B.Tech. SEM -IV (Computer) 2014 Course (CBCS) : SUMMER - 2019

SUBJECT: FUNDAMENTALS OF SOFTWARE ENGINEERING

Day: Thursday | Time: 10.00 AM TO 01.00 PM

Date: 30/05/2019 | **S-2019-2605** | Max Marks. 60

N.B.:

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks
3) Draw the labeled diagrams **WHEREVER** necessary
4) Assume suitable data if necessary.

Q.1 Elucidate the key features of the software development process models with suitable examples. **(10)**

OR

Q.1 Discuss the prototyping model. What is the effect of designing a prototype on the over all cost of the software project. Explain. **(10)**

Q.2 Requirement analysis is unquestionably the most communication intensive step in the software engineering process. Why the communication path does frequently breaks down? Explain. **(10)**

OR

Q.2 What is the purpose of data flow diagrams? What are the notations used for the same. Explain by constructing a context flow diagram level 0 & level 1 DFD for a library management system. **(10)**

Q.3 Explain about software architecture design with emphasis on Fan-in, Fan-out coupling, Cohesion and Factoring. **(10)**

OR

Q.3 What is transform mapping? Explain the process with an illustration. What is its strength and weakness? **(10)**

Q.4 What is test case? Consider a program for determining the previous date. Its input is a triple of day, month and year with the values in the range $1 \leq$ month ≤ 12, $1 \leq$ day ≤ 31, $1990 \leq$ year ≤ 2018. The possible outputs would be previous date or invalid date. Design the boundary value test cases. **(10)**

OR

Q.4 What is black box testing? Explain the different types of black box testing strategies. Explain by considering suitable example. **(10)**

Q.5 a) Identify the factors which make the measurement of software reliability a much harder problem than the measurement of hardware reliability. **(05)**

b) Why is it important for a software development organization to obtain the ISO 9001 certification? **(05)**

OR

Q.5 a) Define Software Configuration Management (SCM). Explain the SCM process in detail. **(05)**

b) Differentiate between Software Quality Assurance and Software Quality Control. **(05)**

Q.6 State the need for risk management and explain in detail the activities under risk management. **(10)**

OR

Q.6 Compute and prepare function point value for a project with the following information domain characteristics : **(10)**

No. of external inputs: 30
No. of external outputs: 52
No. of external inquiries : 22
No. of logic files :12
No. of external interface files : 2
Assume complexity adjustment values for the above are average (4,5,4,1,0,7) respectively.

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