POKHARA UNIVERSITY

Level: Bachelor	Semester –Spring	Year: 2020
Program: BE		Full Marks: 70
Course: Object Oriented Software Engineering		Pass Marks: 31.5
		Time: **2** hrs.

Candidates are required to answer in their own words as far as practicable.
The figures in the margin indicate full marks.

Attempt all the questions.

Section - A: (5×10=50)

Q. N. 1 A government office wants to develop a document management software system for its internal use. The development of the system is costly and it cannot afford for the fully development system in a single fiscal year. They want to spend certain portion of the total budget of the software in this year and additional budget will be allocated in the upcoming years. Also the requirements are not well specified. Propose a life cycle model for this scenario and provide reason(s) for justification of your answer. 10

OR

The product owner wants you to implement all the features at once, claiming that there is no point in small iterations. Trying to convince you that all of the features are useless until they are all completely ready, he concludes that there is no priority exists – all the features are equally important. What's your solution to this situation and models would it be applicable? 10

Q. N. 2 Explain, why it is necessary to estimate the projects? As a software engineer, What parameters do you consider for project estimation so that your estimation will be more accurate? Explain COCOMO II model for project cost estimation. 10

Q. N. 3 A software project started on March 2020 was supposed to be completed by May 2021. But the progress review at the end of March 2021 shows that only 20% of the tasks have been completed and the major reason in delay of the project was the people factor. Explain briefly the possible reasons that the people factor affects the software development process. 10

Q. N. 4 Capability maturity models (CMM) have been developed to assess organizations sophistication and are quality based on five levels of process maturity. Briefly outline the five maturity levels. 10

Q. N. 5 Suppose you are a quality assurance engineer of a software company. Prepare basic set of activities you need to perform in formal technical review (FTR). Also mention what type of task do you perform in clean room engineering if you are hired as software engineer? 10

Section - B: (1×20=20)

Q. N. 6 A potential patient joins the doctors by submitting a patient application form. A new patient record is and stored in the patient records store. A patient makes an appointment by providing their patient details. An appointment card is given to the 20

patient after they have made the appointment. The appointment details are stored in the database.

A receptionist makes a telephone appointment for a patient by entering a patient detail. A receptionist also cancels appointments for a patient by entering their cancellation details. Both processes update the appointment section of the database.

A doctor will see a patient. When they see a patient a list of appointments and patients' record will be sent to the doctor. A doctor may want to issue a description details into the system and a prescription.

From the case study given above:

i) Draw a UML use-case diagram.
ii) Draw a sequence diagram for the system
iii) Draw a context diagram for above scenario
iv) List out some others necessary functional and non-functional requirements necessary for this system and explain why they are necessary.