

Sw Engg

Section Id : 64065349290

Section Number : 1

Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	29
Number of Questions to be attempted :	29
Section Marks :	100
Display Number Panel :	Yes
Section Negative Marks :	0
Group All Questions :	No
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	640653103469
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 1 Question Id : 640653698406 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 :

6406532332491.  YES

6406532332492. ✖ NO

Sub-Section Number :	2
Sub-Section Id :	640653103470
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 2 Question Id : 640653698408 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

A software company has to develop a portal that enables a user to search for a specific product by providing some product details. The portal queries and gathers details from different websites and puts them together on a single page.

Consider the following two requirements:

Requirement 1: The portal must gather information for the given product from all the relevant websites and display it to the user.

Requirement 2: Given the product details, the portal must complete the gathering and display of information within 10 secs.

Which of the following statement is true?

Options :

6406532332497. ✔ Requirement 1 is a functional requirement, whereas Requirement 2 is a non-functional requirement

6406532332498. ✖ Requirement 2 is a functional requirement, whereas Requirement 1 is a non-functional requirement

6406532332499. ✖ Both requirements are functional requirements

6406532332500. ✖ Both the requirements are non-functional requirements

Sub-Section Number : 3
Sub-Section Id : 640653103471
Question Shuffling Allowed : Yes
Is Section Default? : null

Question Number : 3 Question Id : 640653698412 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 set of modules is said to have high cohesion and low coupling, which implies _____ .

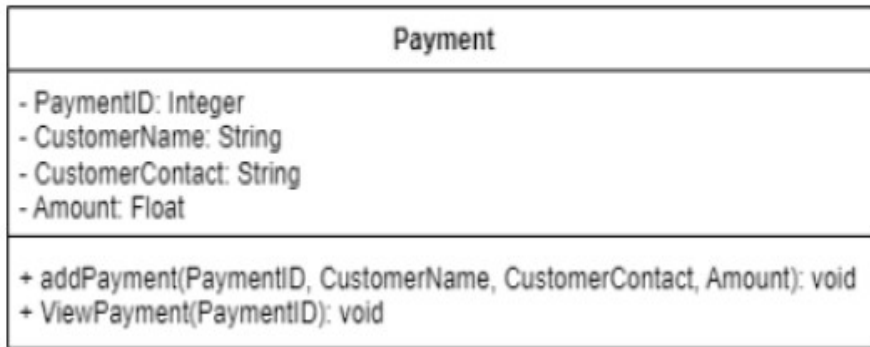
Options :

6406532332515. ✖ The functions in each module are performing varied operations, and a lot of data is interchanged between the modules
6406532332516. ✖ The functions in each module are together performing a single operation, and a lot of data is interchanged between the modules
6406532332517. ✔ The functions in each module are together performing a single operation, and the degree of interaction between the modules is very low
6406532332518. ✖ The functions in each module are together performing a single operation, and the degree of interaction between the modules is very high

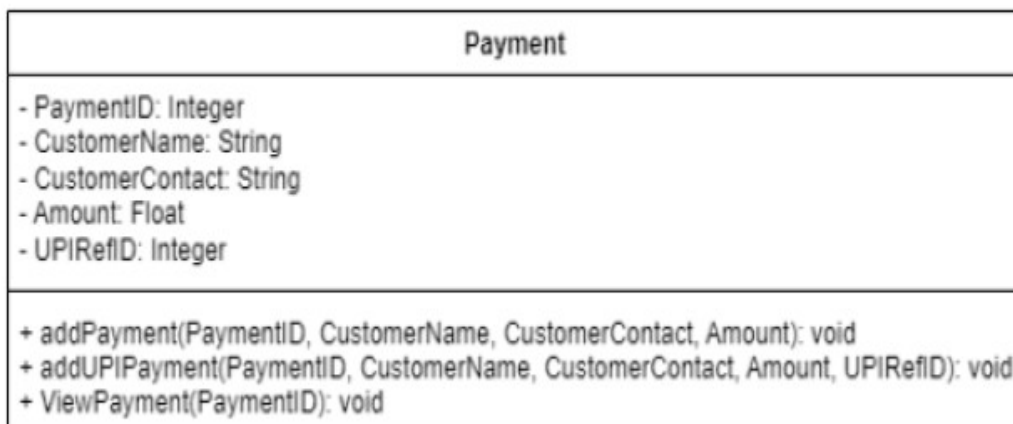
Question Number : 4 Question Id : 640653698417 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
Correct Marks : 3

Question Label : Multiple Choice Question

Consider a billing software used in a grocery store to keep a record of every payment made. Initially, the Payment class was designed to accept physical payments (payment by cash) only. The figure below shows the class diagram of the Payment class.



However, now there is a need to receive payments by UPI. Thus, the Payment class is modified as shown in the class diagram below.



Identify the SOLID principle that is violated by the design.

Options :

6406532332535. ✖ Single responsibility principle

6406532332536. ✔ Open-close principle

6406532332537. ✖ Liskov substitution principle

6406532332538. ✖ Interface segregation principle

6406532332539. ✖ Dependency inversion principle

Question Number : 5 Question Id : 640653698418 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 programmer is developing a module for a big software project. The module has 50 functions. After writing the code, the programmer has observed that he is not getting the desired output, and he suspects some of the functions are not getting called. In order to identify those functions, he places some print statements in all the functions.

What kind of debugging technique does the programmer employ in this case?

Options :

6406532332540. ✖ Breakpoint debugging

6406532332541. ✔ Print debugging

6406532332542. ✖ Step-by-step debugging

6406532332543. ✖ Exception-based debugging

Sub-Section Number : 4

Sub-Section Id : 640653103472

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 6 Question Id : 640653698416 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

During debugging, a developer finds out the event that triggers an incorrect behavior. He follows the data control flow ahead until the incorrect state is reached.

Which of the following debugging strategies was chosen by the developer?

Options :

6406532332531. ✖ Input manipulation

6406532332532. ✖ Backwards strategy

6406532332533. ✔ Forwards strategy

6406532332534. ✖ Blackbox debugging

Question Number : 7 Question Id : 640653698419 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 software company is developing inventory management software for a medicine distributor. The software needs to be connected to a third-party module for invoice generation and printing. However, the data format used by the software is not compatible with the third-party module. Therefore, the development team has introduced a new class that converts the data format so that it is supported by the third-party module and has integrated the third-party module with the software. Which kind of design pattern is used in this case?

Options :

6406532332544. ✖ Builder design pattern

6406532332545. ✖ Facade design pattern

6406532332546. ✔ Adapter design pattern

6406532332547. ✖ Strategy design pattern

Question Number : 8 Question Id : 640653698424 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.

```
1 def getDiscount(price):
2     if price <= 0:
3         print("Invalid input")
4         discount = 0
5     elif price < 2000:
6         discount = price * 0.1
7     else:
8         discount = price * 0.2
9     return discount
```

Identify the set of valid test cases for black box testing using the equivalence class technique.

Options :

6406532332557. ✖ {price = 0, price = 2000}

6406532332558. ✖ {price = -10, price = 0, price = 1200}

6406532332559. ✔ {price = 0, price = 1800, price = 3800}

6406532332560. ✖ {price = -10, price = 0, price = 1010, price = 1999}

Question Number : 9 Question Id : 640653698428 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 deployment environments.

Deployment environment	Key activity
1. Development	A. Live environment where real users interact with the system
2. Testing	B. Provides the local environment of a developer
3. Staging	C. Integration and system testing are performed
4. Production	D. Exactly resembles the production environment to conduct various performance and stress testing

Options :

6406532332575. ✖ 1-B, 2-C, 3-A, 4-D

6406532332576. ✔ 1-B, 2-C, 3-D, 4-A

6406532332577. ✖ 1-A, 2-C, 3-D, 4-B

6406532332578. ✖ 1-A, 2-C, 3-B, 4-D

Question Number : 10 Question Id : 640653698429 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 performance enhancement strategies of the web applications suggests compressing the static pages using tools like Brotli and Gzip?

Options :

6406532332579. ✖ Caching

6406532332580. ✔ Quick loading and rendering

6406532332581. ✖ Task queues

6406532332582. ✖ Monitoring

Question Number : 11 Question Id : 640653698434 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.

Role	Responsibility
1. Data scientists	A. Talk to users, create prototypes
2. Marketing Team	B. Help in resolving client issues
3. Designers	C. Conduct market research, identify audiences
4. Support Team	D. Analyze the data generated by different teams and users

Options :

6406532332601. ✖ 1-C, 2-D, 3-B, 4-A

6406532332602. ✖ 1-C, 2-D, 3-A, 4-B

6406532332603. ✔ 1-D, 2-C, 3-A, 4-B

6406532332604. ✖ 1-D, 2-A, 3-B, 4-C

Sub-Section Number :5

Sub-Section Id :640653103473

Question Shuffling Allowed :Yes

Is Section Default? :null

Question Number : 12 Question Id : 640653698438 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

The current version of the local branch of your repository is given below. You have made some changes to the files `scan.py` and `run.py`.

```
1 $ tree
2 .
3 |-- config
4 | |-- initial.config
5 |-- log.py
6 |-- main.py
7 |-- scan.py
8 |-- run.py
9 1 directory, 5 files
```

Consider the below command output that gives the current status of your local repository. It shows that you have edited some files but have not added them to the staging area.

```
1 $ git status
2 On branch master
3 untracked files:
4   (use "git add <file>..." to include in what will be committed)
5       log.py
6       scan.py
7       run.py
8
9 nothing added to commit but untracked files present (use "git add" to track)
```

You wish to finally push your changes to the remote branch. What sequence of the below commands can be executed to push your local changes to the remote branch? (Given below are just the commands for simplicity, without the arguments.)

- I. `git clone`
- II. `git push`
- III. `git pull`
- IV. `git add`
- V. `git commit`

Options :

6406532332613. ✖ I --> V --> IV --> II

6406532332614. ✖ I --> III --> II --> IV --> V

6406532332615. ✔ IV --> V --> II

6406532332616. ✖ III --> II --> V

Sub-Section Number : 6
Sub-Section Id : 640653103474
Question Shuffling Allowed : Yes
Is Section Default? : null

Question Number : 13 Question Id : 640653698407 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Max. Selectable Options : 0

Question Label : Multiple Select Question

Software can be divided into manageable components.

Find the one(s) that are TRUE about breaking software into components from the list below.

Options :

6406532332493. ✔ It is a way of breaking the complexity of the system into manageable parts

6406532332494. ✔ It enables different teams to work on different components

6406532332495. ✖ Everyone on the development team must know how to work with all the components

6406532332496. ✔ It conceals implementation details while providing an interface for others to display its capabilities

Question Number : 14 Question Id : 640653698409 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following belong to **users experience goals**?

Options :

6406532332501. ✔ Motivating

6406532332502. ✖ Effective and efficient

6406532332503. ✔ Satisfying

6406532332504. ✖ Safe and less error-prone

6406532332505. ✔ entertaining

6406532332506. ✖ durable

Question Number : 15 Question Id : 640653698410 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Max. Selectable Options : 0

Question Label : Multiple Select Question

A project requires 240 person-months of development time. Which of the following statements is/are true?

Options :

6406532332507. ✖ It requires 240 developers to complete the project

6406532332508. ✔ It requires 10 developers to complete the project in 2 years

6406532332509. ✔ It requires 120 developers to complete the project in 2 months

6406532332510. ✖ It requires 24 developers to complete the project in 10 years

Sub-Section Number :	7
Sub-Section Id :	640653103475
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 16 Question Id : 640653698411 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Each of the figures below represents modules of a software system, and arrows denote the interaction between the modules.

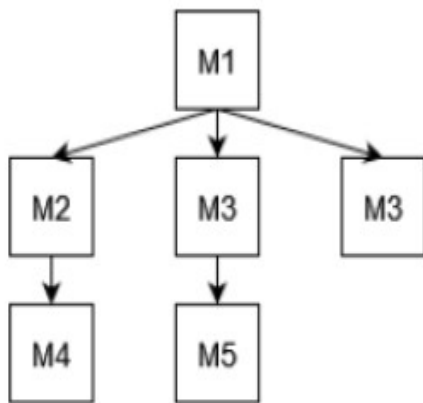


Figure 1

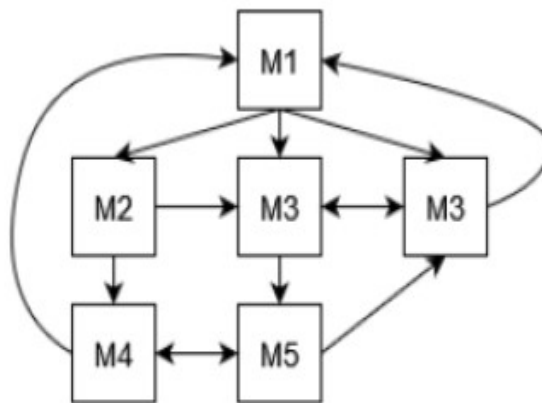


Figure 2

Select the reasons that make the Figure 1 a better design than Figure 2.

Options :

6406532332511. ✖ Figure 1 shows the higher coupling between the modules compared to Figure 2

6406532332512. ✔ Figure 1 shows the lower coupling between the modules compared to Figure 2

6406532332513. ✔ The modules in Figure 1 are highly cohesive compared to Figure 2

6406532332514. ✖ The modules in Figure 2 are highly cohesive compared to Figure 1

Question Number : 17 Question Id : 640653698414 Question Type : MSQ Is Question

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

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Identify the statements which are true and related to code smells.

Options :

6406532332523. ✖ All commented-out codes should be retained in the final code base

6406532332524. ✖ It is better to have a function that does many things

6406532332525. ✔ A function ideally should not have any argument, however, in practical

situations, it should not use more than three arguments

6406532332526. ✔ A function should not use any flag (based on which function perform certain operations) argument

Question Number : 18 Question Id : 640653698415 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following statements about the flask framework is/are correct?

Options :

6406532332527. ✖ It is a mobile application framework

6406532332528. ✔ It is a web application framework

6406532332529. ✔ It is a micro-framework

6406532332530. ✖ It imposes several restrictions on developing applications, like the kind of databases that can be used and the type of web servers that can be used

Question Number : 19 Question Id : 640653698427 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following are considered the best practices for continuous integration?

Options :

6406532332570. ✖ Maintain multiple source repositories for each version of the code base

6406532332571. ✔ Automate the build using build tools like Ant and Builder

6406532332572. ✔ Automate the tests for the build, and make it self-testing

6406532332573.

✖ Avoid frequent commits, and commit all the source code repositories only when some major updates are done

6406532332574. ✔ Fix the broken builds immediately

Question Number : 20 Question Id : 640653698432 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Choose the correct statements regarding software organizations.

Options :

6406532332592. ✔ In a flat organizational structure, there are fewer levels of hierarchy, promoting a more collaborative environment

6406532332593. ✖ Agile methodologies are primarily suitable for large, bureaucratic organizations

6406532332594. ✔ DevOps is a cultural and professional movement that aims to improve collaboration between software development and IT operations

6406532332595. ✖ Waterfall model is an agile software development methodology

6406532332596. ✔ The Scrum framework defines roles, events, and artifacts for organizing and managing work

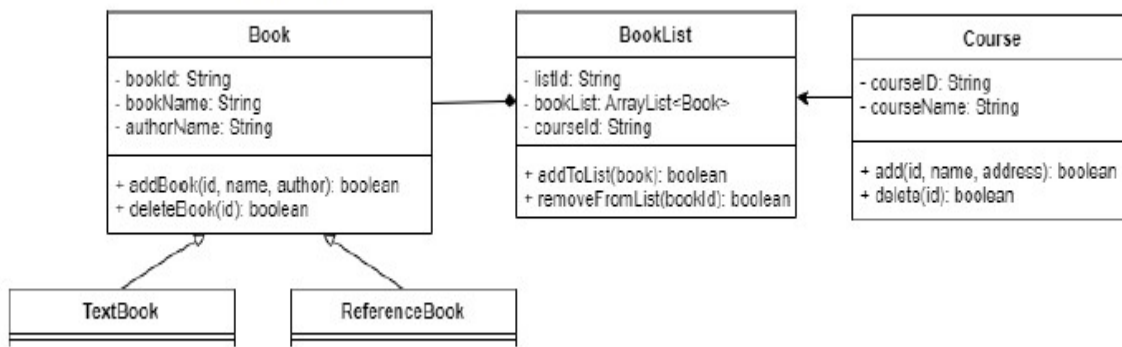
Sub-Section Number :	8
Sub-Section Id :	640653103476
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 21 Question Id : 640653698413 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 class diagram given below.



Which of the following is/are true about the class diagram?

Options :

6406532332519. ✖ There is an aggregation relation between class Course and class BookList

6406532332520. ✔ There is an aggregation relation between class Book and class BookList

6406532332521. ✔ There is an inheritance relation between class Book and classes TextBook and ReferenceBook

6406532332522. ✖ There is an aggregation relation between class Book and classes TextBook and ReferenceBook

Question Number : 22 Question Id : 640653698433 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

From the given options, identify the primary responsibilities of product managers in a large software organization

Options :

6406532332597. ✔ To work closely with the marketing and sales teams to understand the business goals

6406532332598. ✖ To talk to the users and transform the requirements into solutions

6406532332599.

✔ To understand the technical stack in order to appreciate the level of effort involved and to take important decisions

6406532332600. ✖ To analyze the data generated by different teams and users to help the organization make better decisions

Sub-Section Number : 9
Sub-Section Id : 640653103477
Question Shuffling Allowed : Yes
Is Section Default? : null

Question Number : 23 Question Id : 640653698425 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following integration testing approaches may require drivers?

Options :

6406532332561. ✖ Big bang approach

6406532332562. ✔ Bottom up approach

6406532332563. ✖ Top down approach

6406532332564. ✔ Mixed approach

Question Number : 24 Question Id : 640653698426 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Max. Selectable Options : 0

Question Label : Multiple Select Question

Choose the correct statements regarding Test-Driven Development (TDD).

Options :

6406532332565. ✖ TDD involves writing test cases after the implementation of the code

6406532332566. ✔ TDD follows the cycle of "Red-Green-Refactor"

6406532332567. ✖ TDD encourages developers to write production code without any testing

6406532332568. ✔ In TDD, tests are written to validate the expected behavior of the code before the code is implemented

6406532332569. ✖ TDD is not suitable for agile development methodologies

Question Number : 25 Question Id : 640653698430 Question Type : MSQ Is Question

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

Correct Marks : 5 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following are the benefits of continuous integration?

Options :

6406532332583. ✔ Reduces deployment time

6406532332584. ✖ No initial effort is required to set up the process

6406532332585. ✔ Users can see the initial prototype

6406532332586. ✖ Discourage modular coding

Question Number : 26 Question Id : 640653698431 Question Type : MSQ Is Question

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

Correct Marks : 5 Max. Selectable Options : 0

Question Label : Multiple Select Question

Choose the correct statements about continuous integration (CI).

Options :

6406532332587. ✔ CI is a software development practice where code changes are tested and

integrated into the main codebase frequently

6406532332588. ✓ Jenkins and Travis CI are examples of CI tools

6406532332589. ✓ CI helps identify and fix integration issues early in the development process

6406532332590. ✖ Continuous Deployment (CD) is synonymous with continuous integration

6406532332591. ✖ CI is only beneficial for small development teams

Sub-Section Number :	10
Sub-Section Id :	640653103478
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Id : 640653698421 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Question Numbers : (27 to 28)

Question Label : Comprehension

Consider the following code base in Python, and answer the given subquestions.

```
1 def dayStatus(day):
2     if day <= 0 or day > 7:
3         print("Invalid day")
4     else:
5         if day < 6:
6             print("weekday")
7         else
8             print("weekend")
```

Sub questions

Question Number : 27 Question Id : 640653698422 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 2 Max. Selectable Options : 0 Question Label : Multiple Select Question

Identify the sets of valid test cases for branch coverage.

Options :

6406532332549. ✖ {day = 0, day = 5}

6406532332550. ✖ {day = -1, day = 5, day = 8}

6406532332551. ✔ {day = 0, day = 5, day = 7}

6406532332552. ✔ {day = 5, day = 6, day = 9}

Question Number : 28 Question Id : 640653698423 Question Type : MSQ Is Question

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

Correct Marks : 2 Max. Selectable Options : 0

Question Label : Multiple Select Question

Identify the sets of valid test cases for multiple condition coverage.

Options :

6406532332553. ✔ {day = 0, day = 8, day = 5, day = 7}

6406532332554. ✖ {day = -1, day = 8, day = 5, day = 1}

6406532332555. ✖ {day = 0, day = 5, day = 7}

6406532332556. ✖ {day = 5, day = 6, day = 9}

Question Id : 640653698435 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix

Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (29 to 30)

Question Label : Comprehension

Answer the given subquestions.

Sub questions

Question Number : 29 Question Id : 640653698436 Question Type : MCQ Is Question

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

Correct Marks : 2

Question Label : Multiple Choice Question

Which of the following teams in a software organization is primarily responsible for laying down the terms of service for its software products?

Options :

6406532332605. ✖ Sales team

6406532332606. ✖ Support team

6406532332607. ✔ Ethics and policy specialists

6406532332608. ✖ Data scientists

Question Number : 30 Question Id : 640653698437 Question Type : MCQ Is Question

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

Correct Marks : 2

Question Label : Multiple Choice Question

IDEs are very useful in the software development process, mainly because _____ .

Options :

6406532332609. ✖ they are useful in documenting and archiving knowledge of one project so that it can be reused in another project

6406532332610. ✖ they are useful for sharing documents and archiving decisions

6406532332611. ✖ they enable all the members of the team to get a big picture as well as a detailed view of progress in the software development

6406532332612. ✔ they help the developers become more productive

Sub-Section Number : 11

Sub-Section Id : 640653103479

Question Shuffling Allowed : Yes

Is Section Default? :

null

Question Number : 31 Question Id : 640653698420 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Short Answer Question

Consider the testing of a module of a smartwatch software that takes care of measuring the pulse rate. It sets the status message as "error" if the reading of the pulse rate is < 40 or > 150 . It sets the status message as "high risk" in case the reading is ≥ 40 and < 60 , or > 120 and ≤ 150 . Otherwise, it sets the status message as "normal". (All the data is fictitious) Identify the number of equivalence classes for black box testing.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

5