

**M.Sc. (Informatics) – IV Semester - 2017**  
**IT-45- Software Engineering II**

Time: 3 Hrs.

Max. Marks: 75

**Note: Answer five questions in all. Question no. 6 is compulsory.**

Q1 Please answer the following:

15

- i. What is a process framework?
- ii. Name the framework activities applicable to all software projects.
- iii. Software qualities.
- iv. List down any three Agile Principles.
- v. Briefly explain the design concepts – Abstraction, Modularity and Refactoring.
- vi. What is software architecture? What is its importance?
- vii. Mention three attributes and the corresponding metrics for code quality.
- viii. Briefly describe any three attributes of a good test.
- ix. Discuss the regression testing strategy and its significance.
- x. Explain the approach used to adapt the function point approach of estimation to web application projects.

Q2 What are different software development models? Discuss them in details and also compare their merits and demerits. 15

Q3 a. What is the software design process? Discuss design process activities in detail. 08

b. Discuss the Extreme Programming approach. 07

Q4 a. What is the difference between software engineering and computer science? Please discuss the difference in detail. 10

b. Why software engineering is not software programming? Explain. 05

Q5 What is component based software engineering? Please discuss with an example. 8

b. If you were developing a security-critical system, how would you integrate the security requirements engineering and assurance processes into the model? 7

Q6 Information Portal is a private domain web portal, which is being developed for a university. The portal acts as an information kiosk for students. The portal acts as a bridge of communication between the students and the administration. The application helps in improving the communication 15

IC1745

standards between the different domains existing in the organization. The overall advantage of the system is empowered by decreasing the latency that arises while operating through the manual process. The portal helps in adjusting and arranging the operational standards in the maintenance of information related to their students and examinations. The administrators handle all the operational based information with respect to the transactional state that may arise in complementing the application procedures that take place while the system is functioning.

The actual purpose in designing the system is to make the organizational process to get speed up. The management can have the expected information at its at any instance. Generating the required reports as per the operational requirements becomes much easier and information availability at the hand. The system not only becomes false proof and higher levels of satisfaction prevail at the side of the student, faculty and administrators. The application is also security oriented and gets associated with in the system as the general structure of accessibility is fairly demandable.

The students can just get on to the portal to know any such information that is of importance to their academics. The students can also have referential information related to the normal structure of their courses, semesters. The portal also provides the accessibility towards the provision of old question and their answers along with the material

Write the detailed software requirement specifications and propose a model of the system.