mark as Answered Mark for Review and Clear Response :</b>	Yes
<b>Maximum Instruction Time :</b>	0
<b>Sub-Section Number :</b>	1
<b>Sub-Section Id :</b>	640653120909
<b>Question Shuffling Allowed :</b>	No
<b>Is Section Default? :</b>	null

**Question Number : 1 Question Id : 640653821416 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 0**

Question Label : Multiple Choice Question

**THIS IS QUESTION PAPER FOR THE SUBJECT "DEGREE LEVEL : SOFTWARE ENGINEERING (COMPUTER BASED EXAM)"**

**ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?**

**CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.**

**(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)**

**Options :**

6406532756786. ✔ YES

6406532756787. ✖ NO

Sub-Section Number :	2
Sub-Section Id :	640653120910
Question Shuffling Allowed :	Yes
Is Section Default? :	null

**Question Number : 2 Question Id : 640653821417 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 3**

Question Label : Multiple Choice Question

Which of the following teams in an software organization is primarily responsible for analyzing the data generated by users and various teams within the organization and helping the organization make better decisions?

**Options :**

6406532756788. ✔ Data scientists

6406532756789. ✖ Marketing team

6406532756790. ✖ Sales team

6406532756791. ✖ Support team

**Question Number : 3 Question Id : 640653821426 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 3**

Question Label : Multiple Choice Question

Identify the correct option, which correctly categorizes the following tests as blackbox testing and

whitebox testing.

- Branch coverage
- Equivalence classes
- Boundary conditions
- Path coverage

**Options :**

6406532756824. ✓
- Blackbox testing: Equivalence classes, Boundary conditions
  - Whitebox testing: Branch coverage, Path coverage

6406532756825. ✗
- Blackbox testing: Branch coverage, Path coverage
  - Whitebox testing: Equivalence classes, Boundary conditions

6406532756826. ✗
- Blackbox testing: Branch coverage, Path coverage, Boundary conditions
  - Whitebox testing: Equivalence classes

6406532756827. ✗
- Blackbox testing: Equivalence classes
  - Whitebox testing: Branch coverage, Path coverage, Boundary conditions

**Question Number : 4 Question Id : 640653821431 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 3**

Question Label : Multiple Choice Question

Which debugging strategy locates the event that triggers the incorrect behavior and continues the control flow until it reaches the incorrect state?

**Options :**

6406532756845. ✗ Input manipulation

6406532756846. ✗ Backwards

6406532756847. ✔ Forwards

6406532756848. ✖ Blackbox debugging

**Question Number : 5 Question Id : 640653821438 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 3**

Question Label : Multiple Choice Question

A given prototype is a hand-drawn comic that features the setting, sequence, and satisfaction.

Determine the type of the given prototype.

**Options :**

6406532756873. ✔ Storyboards

6406532756874. ✖ Paper prototype

6406532756875. ✖ Digital mock-ups

6406532756876. ✖ Interactive prototype

**Question Number : 6 Question Id : 640653821441 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 3**

Question Label : Multiple Choice Question

Which of the characteristics of user stories ensures that the implementation of a feature must be stopped once the time budget is exceeded?

**Options :**

6406532756886. ✖ Specific

6406532756887. ✖ Measurable

6406532756888. ✖ Achievable

6406532756889. ✖ Relevant

6406532756890. ✔ Timeboxed

**Question Number : 7 Question Id : 640653821442 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 3**

Question Label : Multiple Choice Question

An organization has planned to develop a web application that will help its employees make better investment plans. For better understanding the features that employees want, the organization arranged interviews with a set of employees.

Identify the phase of the software development process that the software is in.

**Options :**

6406532756891. ✔ Requirement gathering

6406532756892. ✖ Development phase

6406532756893. ✖ Design phase

6406532756894. ✖ Testing phase

6406532756895. ✖ Maintenance phase

**Sub-Section Number :** 3

**Sub-Section Id :** 640653120911

**Question Shuffling Allowed :** Yes

**Is Section Default? :** null

**Question Number : 8 Question Id : 640653821418 Question Type : MSQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Max. Selectable Options : 0**

Question Label : Multiple Select Question

Which of the following tool(s) is/are used as project management tools?

**Options :**

6406532756792. ✔ JIRA

6406532756793. ✖ VS Code

6406532756794. ✔ Pivotal Tracker

6406532756795. ✖ Stack overflow

**Question Number : 9 Question Id : 640653821420 Question Type : MSQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Max. Selectable Options : 0**

Question Label : Multiple Select Question

Which of the following is/are true about versioned deployment?

**Options :**

6406532756800. ✔ In this strategy, the users are allowed to choose the versions of software they want to use.

6406532756801. ✖ In this strategy, the changes are incrementally rolled out to a small subset of users.

6406532756802. ✖ In this strategy, a new production environment is created for the new version of the software without affecting the current one, and after sufficient testing of the new version, the users are routed from the current environment to the new environment.

6406532756803. ✔ The strategy has the drawback of maintaining multiple versions.

**Question Number : 10 Question Id : 640653821424 Question Type : MSQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Max. Selectable Options : 0**

Question Label : Multiple Select Question

Consider the following code base in Python.

```
def dayStatus(day):  
    if temp <= 95 or temp > 105:  
        print("invalid temperature")  
    else:  
        if temp >= 98.6 and temp < 100:  
            print("normal temperature")  
        else:  
            print("abnormal temperature")
```

Identify the set(s) of valid test cases for multiple condition coverage.

**Options :**

6406532756816. ✖ {temp = 110, temp = 95, temp = 99}

6406532756817. ✖ {temp = 90, temp = 110, temp = 95, temp = 99}

6406532756818. ✔ {temp = 90, temp = 110, temp = 96, temp = 99, n = 101}

6406532756819. ✖ {temp = 90, temp = 110, temp = 96, temp = 94, n = 101}

**Question Number : 11 Question Id : 640653821425 Question Type : MSQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Max. Selectable Options : 0**

Question Label : Multiple Select Question

Which of the following is/are true about Test-Driven Development (TDD)?

**Options :**

6406532756820. ✔ TDD is especially used for agile processes.

6406532756821. ✔ In TDD, we express each of the requirements for the desired software product in the form of a test.



6406532756822. ✖ In TDD, we derive the tests from the code implementation.

6406532756823. ✔ In TDD, we write the minimum code to meet the needs of each test.

**Question Number : 12 Question Id : 640653821434 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Max. Selectable Options : 0**

Question Label : Multiple Select Question

Consider the object-oriented design of an online book shop. It has many customers (objects of `Customer` class). The customer can access a book list (an object of `BookList` class). The book list consists of various books (objects of `Book` class). The books can be of two types: fiction books (objects of `FBook` class) and non-fiction books (objects of `NFBook` class). Customers can subscribe to the application by making payments using `PaymentService` class. The class `PaymentService` is designed to implement an interface named `iPaymentContact`. Therefore, every change made to the `iPaymentContact` interface results in changes to the class `PaymentService`.

Identify the correct statement(s) about the relationships between the classes mentioned in the above context.

**Options :**

6406532756857. ✖ `Book` is composition of `FBook` and `NFBook`.

6406532756858. ✔ `FBook` and `NFBook` are inherited from `Book`.

6406532756859. ✔ `BookList` is composition of `Book`.

6406532756860. ✔ `PaymentService` is dependent on `iPaymentContact`.

<b>Sub-Section Number :</b>	4
<b>Sub-Section Id :</b>	640653120912
<b>Question Shuffling Allowed :</b>	Yes
<b>Is Section Default? :</b>	null

**Question Number : 13 Question Id : 640653821419 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4**

Question Label : Multiple Choice Question

Which of the following is true about the staging environment of deployment?

**Options :**

6406532756796. ✖ It is primarily created for performing integration and system testing.

6406532756797. ✖ It is also known as live environment where all the users can interact with the deployed system.

6406532756798. ✖ It is the local environment for individual developers that provides IDEs and other tools.

6406532756799. ✔ It exactly reassembles the production environment, and it runs on a remote machine.

**Question Number : 14 Question Id : 640653821421 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4**

Question Label : Multiple Choice Question

Suppose one of the hosting service providers has a server with an 8-core processor and 32 GB of RAM, which is sliced into 8 virtual machines (VMs) such that each VM includes a 1-core processor and 4 GB of RAM. The VMs also include software layers for deploying web applications. The service provider offers these VMs to its clients to host their web applications.

Which kind of hosting option is offered by the service provider?

**Options :**

6406532756804. ✖ Bare Metal Servers

6406532756805. ✖ Infrastructure-as-a-service

6406532756806. ✔ Platform-as-a-service

6406532756807. ✖ None of these

**Question Number : 15 Question Id : 640653821422 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4**

Question Label : Multiple Choice Question

Consider a web application that uses Gzip to compress static pages so that the performance of the application can be improved.

In this scenario, which performance optimization strategy is in use?

**Options :**

6406532756808. ✖ Caching

6406532756809. ✖ Task queue

6406532756810. ✔ Quick loading and rendering of web pages

6406532756811. ✖ Performance monitoring

**Question Number : 16 Question Id : 640653821423 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4**

Question Label : Multiple Choice Question

Consider the following code base in Python.

```
def isPrime(n):  
    if n > 1:  
        for i in range(2, int(n/2)+1):  
            if (n % i) == 0:  
                return False  
        return True  
    else:  
        return False
```

What is the cyclomatic complexity of the function `isPrime`?

**Options :**

6406532756812. ✖ 3

6406532756813. ✔ 4

6406532756814. ✖ 5

6406532756815. ✖ 6

**Question Number : 17 Question Id : 640653821427 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 4**

Question Label : Multiple Choice Question

Consider the design of a mobile application for a courier service company that enables doorstep pickup and delivery services. The application has a class `Delivery`, which is extended by the subclasses `NormalDelivery` and `ExpressDelivery`.

Identify the SOLID principle that is fulfilled by the design if the behavior of the application remains the same when we replace the subclasses (`NormalDelivery` and `ExpressDelivery`) with the base class (`Delivery`) in the code implementation.

**Options :**

6406532756828. ✖ Single responsibility principle

6406532756829. ✖ Open-close principle

6406532756830. ✔ Liskov substitution principle

6406532756831. ✖ Interface segregation principle

6406532756832. ✖ Dependency inversion principle

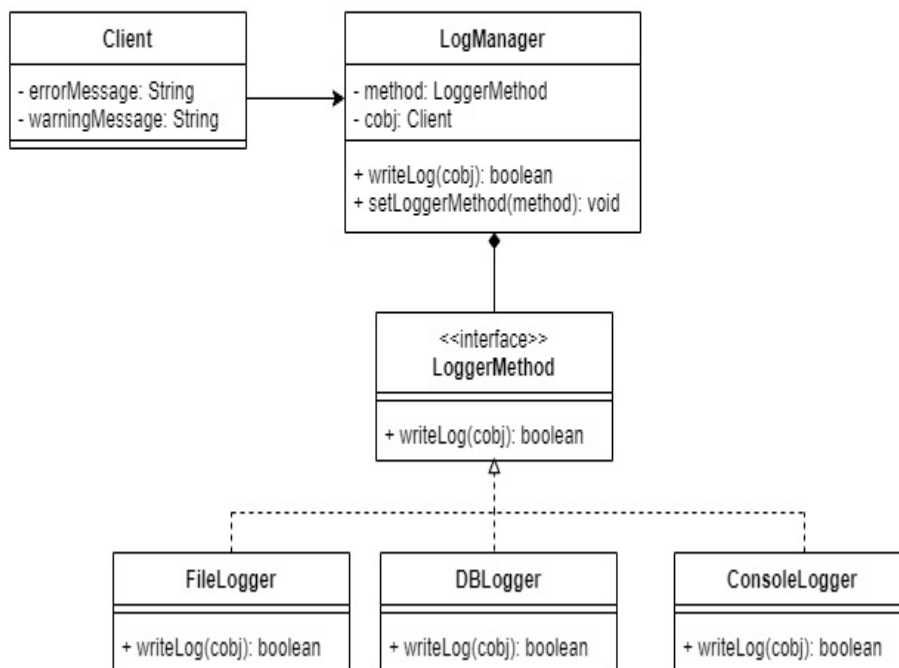
**Question Number : 18 Question Id : 640653821428 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4**

**Question Label : Multiple Choice Question**

Consider a scenario where we use a class **LogManager** to log error and warning messages from various **Client** objects. Class **LogManager** can log the error and warning messages in a file or a database or console. However, in future, more message logging options can be added without violating the open-close principle.

We apply a design pattern **X**, and the designed class diagram that is given as follows:



Identify the design pattern referred to as **X**.

**Options :**

6406532756833. ✖ Iterator design pattern

6406532756834. ✖ Adapter design pattern

6406532756835. ✔ Strategy design pattern

6406532756836.

✖ Facade design pattern

**Question Number : 19 Question Id : 640653821429 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4**

Question Label : Multiple Choice Question

Match the following:

Terms	Descriptions
1. Error	A. Observable errors like incorrect output value, exception etc.
2. Failure	B. Where the failure has occurred
3. Fault	C. Determining the cause of failure
4. Debugging	D. Discrepancy between actual behavior and intended behavior

**Options :**

6406532756837. ✖ 1-B, 2-D, 3-C, 4-A

6406532756838. ✖ 1-B, 2-C, 3-D, 4-A

6406532756839. ✔ 1-D, 2-A, 3-B, 4-C

6406532756840. ✖ 1-D, 2-B, 3-A, 4-C

**Question Number : 20 Question Id : 640653821430 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4**

Question Label : Multiple Choice Question

A developer has implemented a module. However, while testing the module, he discovered that the program is throwing exceptions in several cases. To facilitate debugging, the programmer employed a variety of tools to determine the frequency and duration of execution for different

parts of the program.

In the above scenario, which of the following debugging techniques is used by the developer?

**Options :**

6406532756841. ✖ Logging

6406532756842. ✖ Dump and diff

6406532756843. ✖ Stepping in debugger

6406532756844. ✔ Profiling tool

**Question Number : 21 Question Id : 640653821432 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4**

Question Label : Multiple Choice Question

Match the following regarding the outcomes of the design process:

Characteristics	Descriptions
1. Components	A. Required to implement individual components
2. Interfaces	B. Suitable for storing and managing data
3. Data structures	C. Should accomplish some well-defined tasks
4. Algorithms	D. Connect the components with each other

**Options :**

6406532756849. ✖ 1-B, 2-A, 3-C, 4-D

6406532756850. ✖ 1-B, 2-C, 3-A, 4-D

6406532756851. ✔ 1-C, 2-D, 3-B, 4-A

6406532756852. ✖ 1-C, 2-A, 3-B, 4-D



**Question Number : 22 Question Id : 640653821433 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4**

Question Label : Multiple Choice Question

A e-shopping application has a module called **Delivery**, which needs to refer to the internals of the **Order** module in order to decide the mode of delivery.

Identify the type of coupling in the given context.

**Options :**

6406532756853. ✖ Common coupling

6406532756854. ✔ Content coupling

6406532756855. ✖ Control coupling

6406532756856. ✖ Data coupling

**Question Number : 23 Question Id : 640653821435 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4**

Question Label : Multiple Choice Question

What is the main objective of *sprint review* in agile project management?

**Options :**

6406532756861. ✖ To decide which work is to be done in the current sprint and how the chosen work will be done.

6406532756862. ✖ To prioritize the work for the development team.

6406532756863. ✔ Team demonstrates what they have completed in the given sprint.

6406532756864. ✖ To evaluate the last sprint - team dynamics, processes, tools etc.

**Question Number : 24 Question Id : 640653821439 Question Type : MCQ Is Question**



**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4**

Question Label : Multiple Choice Question

An organization has provided a web application that employees can use to apply for leaves as well as manage holidays and leaves efficiently. The interface displays a calendar for the employee to choose their dates when completing the leave application. The calendar disables all weekends and official holidays of the organization.

Which of the following heuristics of UI design is satisfied by the mobile app?

**Options :**

6406532756877. ✔ Prevent errors

6406532756878. ✖ Show status

6406532756879. ✖ Support error recovery

6406532756880. ✖ Provide help

**Question Number : 25 Question Id : 640653821440 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4**

Question Label : Multiple Choice Question

Consider that an organization developed an IDE for a new programming language. However, the developers avoided implementing the shortcut keys that are usually used in all the popular IDEs for functionalities like select, select all, cut, copy, paste, etc. and instead implemented some new shortcut keys.

Which of the following **usability goals** is not satisfied by the design of the IDE?

**Options :**

6406532756881. ✖ Effectiveness

6406532756882.

✖ Efficiency

6406532756883. ✖ Safe to use

6406532756884. ✖ Learnability

6406532756885. ✔ Memorability

**Sub-Section Number :** 5  
**Sub-Section Id :** 640653120913  
**Question Shuffling Allowed :** Yes  
**Is Section Default? :** null

**Question Number : 26 Question Id : 640653821436 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**  
**Correct Marks : 5**

Question Label : Multiple Choice Question

Consider the following risks identified for a project, their probability of occurring, and the impact of each risk.

Risk	Probability	Impact
Personnel shortfall	0.5	2
Schedule slippage	0.2	3
Shortcomings in external components	0.2	1
Insufficient domain knowledge	0.6	2

Which of the following risks must be dealt with first by the project manager?

**Options :**

6406532756865. ✖ Personnel shortfall

6406532756866. ✖ Schedule slippage

6406532756867. ✖ Shortcomings in external components

6406532756868. ✔ Insufficient domain knowledge

**Question Number : 27 Question Id : 640653821437 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 5**

Question Label : Multiple Choice Question

A software company has to develop a smart meter that, along with recording the electric consumption information, also provides services like monitoring consumption behavior, automatic billing, etc. The development team has to build the software that is strongly coupled with the hardware of the smart meter. The company applies COCOMO model for calculating the effort to develop the system.

The values for the constants in the COCOMO model for the different types of the project are as follows:

- Organic project:  $a = 2.4$ ,  $b = 1.05$
- Semi-organic project:  $a = 3.0$ ,  $b = 1.12$
- Embedded project:  $a = 3.6$ ,  $b = 1.20$

Considering the source code of 2,00,000 lines and effort adjustment factor = 1.48, what is the final estimated effort for the project?

**Options :**

6406532756869. ✖ 628 person-month

6406532756870. ✖ 1677 person-month

6406532756871. ✖ 2,079 person-month

6406532756872. ✔ 3,075 person-month