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Paper Code : ESC501 Software Engineering

UPID : 005505

Time Allotted : 3 Hours

Full Marks : 70

The Figures in the margin indicate full marks.

Candidate are required to give their answers in their own words as far as practicable

Group-A (Very Short Answer Type Question)

1. Answer *any ten* of the following :

[1 x 10 = 10]

- (I) Boundary Value Analysis is a technique of _____ testing strategy.
- (II) PERT stands for _____.
- (III) Who are known as the inventors of UML?
- (IV) Which SDLC model has the provision of risk management?
- (V) What is decision table?
- (VI) CFG stands for _____.
- (VII) Which pair of functions are known as data functions in Function Point Analysis?
- (VIII) What is the notation for abstract class in UML class diagram?
- (IX) What type of feasibility study is required for user-friendliness of a system?
- (X) What type of coupling is it, if two modules share some global data items?
- (XI) Gamma testing is also known as _____.
- (XII) The _____ team structure, as the name implies, does not enforce any formal team hierarchy.

Group-B (Short Answer Type Question)

Answer *any three* of the following :

[5 x 3 = 15]

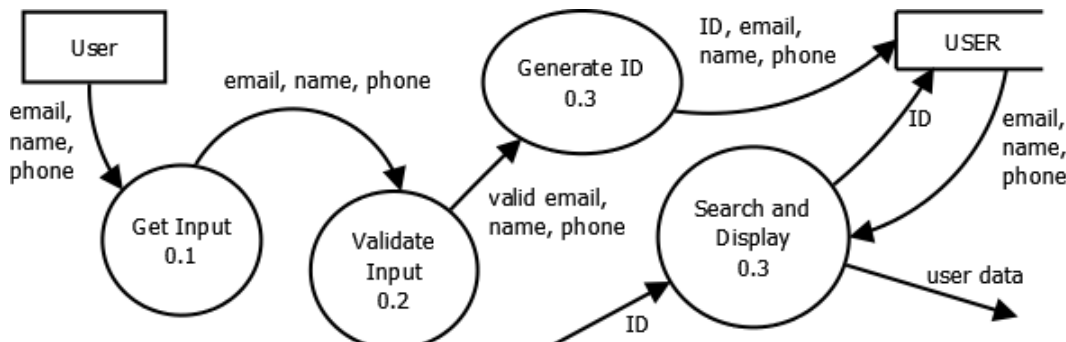
2. What is the feasibility study? Briefly explain different types of feasibility study. [5]
3. What is data dictionary? Why it is used? Give an example. [5]
4. What do you mean by System Documentation? Classify the different types of System Documentation. [5]
5. What is function point? Explain ILF and EIF in brief. [5]
6. What is coupling and cohesion? Briefly explain different types of cohesion. [5]

Group-C (Long Answer Type Question)

Answer *any three* of the following :

[15 x 3 = 45]

7. (a) What do you mean by physical and logical DFD? What are the advantages of physical DFD over logical DFD? [4]
- (b) Differentiate between physical and logical DFD with suitable diagrams as examples. [5]
- (c) Create data dictionary for the following DFD: [6]



8. (a) Briefly explain the different coding standards and guidelines. [7]
- (b) With suitable block diagram, briefly explain the overall Testing process or Testing Activities. [8]
9. (a) What is PERT and Gantt chart? [5]
- (b) The table below shows the activities of a project with their corresponding precedence. Perform the following: [10]

Draw the activity diagram.
 Identify the critical path by proper methodology.
 Calculation expected project completion and expected variation.

Task	Precedence	Duration (in Days)		
		Optimistic (O)	Most Likely (M)	Pessimistic (P)
A	---	1	1	7
B	---	1	4	7
C	---	2	2	8
D	A	1	1	1
E	B	2	5	14
F	C	2	5	8
G	D, E	3	6	15
H	F, G	1	2	3

10. (a) Draw use-case diagram for the following problem :

Consider a mobile service providing system that provides services for regular phone calls and internet facilities. A customer has to login into the system. In the first login attempt, the customer has to register himself/herself. A logged in customer can pay money to the mobile service providing system for the service the customer enjoys on a monthly basis. Payment may be done either by credit card or by net banking. The customer may optionally get a print of the money receipt after payment. The money is paid by the customer through an external banking system.

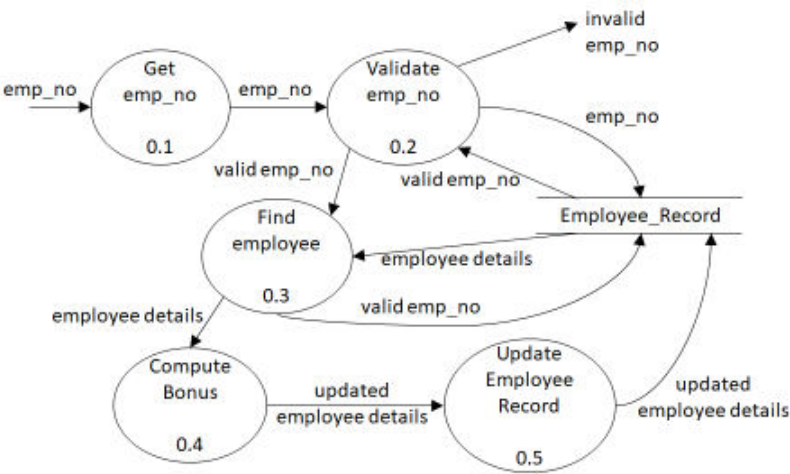
[7]
- (b) Briefly discuss the different types of messages in UML Sequence Diagram with proper examples.

[8]
11. (a) What problems are likely to arise if two modules have high coupling and low cohesion?

[4]
- (b) What do you mean by structure chart?

[3]
- (c) Draw structure chart for the following DFD of the bonus generation system:

[8]



*** END OF PAPER ***