POKHARA UNIVERSITY

Level: Bachelor | Semester: Spring | Year : 2021
Programme: BE | Full Marks: 100
Course: Object Oriented Software Engineering | Pass Marks: 45
Time : 3hrs.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Attempt all the questions.

1. a) What is software process framework? The framework activities are complemented by a number of umbrella activities. Explain each umbrella activities. 8

   b) Pokhara University is developing an integrated portal for exam form registration. Your company is applying for the development project. Which process model would you prefer for development and why? Discuss. 7

2. a) A software project involves the below activities. Find the Critical Path, and total time durations for the project. Also interpret your findings. 8

Activity	Precedence	Duration (days)
P	-	3
Q	-	4
R	P	5
S	Q	5
T	R,S	7
U	R,S	5
V	T	2
W	U	10

   b) Define project estimation. Explain in detail the LOC and FP approach for project estimation. 7

3. a) Prepare context diagram and level 1 DFD for the following 8

   A potential patient joins the doctors by submitting the patient application form. A new patient record is created and stored in patient record store. A patient makes an appointment by submitting his/ her details. An appointment card is generated and given to the patient. The appointment details are recorded in the database.

   A front desk officer makes an telephone appointment for a patient by entering his/her details. He/she also cancels appointment for any patients by entering cancellation details. Both processes update the database. A doctor will see a patient. When they see a patient a list of appointment and patient's record will be accessed by the doctor. He /she may issue a prescription by entering prescription details in the system. Prescription is printed and issued to the patient.

   b) What is Sequence Diagram? Explain with an example. 7

4. a) What is Design model? Differentiate between Object oriented analysis and object-oriented design. 8

   b) Define requirement elicitation. Discuss the significance of Software quality assurance activities. 7

5. a) Discuss the importance of unit testing and integration testing in object-oriented life cycle for system development. 7

   b) Explain basic path testing. Compute Cyclomatic complexity from the given piece of program 8

```
large = x [0];
for (i=1;i<=n; i++)
{
If (x[i] > large)
Large = x[i];
}
```

6. a) Define verification and validation. Discuss about the white-box and black-box testing. 8

   b) Discuss about the emerging trends in software engineering. 7

7. Write short notes on: (**Any two**) 2×5

   a) Six Sigma

   b) Design pattern

   c) The Make /Buy Decision