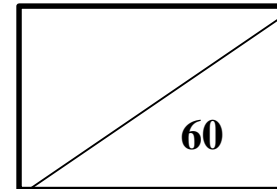**TARC**
TUNKU ABDUL RAHMAN
UNIVERSITY COLLEGE

BACS2163 Software Engineering
Midterm Test 1 2021/2022

Name: _____   Marks:

Program (Tutorial Group): _____

60

Instructions to Candidates:

- Answer **ALL** questions in the requested format or the template provided.
- Answer must be submitted in .pdf format and name the answer file with (**PROGRAMME OF STUDY_TUTORIAL GROUP_FULL NAME_STUDENT ID**)
- This is an open book e-test but you **MUST NOT** receive any help whatsoever from any other person.
- Read all the questions carefully and understand what you are being asked to answer.
- You must submit your answer within the time frame allotted for the e-test and submit to the Google Classroom.
- Marks are awarded for your own (original) analysis. Therefore, use the time and information to build well-constructed answers.
- Aim for concise, accurate, thoughtful answers with accompanying supporting explanations and justifications.

Declaration by candidates:

By submitting this e-test, I declare that this submitted work is free from all forms of plagiarism and for all intents and purposes is my own properly derived work. I understand that I have to bear the consequences if I fail to do so.

Answer ALL questions (60 marks)

QUESTION 1

AuctionGallery Sdn. Bhd. is a local company established for more than ten years. The main branch office of the company is located at Kuala Lumpur and the other branch offices are located in Johor, Penang and Sarawak. Recently the company is planning to launch its new product, an online auction system that allows people to negotiate over the buying and selling of goods (over the Internet).

You, as one of the project managers in your software organization, have been appointed to lead a group of 8 senior software engineers in your company. Your team has been given the responsibility to develop an online auction system that allows people to negotiate over the buying and selling of goods (over the Internet). The company owners want to rival the Internet auctioning sites, such as eBay. The system must also make sure that it is accessible 24/7 to all buyers and sellers. The requirements gathered were clear and could be modularized easily. The company requires that the new online system be completed within three months.

a) Explain the need to learn software engineering concepts. (2 marks)

b) Discuss **TWO (2)** characteristics of a software. (4 marks)

c) Based on the scenario in **Question 1**, suggest **ONE (1)** suitable Software Process Model to develop the online auction system. Justify your suggestion based on the scenario given. You may state any relevant assumptions to support your answer. (1 + 6 marks)

QUESTION 2

a) Construct a *Gantt Chart* for developing an online system based on the following table. Assume that the project starts in January. (14 marks)

Task ID	Task Description	Predecessor	Duration (month)	Overlap (month)
A	Requirement Engineering	None	¼	None
B	System Analysis and Design	A	½	None
C	Customer Feedback	B	1	¼
D	Coding	C	1¼	½
E	Customer Feedback	D	½	¼
F	Testing	D	1	½
G	Deployment	F	½	None

QUESTION 3

SuperSonic Sdn Bhd is using the Human Resourse Manangemnt System to manage their manpower. The system's functions include staff management, leave application, training and payroll.

a) Identify **TWO (2)** User Requirements and **FOUR (4)** System Requirement from the Human Resourse Management System. (6 marks)

b) Explain **TWO (2)** non-functional requirements that the Human Resource Management System must fulfill. (4 marks)

QUESTION 4

SoftIT Sdn Bhd is developing a software for SnorWhite Hotel. Among the requirements of the software are assignment of housekeeping tasks, automatic notification of work completion, and update of work progress.

The development of the software is performed during the pandemic period as the hotel staff may have more time to discuss in details on the system. SoftIT has decided to apply viewpoint-oriented analysis in the requirement analysis stage.

a) Identify **FIVE (5)** viewpoints of *SnorWhite Housekeeping Solution* and prepare a Viewpoint Hierarchy. (9 marks)

b) Suggest **ONE (1)** elicitation technique that cannot be applied from the viewpoints you have identified in **Question 1 a)**. Justify your answer. (2 + 2 marks)

QUESTION 5

Haiwaiti Sdn Bhd is a renowned company selling mooncake since 1966 with variety of flavors and types. You are cordially invited to a meeting with the IT department of Haiwaiti Sdn Bhd to discuss on the maintenance of their legacy systems. One of their legacy systems is a file storage server which stores large amount of the mooncake-related documents, such as seasonal menu, flavors, types, drafts write-ups and supporting images to be shared throughout the organization.

a) Based on the above case study, assume that Haiwaiti Sdn Bhd decided to re-engineer the legacy system. Propose **ONE (1)** system organization/structuring design model. You are required to justify your answer. (2 + 4 marks)

b) Based on the proposed system organization/structuring design model in **Question 5 a)**, suggest **TWO (2)** advantages and **TWO (2)** disadvantages of the system organization/structuring design model.
(2 + 2 marks)