DOE
03/9/15

Subject: *Software Engineering* / Code IT3003 /Branch: CS & IT /Semester: 5th /Sept 2015

Mid-Term Examination September, 2015
School of Computer Engineering, KIIT University

Time: 2 Hours *Full Marks: 25*

Answer 5 (Five) questions including Q.1 which is compulsory

1.	(a)	Why is Software Engineering referred to as a *layered technology* ?	1 x5
	(b)	Explain what is meant by *fan-in* and *fan-out* in architectural design.	
	(c)	What do you understand by *traceability* in the context of software requirements specification?	
	(d)	Differentiate between *heuristic*, *empirical* and *analytical* estimation techniques.	
	(e)	Differentiate between *functional format* and *project format* for software development organization	
2.	(a)	Describe the Prototyping model of software development. Under what circumstances is it beneficial to construct a prototype? How does the Prototyping model differ from the RAD model ?	3
	(b)	Suggest a suitable life cycle model for a Software Project where several kinds of risks are there. Explain all the phases of the proposed model with schematic diagram.	2
3.	(a)	How is the SRS document used by different types of users? Discuss the desirable characteristics of SRS documents.	3
	(b)	When the size of a software product increases, explain why the estimated effort increases drastically whereas the development time increases moderately. Substantiate by considering two organic projects having 10,000 and 15,000 LOC. [Values of parameters: Effort (2.4, 1.05); Time (2.5, 0.38)]	2

4.	(a)	A restaurant owner wants to computerize order processing, billing and accounting activities. He also expects the computer to generate statistical report about sales . The computer should maintain the prices of all the items and also support changing the prices by the manager. Whenever any food items are sold, the sales clerk would enter the item code and the quantity sold. The computer should generate bills. When ingredients are issued for preparation of food items, the data is to be entered into computer. Purchase orders are generated on a daily basis, whenever the stock of any ingredient falls below a threshold value. The computer should calculate the threshold value of each item based on the average consumption of this ingredient for the past three days and assuming that a minimum of two days stock must be maintained for all ingredients. Whenever the ordered ingredients arrive, the invoice data regarding the quantity and the price is entered. The computer should print cheques against the invoice. Monthly sales receipt and expenses data should be generated whenever requested by the manager . Represent the system by drawing a DFD upto level 1.	3
	(b)	Identify the functional requirements for the above problem.	2
5.	Draw the Activity Network and Gantt Chart for the activities tabulated below Identify the critical path , project completion time and slack times.		5

Activity	Predecessor	Duration (days)
A	-	10
B	-	5
C	B	3
D	A, C	4
E	A, C	5
F	D	6
G	E	5
H	F, G	5

6	Write short notes on *any two*		2.5x2
	(a)	Function Point metric	
	(b)	Risk Management	
	(c)	Software Configuration Management	
	(d)	Cohesion and Coupling	