

ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
ORGANISATION OF ISLAMIC COOPERATION (OIC)
Department of Computer Science and Engineering (CSE)

MID-SEMESTER EXAMINATION	Summer Semester, 2020-2021
DURATION: 1 HOUR 30 MINUTES	FULL MARKS: 75

SWE 4801: Software Maintenance

Programmable calculators are not allowed. Do not write anything on the question paper.

Answer **all 3 (three)** questions. Marks of each question and corresponding CO and PO are written in the right margin.

1.		A software company of Capability Maturity Model (CMM) level 4 has delivered “abc” software to “XYZ” company. Later on, “XYZ” company requested some feature extensions and bug fixes. The cost for proposed maintenance activities was a burden for “XYZ” company as they don’t have enough resources now. So, the management team prioritized important features and bug fixes.	
	a)	What do you understand by software maintenance? Briefly explain the CMM model along with its different levels.	1+4 (CO1) (PO1)
	b)	How “abc” software will evolve through maintenance activities? Using Lehman’s laws, explain what properties of evolution will affect the “abc” software through gradual maintenance works.	2+5 (CO1) (PO1, PO2)
	c)	What model of software maintenance was adopted in the above mentioned scenario? If you replace this model with Osborne’s model, what would have changed? Briefly explain.	2+6 (CO2) (PO2)
	d)	According to the maintenance framework, briefly explain how the maintenance process will be conducted for the mentioned case in the scenario.	5 (CO1) (PO1)
2.		“XYZ” company wants to redevelop their existing Enterprise Resource Planning (ERP) software. They also plan on having some new technological features in their software. They have contacted “AYZ” software company about this. “AYZ” software company found that there are no documentation and information about different modules of the legacy system. So every information regarding the legacy system needs to be reconstructed.	
	a)	How will “AYZ” company extract information regarding the legacy system? To integrate the new requirements, explain how will the “AYZ” company adjust information from different levels of abstractions?	3+12 (CO2) (PO1)
	b)	From the information obtained in 2. (a), how will the “AYZ” company use different supporting techniques to solve the request of “XYZ”?	10 (CO1) (PO1)
3.		A CMM level 2 software company, “AYZ”, received a request to make a software that has some similarities with their existing projects. However, to develop this software, they need information about different modules of the existing projects that are common and required for the new software.	
	a)	Which process will they follow to use the existing components in the new software? Explain the possible targets or resources from their existing projects they need to focus	2+6 (CO1)

		on to develop the new software.	(PO1)
	b)	How will the “AYZ” company identify the components and what are their characteristics? Elaborate on the approach “AYZ” should follow to use these components and problems that will occur in the long run.	3+7 (CO1) (PO1)
	c)	<p>“AYZ” company adopted Generic Process Model for using existing components into the new software.</p> <p>Explain how they will handle the implementation process and why the accommodating process model will perform worse in this case.</p>	4+3 (CO2) (PO2)