

Name:	 UPES UNIVERSITY WITH A PURPOSE
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2019

Course: M. Tech. (PLE)	Semester: II
Program: M. Tech. (PLE)	Time: 03 hrs.
Course Code: Project Management & Contract Administration	Max. Marks: 100

Instructions: Use of calculator is allowed

SECTION A

S. No.		Marks	CO
Q 1	Define project as per PMI. What are its features and characteristics?	4	CO1
Q 2	Write a short note on Environmental Impact Assessment of projects.	4	CO2
Q 3	What is a network diagram and types of network?	4	CO3
Q 4	What is EVMS? How it helps in cost control?	4	CO4
Q 5	Define contract in projects and mention its essential elements.	4	CO5

SECTION B

Q 6	Who are project stakeholders and how to identify & classify them? Explain the process of stakeholder management in brief. <p style="text-align: center;">OR</p> List and explain all the knowledge management areas applied to project management.	10	CO1																																				
Q 7	The year wise cash flows of two projects are as given in following table. Calculate NPV of the following projects and suggest the better project accordingly. The capital is available at the cost of 10% per annum. (All figures in Rs. Crores) <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th>Project Name</th> <th>Initial Investment</th> <th>Yr. 1</th> <th>Yr. 2</th> <th>Yr. 3</th> <th>Yr. 4</th> <th>Yr. 5</th> </tr> </thead> <tbody> <tr> <td>Ganga</td> <td style="text-align: center;">100</td> <td style="text-align: center;">40</td> <td style="text-align: center;">30</td> <td style="text-align: center;">30</td> <td style="text-align: center;">30</td> <td style="text-align: center;">30</td> </tr> <tr> <td>Yamuna</td> <td style="text-align: center;">100</td> <td style="text-align: center;">50</td> <td style="text-align: center;">50</td> <td style="text-align: center;">20</td> <td style="text-align: center;">15</td> <td style="text-align: center;">10</td> </tr> </tbody> </table>	Project Name	Initial Investment	Yr. 1	Yr. 2	Yr. 3	Yr. 4	Yr. 5	Ganga	100	40	30	30	30	30	Yamuna	100	50	50	20	15	10	10	CO2															
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Q 8	A minor project consists of following 11 activities: <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th>Activity ID</th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> <th>E</th> <th>F</th> <th>G</th> <th>H</th> <th>I</th> <th>J</th> <th>K</th> </tr> </thead> <tbody> <tr> <td>Duration (Weeks)</td> <td style="text-align: center;">6</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">2</td> <td style="text-align: center;">4</td> <td style="text-align: center;">1</td> <td style="text-align: center;">1</td> <td style="text-align: center;">6</td> <td style="text-align: center;">3</td> <td style="text-align: center;">1</td> <td style="text-align: center;">1</td> </tr> <tr> <td>Predecessor (s)</td> <td style="text-align: center;">-</td> <td style="text-align: center;">-</td> <td style="text-align: center;">A</td> <td style="text-align: center;">B</td> <td style="text-align: center;">C</td> <td style="text-align: center;">D</td> <td style="text-align: center;">E,F</td> <td style="text-align: center;">G</td> <td style="text-align: center;">H</td> <td style="text-align: center;">H</td> <td style="text-align: center;">I, J</td> </tr> </tbody> </table> <p>(i) Draw the project network diagram. (ii) Find the critical path and the minimum time required to complete the project.</p>	Activity ID	A	B	C	D	E	F	G	H	I	J	K	Duration (Weeks)	6	2	3	2	4	1	1	6	3	1	1	Predecessor (s)	-	-	A	B	C	D	E,F	G	H	H	I, J	10	CO3
Activity ID	A	B	C	D	E	F	G	H	I	J	K																												
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	(iii) Also, compute the slack time available with each activity.																						
Q 9	<p>A project has a budget of Rs.1,00,000. and is planned to be completed in 12 months. The following table shows the cumulative values (in Rs.) at end of each 4 months:</p> <table border="1"> <thead> <tr> <th>Month</th> <th>Planned Cost</th> <th>EV</th> <th>Actual Cost</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>7000</td> <td>2000</td> <td>2500</td> </tr> <tr> <td>2</td> <td>14000</td> <td>6000</td> <td>9000</td> </tr> <tr> <td>3</td> <td>22000</td> <td>10000</td> <td>15000</td> </tr> <tr> <td>4</td> <td>30000</td> <td>14000</td> <td>21000</td> </tr> </tbody> </table> <p>a) Calculate the cost variance and the schedule variance at the end of 4 months. b) At the end of the 4th month what would you estimate the cost at completion to be? c) Estimate the likely time of completion of project if efficiency remains the same. d) Estimate likely time for completion of project if efficiency becomes 100% from month 5.</p>	Month	Planned Cost	EV	Actual Cost	1	7000	2000	2500	2	14000	6000	9000	3	22000	10000	15000	4	30000	14000	21000	10	CO4
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1	7000	2000	2500																				
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SECTION-C

Q 11	<p>Consider the data of a project shown in the following table:</p> <table border="1"> <thead> <tr> <th rowspan="2">Activity</th> <th rowspan="2">Immediate predecessor(s)</th> <th colspan="2">Time (weeks)</th> <th colspan="2">Cost (Rs.)</th> </tr> <tr> <th>Normal</th> <th>Crash</th> <th>Normal</th> <th>Crash</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>-</td> <td>8</td> <td>5</td> <td>2000</td> <td>2300</td> </tr> <tr> <td>B</td> <td>-</td> <td>10</td> <td>8</td> <td>4000</td> <td>4300</td> </tr> <tr> <td>C</td> <td>A</td> <td>6</td> <td>5</td> <td>3000</td> <td>3125</td> </tr> <tr> <td>D</td> <td>A</td> <td>9</td> <td>6</td> <td>5000</td> <td>5225</td> </tr> <tr> <td>E</td> <td>B</td> <td>10</td> <td>9</td> <td>2500</td> <td>2700</td> </tr> <tr> <td>F</td> <td>B</td> <td>13</td> <td>13</td> <td>5000</td> <td>-</td> </tr> <tr> <td>G</td> <td>E</td> <td>5</td> <td>3</td> <td>1000</td> <td>1700</td> </tr> </tbody> </table> <p>If the indirect cost per week is Rs. 300, find the optimal crashed project completion time. Then, plan project execution with the help of Gantt Chart and prepare Cost baseline.</p>	Activity	Immediate predecessor(s)	Time (weeks)		Cost (Rs.)		Normal	Crash	Normal	Crash	A	-	8	5	2000	2300	B	-	10	8	4000	4300	C	A	6	5	3000	3125	D	A	9	6	5000	5225	E	B	10	9	2500	2700	F	B	13	13	5000	-	G	E	5	3	1000	1700	20	CO3
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Q 10	<p>What do you mean by project risk and how it can affect project objectives? Give the outline of risk management process. Explain quantitative and qualitative risk analysis.</p> <p align="center">OR</p> <p>Give a schematic classification of quality costs. Mention various tools and techniques required for managing project quality and describe any two of them in detail.</p>	20	CO5
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