UNIVERSITY WITH A PURPOSE

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2021

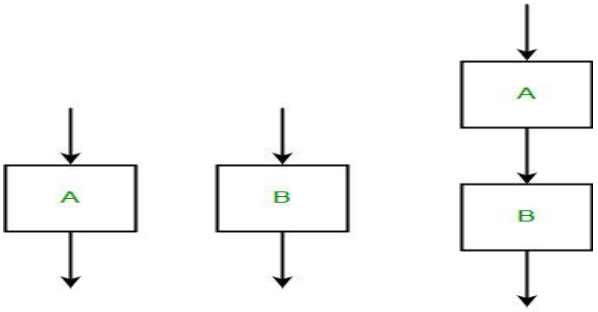
Course: Software Engineering and Project Management **Semester: III**
Program: B.Tech- CS-CSF **Time: 03 hrs.**
Course Code: CSEG 2008 **Max. Marks: 100**

Instructions: all questions are compulsory

SECTION A **(5Qx 4M = 20 Marks)**

S. No.	Write short notes on the following	**Marks**	**CO**
Q 1	State the importance of using Spiral model to develop a "Satellite based communication between mobile handset" for Galaxy Inc.	**4**	**CO1**
Q2	Describe Albrecht FPA.	**4**	**CO1**
Q3	Define requirements classification captured by an "E-Commerce website to start door to door grocery delivery".	**4**	**CO2**
Q4	Recall various phases captured in managing risk of "Online portfolio development software".	**4**	**CO3**
Q5	Explain Quality as per ISO standard.	**4**	**CO3**

SECTION B **(4Qx10M = 40 Marks)**

	All questions are compulsory	**Marks**	**CO**
Q6	Elucidate different kind of testing performed to check error in any software. The cyclomatic complexity of each of the modules A & B shown below is 10. Compute cyclomatic complexity of the sequential integration shown on the right hand side? 	**10**	**CO4**
Q7	Identify role of Metric in assessing the deliverable in software project. Define product metric and process Metrics of "Online polling system"	**10**	**CO3**
Q8	Paraphrase the project life cycle for "Online education lecture delivery system".	**10**	**CO2**
Q9	Design DFD level 3 diagram for Hospital Management system **Or** Online Air ticket booking system	**10**	**CO1**

SECTION-C
(Scan and upload) **(2Qx 20M= 40 Marks)**

	All questions are compulsory (Marks- [20])	**Marks**	**CO**

Q 10	a) Project A with cashflows of -100000, 10000, 10000, 10000, 20000, 100000 and Project B with cashflows of -120000, 30000, 30000, 30000, 30000, 75000 for year 0, 1, 2, 3, 4 and 5 respectively are to be chosen. Which of these projects will be chosen on the basis of : a) Payback Period b)ROI c) NPV assuming 10% discount rate . b) A Company want to produce a project (4500 KLOC). The project should have Nominal database (1) but high virtual machine volatility (1.15). Which of the following group will be best for the project 1. Low analytical capability(1.19), high application experience(.91) , and high programming language experience(.95) 2. Very high analyst capability (.71), high programming capability (.86), and low programming language experience (1.07). 3. Low application experience 1.07), very low programming experience(1.14), and very high programming capability(.70) 4. Very high application experience (.82), high virtual memory experience (.9), and high programming language experience (.95) **OR** a) A company projecting revenue of 40lacs in first year and the revenue is going to increase @10 lacs every year for next 3 years in succession, after which revenue decrease by 15 lacs in the fifth year and thus will be closed after 5 years. The fixed investment for the project is 150 lacs and working capital requirement is 30 lacs. Calculate Payback period, ROI and its NPV assuming 12.5% discount rate. b) A Company want to produce a project (4500 KLOC). The project should have very high product complexity(1.3) and high execution time(1.11). Which of the following groupshould not be selected for the project 1. Low analytical capability(1.19), high application experience(.91) , and high programming language experience(.95) 2. Very high analyst capability (.71), high programming capability (.86), and low programming language experience (1.07). 3. Low application experience 1.07), very low programming experience(1.14), and very high programming capability(.70) 4. Very high application experience (.82), high virtual memory experience (.9), and high programming language experience (.95)	**10+10**	**CO4**
Q11	a. Design a thorough SRS for the following hotel management system: The system should supports chain of hotels. A hotel contains two categories of rooms: executive and normal, both AC and non-AC. The customers of executive rooms can avail extra facilities like games, swimming, food service in rooms, etc. The booking is possible by internet or by phone. If the booking is through phone, process is done by receptionist, and if booking is done through internet the process is carried out by customer through hotel website. Depending on the number of days customer stays, appropriate bill is generated. The bill also contains amount for transport, food and other facilities enjoyed by the customer along with necessary taxes. The manager should be able to generate reports like list of customers staying in the hotel, list of rooms empty, monthly/yearly income, etc. b. Also identify the CMMI maturity level of the same.	**12+8**	**CO2**