

Sw Engg

Section Id :	64065364130
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	25
Number of Questions to be attempted :	25
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 :	No
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	640653134082
Question Shuffling Allowed :	No

Question Number : 18 Question Id : 640653904048 Question Type : MCQ Calculator : Yes 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 :

6406533044257. ✓ YES

6406533044258. ✗ NO

Sub-Section Number :	2
Sub-Section Id :	640653134083
Question Shuffling Allowed :	Yes

Question Number : 19 Question Id : 640653904049 Question Type : MCQ Calculator : Yes Correct Marks : 3

Question Label : Multiple Choice Question

Which of the following is the primary responsibility of the marketing team at a software company?

Options :

6406533044259. ✖ To communicate with users and create prototypes.

6406533044260. ✔ To conduct market research to identify potential customers.

6406533044261. ✖ To analyze data generated from various teams and users in order to assist the organization in making better decisions.

6406533044262. ✖ To address and resolve issues that clients encounter.

Question Number : 20 Question Id : 640653904056 Question Type : MCQ Calculator : Yes

Correct Marks : 3

Question Label : Multiple Choice Question

In the scrum framework, which role is responsible to keep track of all the activities of a given sprint and ensuring that all the activities are completed successfully?

Options :

6406533044287. ✖ Product owner

6406533044288. ✔ Scrum master

6406533044289. ✖ Development team

6406533044290. ✖ Client

Question Number : 21 Question Id : 640653904062 Question Type : MCQ Calculator : Yes

Correct Marks : 3

Question Label : Multiple Choice Question

Consider a software module in which all the functions refer to or update the same data structure.

Identify the type of cohesion the given module has.

Options :

6406533044313. ✖ Coincidental cohesion

6406533044314. ✖ Procedural cohesion

6406533044315. ✔ Communicational cohesion

6406533044316. ✖ Sequential Cohesion

Question Number : 22 Question Id : 640653904063 Question Type : MCQ Calculator : Yes

Correct Marks : 3

Question Label : Multiple Choice Question

Which of the following diagrams models the flow of control among computational activities?

Options :

6406533044317. ✖ Class diagram

6406533044318. ✖ State machine diagram

6406533044319. ✔ Activity view

6406533044320. ✖ Interaction view

Question Number : 23 Question Id : 640653904065 Question Type : MCQ Calculator : Yes

Correct Marks : 3

Question Label : Multiple Choice Question

Match the following terms regarding *raw metrics* with their definition.

Terms	Definitions
1. LOC	A. Number of source lines in code
2. LLOC	B. Total number of lines of code
3. SLOC	C. Number of logical lines in code
4. Comments	D. Number of comment lines

Options :

6406533044325. ✖ 1-B, 2-D, 3-C, 4-A

6406533044326. ✖ 1-B, 2-D, 3-A, 4-C

6406533044327. ✔ 1-B, 2-C, 3-A, 4-D

6406533044328. ✖ 1-C, 2-A, 3-B, 4-D

Question Number : 24 Question Id : 640653904066 Question Type : MCQ Calculator : Yes

Correct Marks : 3

Question Label : Multiple Choice Question

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

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

Options :

6406533044329. ✖ Input manipulation

6406533044330. ✖ Backwards strategy

6406533044331. ✔ Forwards strategy

6406533044332. ✖ Blackbox debugging

Question Number : 25 Question Id : 640653904073 Question Type : MCQ Calculator : Yes

Correct Marks : 3

Question Label : Multiple Choice Question

Which type of deployment environment is also known as the live environment where all the users can interact with the deployed system?

Options :

6406533044353. ✖ Development

6406533044354. ✖ Testing

6406533044355. ✖ Staging

6406533044356. ✓ Production

Sub-Section Number :	3
Sub-Section Id :	640653134084
Question Shuffling Allowed :	Yes

Question Number : 26 Question Id : 640653904051 Question Type : MCQ Calculator : Yes
Correct Marks : 4

Question Label : Multiple Choice Question

Which of the following is considered as the primary objective of caching to enhance performance of web applications?

Options :

- 6406533044267. ✓ It stores the results of common operations in memory.
- 6406533044268. ✗ It executes time consuming tasks outside the HTTP request-response cycle.
- 6406533044269. ✗ It compresses static pages.
- 6406533044270. ✗ It can be used to analyze page resources, find optimization suggestions, check SEO and accessibility metrics and calculate your performance score.

Question Number : 27 Question Id : 640653904052 Question Type : MCQ Calculator : Yes
Correct Marks : 4

Question Label : Multiple Choice Question

In which of the software deployment strategies the users are allowed to choose the versions of software they want to use?

Options :

- 6406533044271. ✗ Blue/Green deployment
- 6406533044272. ✗ Canary deployment
- 6406533044273. ✓ Versioned deployment
- 6406533044274. ✗ None of these

Question Number : 28 Question Id : 640653904055 Question Type : MCQ Calculator : Yes
Correct Marks : 4

Question Label : Multiple Choice Question

Consider an organic project that estimated 3,00,000 lines of code.

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 that the project needs to be completed in 10 months, approximately how many staff required to be allocated for the project?

Options :

6406533044283. ✖ 179

6406533044284. ✔ 96

6406533044285. ✖ 338

6406533044286. ✖ 57

Question Number : 29 Question Id : 640653904057 Question Type : MCQ Calculator : Yes

Correct Marks : 4

Question Label : Multiple Choice Question

Suppose you are creating a prototype for a web application using tools like Photoshop and PowerPoint.

In the above case, identify the type of prototype technique you have chosen.

Options :

6406533044291. ✖ Storyboards

6406533044292. ✖ Paper prototype

6406533044293. ✔ Digital mock-ups

6406533044294. ✖ Interactive prototype

Question Number : 30 Question Id : 640653904058 Question Type : MCQ Calculator : Yes

Correct Marks : 4

Question Label : Multiple Choice Question

Consider a scenario where a bus company has decided not to allow seat bookings for their bus more than three months in advance. As a result, on their bus booking website, the UI does not allow you to select a booking date that is more than three months away. Which of the following heuristics for UI evaluation does the app satisfy?

Options :

6406533044295. ✔ Prevent errors

6406533044296. ✖ Show status

6406533044297. ✖ Support error recovery

6406533044298. ✖ Provide help

Question Number : 31 Question Id : 640653904059 Question Type : MCQ Calculator : Yes Correct Marks : 4

Question Label : Multiple Choice Question

Consider an EdTech company that decided to develop an educational portal based on GenAI services. To collect requirements for the proposed development, the company needs to gather responses from a very large group of users who are largely spread all over the world. Which of the following requirement gathering techniques will be most suitable in the given scenario?

Options :

6406533044299. ✔ Questionnaires

6406533044300. ✖ Interviews

6406533044301. ✖ Focus group

6406533044302. ✖ Documentations

Question Number : 32 Question Id : 640653904060 Question Type : MCQ Calculator : Yes Correct Marks : 4

Question Label : Multiple Choice Question

Which of the SMART characteristics of user stories specifies that the story must provide business value to one or more stakeholders?

Options :

6406533044303. ✖ Specific

6406533044304. ✖ Measurable

6406533044305. ✖ Achievable

6406533044306. ✔ Relevant

6406533044307. ✖ Timeboxed

Question Number : 33 Question Id : 640653904061 Question Type : MCQ Calculator : Yes Correct Marks : 4

Question Label : Multiple Choice Question

A software company has developed and released a job portal that allows job seekers to apply for different organizations at different positions. Following its release, the company received numerous complaints stating that the website generates an internal server error when an applicant enters 0 in the experience field. The software company has decided to correct the problem. Identify the phase in which the correction has to be made.

Options :

6406533044308. ✖ Requirements gathering

6406533044309. ✖ Design

6406533044310. ✖ Development

6406533044311. ✖ Testing

6406533044312. ✔ Maintenance

Question Number : 34 Question Id : 640653904067 Question Type : MCQ Calculator : Yes

Correct Marks : 4

Question Label : Multiple Choice Question

Consider the Python function below.

```
def lsearch(items, n, key):  
    for i in range(0, n):  
        if (items[i] == key):  
            return i  
    return -1
```

What is the cyclomatic complexity of the function?

Options :

6406533044333. ✖ 2

6406533044334. ✔ 3

6406533044335. ✖ 4

6406533044336. ✖ 5

Question Number : 35 Question Id : 640653904074 Question Type : MCQ Calculator : Yes

Correct Marks : 4

Question Label : Multiple Choice Question

Consider a mobile app that enables users to send and receive music files and audio messages directly from each other. Users exchange music files and audio messages without the need for a centralized server.

What kind of software architecture does the mobile app most likely use?

Options :

6406533044357. ✖ Client-server system

6406533044358. ✖ Pipe and filter

6406533044359. ✖ Model view controller

6406533044360. ✔ Peer-to-peer architecture

Sub-Section Number :

4

Sub-Section Id :

640653134085

Question Shuffling Allowed :

Yes

Question Number : 36 Question Id : 640653904054 Question Type : MCQ Calculator : Yes

Correct Marks : 5

Question Label : Multiple Choice Question

Consider the following table for risk assessment of a software project.

Risk	Probability	Assessed risk
Personnel shortfall	0.6	0.6
Shortcomings in external components	0.2	0.8
Schedule slippage	0.3	0.9
Product not competitive in the market	0.2	0.6

Which of the following risks has the most impact to the project?

Options :

6406533044279. ✖ Personnel shortfall

6406533044280. ✔ Shortcomings in external components

6406533044281. ✖ Schedule slippage

6406533044282. ✖ Product not competitive in the market

Question Number : 37 Question Id : 640653904075 Question Type : MCQ Calculator : Yes

Correct Marks : 5

Question Label : Multiple Choice Question

Consider the design of a mobile application that calculates BMI (body mass index) from the data captured by different types of smart watches. Different types of smart watches measure different health parameters like weight, height, etc. in different units; however, the `BMICalculator` class of the mobile application accepts the input in specific units. Therefore, the designers plan to utilize a design pattern known as *X*. The designers have added various classes like `HeightConvertor`, `WeightConvertor`, etc. that convert any unit used in the smart watches to the unit used in the mobile application. As a result, the mobile application becomes compatible with different kinds of smart phones.

Identify the design pattern referred to as *X*.

Options :

6406533044361. ✖ Iterator design pattern

6406533044362. ✔ Adapter design pattern

6406533044363. ✖ Strategy design pattern

6406533044364. ✖ Facade design pattern

Sub-Section Number :

5

Sub-Section Id :

640653134086

Question Shuffling Allowed :

Yes

Question Number : 38 Question Id : 640653904050 Question Type : MSQ Calculator : Yes

Correct Marks : 4 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following is/are the benefit(s) of using knowledge sharing tools?

Options :

6406533044263. ✓ It helps to document and archive the knowledge of one project that might be required in some other project.

6406533044264. ✗ It helps all members of the team to get a big picture as well as detailed view of progress.

6406533044265. ✓ It helps in easy migration of developers between different projects.

6406533044266. ✗ It helps the developers to become more productive by using tools like IDEs.

Question Number : 39 Question Id : 640653904053 Question Type : MSQ Calculator : Yes

Correct Marks : 4 Max. Selectable Options : 0

Question Label : Multiple Select Question

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

Options :

6406533044275. ✓ It is also known as pre-production environment.

6406533044276. ✗ It is also known as live environment where all the users can interact with the deployed system.

6406533044277. ✗ It is the local environment for individual developers that provides IDEs and other tools.

6406533044278. ✓ It exactly resembles the production environment, and it runs on a remote machine.

Question Number : 40 Question Id : 640653904072 Question Type : MSQ Calculator : Yes

Correct Marks : 4 Max. Selectable Options : 0

Question Label : Multiple Select Question

Consider the following code base in Python.

```
def computeBonus(income):  
    if income <= 0:  
        print("invalid input")  
    elif income < 10000:  
        return income * 0.05  
    elif income < 50000:  
        return income * 0.02  
    else:  
        return 0.0
```

Identify the set(s) of valid test cases for function `computeBonus` using the equivalence class technique.

Options :

6406533044349. ✖ {income = 0, income = 150000}

6406533044350. ✖ {income = -100, income = 0, income = 15000, income = 150000}

6406533044351. ✔ {income = -100, income = 7000, income = 15000, income = 150000}

6406533044352. ✔ {income = 0, income = 7000, income = 15000, income = 150000}

Sub-Section Number :

6

Sub-Section Id :

640653134087

Question Shuffling Allowed :

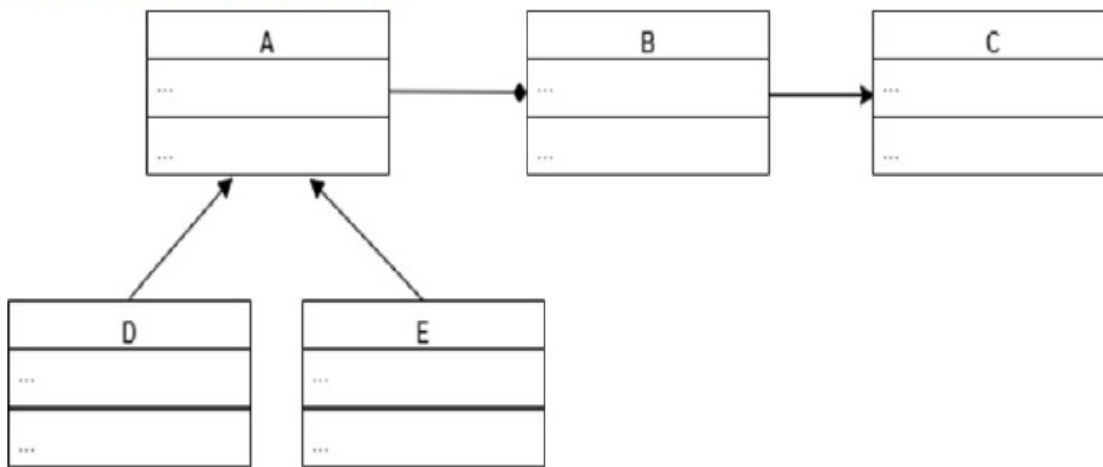
Yes

Question Number : 41 Question Id : 640653904064 Question Type : MSQ Calculator : Yes

Correct Marks : 5 Max. Selectable Options : 0

Question Label : Multiple Select Question

Consider the class diagram given below.



Which of the following statement(s) is/are true about the given class diagram?

Options :

6406533044321. ✖ A inherits from B

6406533044322. ✔ B is composition of A

6406533044323. ✔ B is associated with C

6406533044324. ✖ A is composition of D and E

Sub-Section Number :

7

Sub-Section Id :

640653134088

Question Shuffling Allowed :

No

Question Id : 640653904068 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None

Question Numbers : (42 to 44)

Question Label : Comprehension

Consider the Python function below.

```
def fact(n):  
    f = 1  
    if n < 0:  
        return -1    #invalid  
    else:  
        if n == 0 or n == 1:  
            return 1  
        for i in range(2, n):  
            f *= i  
        return f
```

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 42 Question Id : 640653904069 Question Type : MSQ Calculator : Yes

Correct Marks : 4 Max. Selectable Options : 0

Question Label : Multiple Select Question

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

Options :

6406533044337. ✖ {-5, 5}

6406533044338. ✔ {-5, 0, 2, 5}

6406533044339. ✖ {-5, 2, 5, 10}

6406533044340. ✔ {-5, 0, 1, 2, 5}

Question Number : 43 Question Id : 640653904070 Question Type : MCQ Calculator : Yes

Correct Marks : 4

Question Label : Multiple Choice Question

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

Options :

6406533044341. ✖ {-5, 5}

6406533044342. ✖ {-5, 0, 2, 5}

6406533044343. ✖ {-5, 2, 5, 10}

6406533044344. ✔ {-5, 0, 1, 2, 5}

Question Number : 44 Question Id : 640653904071 Question Type : MCQ Calculator : Yes

Correct Marks : 4

Question Label : Multiple Choice Question

Identify the number of linearly independent paths in the code base.

Options :

6406533044345. ✖ 2

6406533044346. ✖ 3

6406533044347. ✔ 4

6406533044348. ✖ 5