CS Fundamentals Question Bank

🕐 Duration – 60 minutes   🎯 Goal – Concept clarity & verbal explanation practice

Part 1 – Operating System

#	Question	Answer
1	What is an Operating System?	Software that manages hardware and software resources.
2	A process is _____	A program in execution.
3	Which component allocates CPU time to processes?	Scheduler / CPU scheduler.
4	Name any two process states.	Ready, Running (also Waiting, Terminated).
5	Example of process scheduling algorithm.	FCFS, SJF, Round Robin, Priority.
6	Which is the fairest scheduling method for time-sharing systems?	Round Robin.
7	Define context switch.	CPU saving current process state and loading a#ther's state.
8	What is deadlock?	Two or more processes waiting for each other's resources forever.
9	One solution to deadlock.	Resource ordering / Deadlock avoidance / Banker's algorithm.
10	Memory management techniques?	Paging and Segmentation.
11	Which function handles read/write to storage devices?	File Management module.
12	Short Explain: Why is OS called "Resource Manager"?	It allocates CPU, memory, and I/O to processes efficiently.

Part 2 – SDLC (Software Development Life Cycle)

#	Question	Answer
13	Define SDLC.	Structured process for developing software systematically.
14	Correct phase order in SDLC.	Requirement → Design → Coding → Testing → Deployment → Maintenance.
15	Goal of requirement phase.	Collect and document user needs.
16	Output of design phase.	System Architecture / Design Documents.
17	What happens in implementation phase?	Coding of modules as per design.
18	Purpose of testing phase.	To verify software meets requirements and has # major defects.
19	Difference between Waterfall and Agile.	Waterfall = sequential; Agile = iterative & feedback-driven.

20	Which model handles risk by iteration?	Spiral Model.
21	Two key roles in Agile team.	Scrum Master and Product Owner.
22	Deliverable at end of each Agile sprint.	Working increment of software.
23	Why is maintenance phase important?	Fixes bugs and adds enhancements after release.
24	Short Explain: Where did you apply SDLC in your project?	Example: Used Agile with two-week iterations for our e-commerce module.

Part 3 – Software Testing Concepts

#	Question	Answer
25	Define software testing.	Process of verifying software meets specified requirements.
26	Unit testing focuses on _____	Individual modules or functions.
27	Integration testing focuses on _____	Interaction between modules.
28	System testing checks _____	Entire software system as a whole.
29	Acceptance testing performed by _____	Client or end users.
30	Black box vs White box testing.	Black box → test functionality; White box → test internal logic.
31	Manual vs Automation testing.	Manual → human execution; Automation → tool /scripts.
32	Name any automation tool.	Selenium / JUnit / Postman.
33	Purpose of Regression testing.	Ensure new changes don't break existing features.
34	Smoke testing is also called _____	Build verification testing.
35	Performance testing checks _____	Speed, stability, and scalability under load.
36	Security testing focuses on _____	Protecting data and access controls.
37	Explain Defect Lifecycle steps.	New → Assigned → Fixed → Retested → Closed.
38	What is UAT?	User Acceptance Testing done by clients before deployment.
39	Example of a test case for login page.	Input valid credentials → expect redirect to dashboard.
40	Short Explain: Testing used in your project.	Example: Used black box and unit testing for order module.