Reg.No.:												

VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN
[AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI]
Elayampalayam – 637 205, Tiruchengode, Namakkal Dt., Tamil Nadu.

Question Paper Code: 6004

B.E. / B.Tech. DEGREE END-SEMESTER EXAMINATIONS – MAY / JUNE 2024
Sixth Semester
Information Technology
U19IT620 – SOFTWARE ENGINEERING
(Common to CSE & CST)
(Regulation 2019)

Time: Three Hours Maximum: 100 Marks

Answer ALL the questions

Knowledge Levels (KL)	K1 – Remembering	K3 – Applying	K5 - Evaluating
	K2 – Understanding	K4 – Analyzing	K6 - Creating

PART – A

(10 x 2 = 20 Marks)

Q.No.	Questions	Marks	KL	CO
1.	Write down the generic process framework that is applicable to any software project.	2	K1	CO1
2.	What are the advantages of adhering to life cycle models for software?	2	K2	CO1
3.	List the metrics of specifying Non-functional requirements.	2	K1	CO2
4.	How the requirements are validated?	2	K2	CO2
5.	Define UML.	2	K1	CO3
6.	Differentiate between sequence diagram and collaboration diagram.	2	K1	CO3
7.	List four design principles of a good design?	2	K1	CO4
8.	Name the commonly used architectural styles.	2	K1	CO4
9.	What is Validation testing?	2	K1	CO5
10.	What are the issues in software testing?	2	K2	CO5

PART – B

(5 x 13 = 65 Marks)

Q.No.		Questions	Marks	KL	CO
11.	a)	For the scenario described below, which life cycle model would you choose? Give the reason why you would choose this model and explain about the life cycle model. You are interacting with the MIS department of a very large oil company with multiple departments. They have a complex regency system. Migrating the data from this legacy system is not an easy task and would take a considerable time. The oil company is very particular about processes, acceptance criteria and legal contracts.	13	K3	CO1
		(OR)			
	b)	Explain about Extreme Programming using nutshell?	13	K1	CO1
12.	a)	Explain briefly about building analysis model and negotiating requirements with an example.	13	K1	CO2
		(OR)			
	b)	What is requirements elicitation? Explain various activities performed in it with watch system that facilitates to set time and alarm as an example?	13	K2	CO2
13.	a)	Create a Data Model and Data dictionary for the Banking Enterprise using UML class notation. Justify the model for each entity.	13	K3	CO3
		(OR)			
	b)	Explain in detail about UML interaction diagram and UML activity diagram with neat examples.	13	K1	CO3
14.	a)	Explain the core activities involved in User Interface design process with necessary block diagrams.	13	K1	CO4
		(OR)			
	b)	Explain clearly the concept of coupling & cohesion? For each type of coupling give an example of two components bonded in that way.	13	K2	CO4

15.	a)	For the below example, apply basis path testing and obtain the test cases.
		public double calculate(int amount)
		{
		-1- double rushCharge = 0;
		-1- if (nextday.equals("yes"))
		{
		-2- rushCharge = 14.50;
		}
		-3- double tax = amount * .0725;
		-3- if (amount >= 1000)
			13	K3	CO5

```
{
-4- shipcharge = amount * .06 + rushCharge;
}
-5- else if (amount >= 200)
{
-6- shipcharge = amount * .08 + rushCharge;
}
-7- else if (amount >= 100)
{
-8- shipcharge = 13.25 + rushCharge;
}
-9- else if (amount >= 50)
{
-10- shipcharge = 9.95 + rushCharge;
}
-11- else if (amount >= 25)
{
-12- shipcharge = 7.25 + rushCharge;
}
else
{
-13- shipcharge = 5.25 + rushCharge;
}
-14- total = amount + tax + shipcharge;
-14- return total;
} //end calculate
```

(OR)

b)	What is SCM? Explain in detail about the various processes involved in SCM.	13	K1	CO5

PART – C

(1 x 15 = 15 Marks)

Q.No.		Questions	Marks	KL	CO
16.	a)	For the following code segment, draw the control flow graph, compute the Cyclomatic Complexity value, identify the independent paths and generate the test cases.	15	K3	CO5

```
Max(a, b, c)
{  int i, j=0;
sum=0;
if(a>b) then
if(a>c) then
```

```
print(" a is the largest")
else
print(" c is the largest")
else
if(b>c) then
print(" b is the largest")
else
print(" c is the largest")
}
```

(OR)

b)	A supermarket needs to develop a software to encourage regular customers. For this, the customer needs to supply his/her residence address, telephone number, and the driving license number. Each customer who registers for this scheme is assigned a unique customer number (CN) by the computer. A customer can present his CN to the checkout staff when he makes any purchase. In this case, the value of his purchase is credited against his CN. At the end of each year, the supermarket intends to award surprise gifts to 10 customers who make the highest total purchase over the year. Also, it intends to award a 22 caret gold coin to every customer whose purchase exceeded Rs. 10,000. The entries against the CN are reset on the day of every year after the prize winners' lists are generated. Design a UML use case model for the Supermarket Prize Scheme and Justify each entity.	15	K4	CO3