



Sardar Patel Institute of Technology

Bhavan's Campus, Munshi Nagar, Andheri (West), Mumbai-400058-India
(Autonomous College Affiliated to University of Mumbai)

SYNOPTIC MSE

March 2020

Max. Marks : 20

Class : TE Computer

Course Code : CE 63

Name of the Course: Software Engineering

Duration: 60 Minutes

Semester: VI

Branch : Computer Engineering

Instructions:

- (1) All Questions are Compulsory
- (2) Draw neat diagrams

Q1) Given process models

A) Waterfall B) Incremental C) RAD Model D) Spiral

and properties of process models

E) Angular component represent progress

F) Porting an existing product to a new platform

G) Need to get basic functionality early in market

H) Increases reusability

I) Open source projects

J) Uses "divide and conquer" breakdown of task

Relate 1 or more properties to the given process models

List 3 reasons why a system should be analyzed before it is implemented?

SYNOPTIC

1/2 Mark for each correct answer

1 Mark for each reason

ANSWER

Angular component represent progress - Spiral

Porting an existing product to a new platform - Waterfall

Need to get basic functionality early in market - Incremental

Increases reusability - Rad Model

Open source projects - Rad Model

Uses "divide and conquer" breakdown of task - Incremental



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It is necessary to establish the system boundaries which would define the scope of the system.

To seek the acceptance of the people to a new development.

The analysis of the system helps to establish the feasibility from different angles. The system should satisfy the technical, economic and operational feasibility.

OR

Q1) As a user I want the system to use log4j to log all the messages so as to detect errors.

As a user I want to export data to XML so as to use data in XML format

Discuss SCRUM process and the artifacts, roles, ceremonies in SCRUM

SYNOPTIC

2 Marks – correct identification of user stories

1 Marks – SCRUM process

1+1+1Mark - artifacts, roles, ceremonies

ANSWER

As a user I want the system to use log4j to log all the messages.

Not a good user story as it is part of the developer task, what mechanism to use

As a user I want to export data to XML so as to use data in XML format

Good user story

SCRUM is iterative & incremental agile software development method. These iterations are time boxed with various iterations & each iteration is called Sprint. The Sprint is basically 2-4 week long & each sprint requires sprint planning estimation.

3 Roles

Product Owner, SCRUM Master, Developer

3 Artifacts



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Product Backlog

Sprint Backlog

Burndown Chart

3 Ceremonies

Sprint Plan

Daily Scrum – Stand up meetings

Sprint Review – Team meeting with product owner Discusses what to do to improve process

Q2A) Imagine two flight ticket reservation systems, each of them written in a different programming language. One consists of ten thousand lines of code, and another one has two thousand lines of code. Does it mean the first system is more complex than the second? Suggest best way to compare the 2 systems. Justify.

SYNOPTIC

1 Mark Yes/No

1 Mark Best way

1 Mark Justify

ANSWER

No, more number of lines of code does not indicate more complexity.

The FPA method can be used to give realistic comparison of 2 applications.

Because FPA estimation is independent of language.



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Q2B)How is Earned Value Analysis used to track a project? Discuss with an example.

SYNOPTIC

2 Marks – PV, AC, EV , CV, SV concept

1 Mark - Example

ANSWER

Planned Value (PV): It the approved budget for the work to be done for an activity or work package (or control account). T

Earned Value (EV):Formally, it was called the Budgeted Cost of Work Performed or BCWP. EV is the value of work performed in terms of authorized budget for that work element(s).

Actual Cost (AC):Formally, it was called the Actual Cost of Work Performed (ACWP). AC is the value of the actual cost incurred or realized for the performed work during a particular time period.

Cost Variance (CV) = EV – AC

Schedule Variance (SV) = EV – PV

Negative value of CV & SV indicate it is over budget, over schedule

Q3)Given the following values compute the F.P when all complexity adjustment factors, and weighting factors are average.

User input= 50, user output= 40, user enquiries= 35, user files = 6, external interface= 4

Unadjusted function point scale:

0: No influence, 1: Incidental, 2: Moderate, 3: Average, 4: Significant, 5: Essential

Functional units	Weighting factor		
	Low	Average	High
EI	3	4	6
EO	4	5	7
EQ	3	4	6
ILF	7	10	15
EIF	5	7	10



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SYNOPTIC

1 Mark - $\sum F_i$

1 Mark - UFP (Unadjusted function point)

1 Mark - CAF (complexity adjustment factor)

1 Mark - FP (Function point)

Q4) What is FTR? Explain responsibility of participants in FTR meeting.

OR

Explain different cost incurred to maintain quality of product?

SYNOPTIC

2 Mark - Explanation of Formal Technical review

2 Mark - Explanation of responsibility of producer, Project Manager, Reviewer and recorder (0.5 M each)

OR

1 Mark - Explanation of Prevention cost with example

1 Mark - Explanation of Internal cost with example

1 Mark - Explanation of External cost with example

1 Mark - Explanation of self-appraisal cost with example