SVKM's NMIMS
MUKESH PATEL SCHOOL OF TECHNOLOGY MANAGEMENT & ENGINEERING

Programme: B. Tech (COMPUTER) Year: III Semester: V

Academic Year: 2016-2017

Subject : Software Engineering

Date : 01 December 2016

Marks: 60
Time : 2.00 pm to 5.00 pm
Durations: 3 (hrs)

Final-Examination

Instructions: Candidates should read carefully the instructions printed on the question paper and on the cover of the Answer Book, which is provided for their use.

1) Question **No. 1** is compulsory.
2) Out of remaining 6 questions, attempt any **4** questions.
3) **In all 5 questions to be attempted.**
4) All questions carry equal marks.
5) **Answer to each new question to be started on a fresh page.**
6) **Figures in brackets on the right hand side indicate full marks.**
7) **Assume Suitable data if necessary**

Q1		Elaborate the following concepts	[4x3]
	a)	Data-centered Architectural style with example.	
	b)	Capability Maturity Model (CMM) levels in process models.	
	c)	State Diagram for Library Management System.	
Q2	a)	What is prototyping? How is the prototype model useful in software engineering? Discuss its advantages and disadvantages.	[6]
	b)	Differentiate between a Program and Software. Why legacy software need to be evolved?	[6]
Q3	a)	What is an Agile process? Describe the working of SCRUM.	[6]
	b)	Give details of how requirements are mapped into a software architecture when 'Transform Flow' is present.	[6]
Q4	a)	What are the possible Metrics attributes? Differentiate between size-oriented and Function-oriented metrics.	[6]
	b)	Explain the terms Unit testing and Integration testing. Also compare Top-down and bottom-up testing.	[6]
Q5	a)	Explain the system testing in detail.	[6]
	b)	Draw a Data Flow Diagram (DFD) for ATM software up to level 2.	[6]
Q6	a)	A system has 10 simple external inputs and 3 complex external inputs. There are 5 average external output, 20 complex external output, 8 simple external inquires, 10 average internal logical files, and 7 complex external Interface files .If the total degree of influence for the product (Fi) is 51, determine the number of function points. The organizational average productivity for systems is 5 FP/pm with a burdened labor rate of $2,000 per month, estimate the effort and cost required to build the software using FP-based estimation technique.	[6]

Information Domain Value	Count	Weighting factor simple	average	complex		
External Inputs (EIs)		3	4	6	=	
External Outputs (EOs)		4	5	7	=	
External Inquiries (EQs)		3	4	6	=	
Internal Logical Files (ILFs)		7	10	15	=	
External Interface Files (EIFs)		5	7	10	=	
Count total →						

b) What are the Golden Rules of 'Interface Design'? [6]

Q7 **Write Short note:** [12]

a) Software Reengineering

b) Risk Identification and Risk projection