Name: **Enrolment No:**	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2022

Course: Software Engineering and Project Management **Semester: I**
Program: MCA **Time: 03 hrs.**
Course Code: CSEG7010 **Max. Marks: 100**

Instructions: Attempt all questions.

SECTION A
(5Qx4M=20Marks)

S. No.		Marks	CO
Q 1	Mention the factors that contribute to the software crisis. Also, discuss how software engineering offers a solution to software crises.	**4**	**CO1**
Q2	Draw a labeled diagram to represent the Spiral Model of development.	**4**	**CO2**
Q3	"A software program might be good but may not still exhibit good quality" Comment.	**4**	**CO1**
Q4	Write five major responsibilities of a software project manager.	**4**	**CO4**
Q5	Explain why adding more manpower to an already late project makes it later.	**4**	**CO4**
	SECTION B **(4Qx10M= 40 Marks)**		
Q 6	At which point in the software development life cycle (SDLC), do the project management activities start? When do these end? Identify the important project management activities.	**10**	**CO1**
Q 7	A company needs to develop software for its Automation Process. The software is expected to have 3200 lines of code. Determine the effort and Productivity needed to develop this software using the basic COCOMO model (Organic mode).	**10**	**CO2**
Q8	Assuming you and your team have no prior experience in developing satellite communication systems. Which SDLC model you will consider for development? Give reasons for your choice.	**10**	**CO3**
Q 9	Develop a Gantt Chart for the "Result Management System" considering that the project starts in January and ends in May and has the following tasks specified: Overall System Specification, Device Integration, Module A, Module B, Module C, and Integrated Software Testing. (Take assumptions where required). **OR** Explain situations using examples when the project manager should use a PERT chart and when to use a GANTT chart.	**10**	**CO4**

<table>
<tr><td colspan="4">SECTION-C
(2Qx20M=40 Marks)</td></tr>
<tr><td>Q 10</td><td>A new project with a 400 KLOC embedded system has to be developed. The project manager has a choice of hiring from two pools of developers: very highly capable (with application) with very little experience in the programming language or developers of low quality but with a lot of programming language experience. Which is the better choice in terms of two pools?</td><td>20</td><td>CO3</td></tr>
<tr><td>Q 11</td><td>a) The nominal effort and duration of a project have been estimated to be 1000PM and 15 months. The project cost has been negotiated to be Rs. 200,000,000. They need the product to be developed and delivered in 12 months' time. What should be the new cost to be negotiated?

b) "Projects of specific complexities and sizes often require specific team structures for efficient working." Compare the different team structures mentioning salient features of each type.

OR</td><td rowspan="2">10+10</td><td rowspan="2">CO3 +CO 4</td></tr>
<tr><td></td><td>a) State whether the following statements are TRUE or FALSE. Give reasons for your answer
i) Legacy software products are those products that have been developed a long time back.
ii) Corrective maintenance is the type of maintenance that is most frequently carried out on a typical software product.
b) Draw the network diagram and determine the critical path for the following project:

<table>
<tr><th>Activity</th><th>Time estimate (Weeks)</th></tr>
<tr><td>1- 2</td><td>5</td></tr>
<tr><td>1- 3</td><td>6</td></tr>
<tr><td>1- 4</td><td>3</td></tr>
<tr><td>2 -5</td><td>5</td></tr>
<tr><td>3 -6</td><td>7</td></tr>
<tr><td>3 -7</td><td>10</td></tr>
<tr><td>4 -7</td><td>4</td></tr>
<tr><td>5 -8</td><td>2</td></tr>
<tr><td>6 -8</td><td>5</td></tr>
<tr><td>7 -9</td><td>6</td></tr>
<tr><td>8 -9</td><td>4</td></tr>
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