University of Mumbai

Examination Second Half 2021 (Lead College: BVIMIT)

Program: **_MCA**

Curriculum Scheme: MCA (2year – 2020 Course)

Examination: M.C.A Semester I

Course Code: MCA14 and Course Name: Software Project Management

Time: 2 hour 30 minutes Max. Marks: 80

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Q1.	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1.	In this/ these process model/ models, software is developed in a series of incremental releases.
Option A:	Incremental model
Option B:	SDLC
Option C:	Spiral Model
Option D:	A and C
2.	Unit of effort is _____ which is measured as amount of work done by one person in one month.
Option A:	Months
Option B:	Person Months (PM)
Option C:	LOC
Option D:	KOLOC
3.	What is FAST technique?
Option A:	Facilitated Application Specification Technique
Option B:	Facilitated Advance Specification Technique
Option C:	Fast Application Specification Technique
Option D:	None
4.	Intermediate COCOMO model includes _____which depends on external _____.
Option A:	cost drivers, Effort Adjustment Factor
Option B:	Effort Adjustment Factor, cost drivers
Option C:	LOC, function point
Option D:	Function point, LOC
5.	Choose the correct sequence to calculate function point based on following activities: 1. F = 14 * scale 2. Calculate Function Point 3. Calculate Unadjusted Function Point (UFP) 4. CAF = 0.65 + (0.01 * F)
Option A:	3 – 1-4-2
Option B:	1-2-3-4
Option C:	4-3-2-1
Option D:	3-1-2-4

6.	Formal Technical Review (FTR) is a _____
Option A:	Project planning activity
Option B:	Project procurement activity
Option C:	software quality assurance activity
Option D:	Software delivery activity
7.	_____ shows relationships among activities during project scheduling.
Option A:	Work breakdown structure
Option B:	ER Diagram
Option C:	Activity Network Diagram
Option D:	Data Flow Diagram
8.	The _____ is a document that describes how the procurement processes will be managed, from developing documentation for making outside purchases or till contract closure.
Option A:	SRS
Option B:	RFQ
Option C:	Make or buy decision
Option D:	procurement management plan
9.	All activities lying on critical path have slack time equal to?
Option A:	0
Option B:	2
Option C:	1
Option D:	depends on duration of project
10.	In complete COCOMO, Phasewise effort & development time can be calculated based on _____ and _____
Option A:	Team size, software size
Option B:	Team size, total project effort E
Option C:	Software size, total project development time D
Option D:	total project effort E, total project development time D

Q2	
A	**Solve any Two** **5 Marks Each**
i	Explain Project Life Cycle
ii	Explain difference between spiral model and incremental model.
iii	A project size of 200 KLOC is to be developed. Software development team has average experience on similar type of projects. The project schedule is not very tight. Calculate the effort, development time, average staff size. Given constants are: a1 = 3.0 a2 = 1.12 b1 = 2.5 b2 = 0.35
B	**Solve any One** **10 Marks Each**
i	Explain Software Project Management Framework.
ii	Draw the use case diagram for withdrawal of cash from ATM . Make the necessary assumptions.

Q3	

<table>
<tr><td>A</td><td>Solve any Two 5 Marks Each</td></tr>
<tr><td>i</td><td>Explain various practices in Extreme Programming model.</td></tr>
<tr><td>ii</td><td>Explain difference between questionnaire and interview techniques.</td></tr>
<tr><td>iii</td><td>Consider the database application project with following features:
i. The application has 5 screens with 2 views with 9 tables.
ii. The application has 3 reports of 2 sections with 9 tables.
ii. The application has 5 3GL components.
There is 20% reuse of object points.
The developers' experience and capability is HIGH in similar environment.
Calculate the object point count, NOP, effort to develop such project. (PROD=25)
Complexity weight for screen = 2
Complexity weight for report = 8
Complexity weight for 3GL components = 10</td></tr>
<tr><td>B</td><td>Solve any One 10 Marks Each</td></tr>
<tr><td>i</td><td>Explain Project Procurement Management.</td></tr>
<tr><td>ii</td><td>The following table indicates the various tasks involved in planning a development of new product, the corresponding activities and the estimated duration (in days) for each task.
<table>
<tr><td>Sr. No.</td><td>Task</td><td>duration</td><td>Predecessor</td></tr>
<tr><td>1</td><td>Idea conception</td><td>10</td><td>-</td></tr>
<tr><td>2</td><td>Concept statement</td><td>10</td><td>1</td></tr>
<tr><td>3</td><td>Focus groups</td><td>5</td><td>2</td></tr>
<tr><td>4</td><td>Marketing research surveys</td><td>30</td><td>2,3</td></tr>
<tr><td>5</td><td>Product development</td><td>90</td><td>2</td></tr>
<tr><td>6</td><td>Beta testing</td><td>30</td><td>5</td></tr>
</table>
Show the activity network diagram, critical path, Early finish, late finish and slack time for each activity.</td></tr>
<tr><td>Q4</td><td></td></tr>
<tr><td>A</td><td>Solve any Two 5 Marks Each</td></tr>
<tr><td>i</td><td>Explain formal technical review in detail.</td></tr>
<tr><td>ii</td><td>Write a short note on Rayleigh Curve.</td></tr>
<tr><td>iii</td><td>Assume that the size of organic software product has been estimated to be 32,000 LOC. Determine the efforts required to develop software product, development time, average staff size and productivity. (Assume the constants a1=2.4, b1= 1.05, c1=2.5, d1=0.38)</td></tr>
<tr><td>B</td><td>Solve any One 10 Marks Each</td></tr>
<tr><td>i</td><td>Define requirements engineering. Explain any two fact finding techniques.</td></tr>
<tr><td>ii</td><td>Explain various diagrams drawn in project scheduling activity. Explain any two diagrams with example.</td></tr>
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