



United International University (UIU)

Dept. of Computer Science & Engineering (CSE)

Final Exam, Trimester: Spring 2023

Course Code: CSI 321/CSE 3421, Course Title: SOFTWARE ENGINEERING

Total Marks: 40, Duration: 2 hours

Any examinee found adopting unfair means will be expelled from the trimester/ program as per UIU disciplinary rules.

(Answer All Questions)

1. (a) Your team has been assigned to build a Chatting Application. Now, your team has already completed the coding portion, integrated the sub-modules and modules, and performed necessary unit and integration testing phases. Describe the other necessary testing types based on the Chatting Application that your team needs to perform before delivering the application to the client. [CO1] 4+4
- (b) Consider that, a glitch of a software has been found for which an authorized person cannot access a service for a limited period of time. Additionally, when someone performs an action on that software, no trace is being stored in the system. Which of the secured software properties are being violated here? Explain the violated properties in detail. [CO1]
2. (a) You are being assigned to develop a web application which generates statistics. One of its services is finding business analytics of e-commerce websites such as various buy-sell charts, demographic sell data, and so on. This application also provides various services such as providing data and statistics on population, export-import, finances, and so on. Which architectural pattern should you use in this scenario? Explain the features of this pattern in detail. Also differentiate between this pattern and any other architectural pattern you know. [CO2] 6+2
- (b) Explain SQL injection, and what measures can be taken to prevent it. [CO1]
3. (a) Does the given UI in fig.1 follow all the design considerations? If not, explain which of them are violated. [CO1] 4+4



Fig.1

- (b) Explain the following terms: [CO2]
 - i) API
 - ii) SOAP
 - iii) SDK
 - iv) JSON

4. (a) How is marketing documentation different from Architectural, Technical, and User-end documentation? Explain in detail considering an e-commerce website. [CO1] 4+4
- (b) You are assigned to develop a new software for a client. You have made a deal with the client to pay you extra for using confidential data for their software. Which of the principles of ACM code of ethics are violating in the above case. Explain in detail. [CO3]

5. What is CPM and why is it helpful for software project development? Find out the Critical Path and Critical Nodes for the following table. Also find out Early Start, Early Finish, Late Start, Late Finish of all the nodes using CPM. [CO2] 8

Node	Duration (Weeks)	Precedence
A	4	- ✓
B	6	A ✓
C	3	A ✓
D	5	A, B ✓
E	7	B, C ✓
F	3	A, D ✓
G	6	D, E ✓
H	4	B, F ✓
I	3	H ✓
J	8	H, I ✓