CROSS RIVER UNIVERSITY OF TECHNOLOGY, CALABAR
DEPARTMENT OF COMPUTER SCIENCE
SECOND SEMESTER EXAMINATIONS 2018/2019 SESSION
Course Code / Title: 4203 – Project Management
Instruction: Answer all questions in section A and any two from section B **TIME: 2HRS**

SECTION A: (Answer all questions)

Question 1 (20 marks)

a. Your organization is developing software for a railway crossing. The system description is as follows: A sensor on the rails detects when a train is arriving and lowers the bars over the road. The bars remains lowered until another sensor detects that the train has passed or until a signal from the Railway Control Centre (RCC) is received. If the sensors malfunction, or if the connection to the RCC is lost, the bars are lowered and shall remain lowered until everything is working again and they are reset from the RCC. While the bar is being lowered or raised and while the bar is in its lowered position, lights will flash and a bell will ring.

As a Project Manager, one of your tasks is to choose a suitable software process model for this project.

i. What model do you think is most suitable for this project?
ii. State two-ill feelings you have about such model.
iii. Identify and explain at least three (3) types of risk that might be associated with this project. How can you manage such risks?

b. i. What is the critical distinction between a milestone and deliverable?
ii. Why is software project said to be more difficult to manage than those of other engineering fields. Give three reasons.
iii. Differentiate between risk identification, risk mitigation, risk monitoring in software project.
c. Give three (3) reasons why it essential to plan an IS project in details before starting working on it.

Question 2 (20 marks)

a. Network diagram and bar charts have different parts to play in planning a project. Where is each of these tools used and what does it shows?

Scenario A:

Paul is a software project manager working in a company that develops alarm systems. This company wishes to enter the growing market of assistive technology to help elderly and disable people live independently. Paul has been asked to lead a team of 9 developers that can develop new products based around the company's alarm technology.

Paul assistive technology project starts well. Good working relationships develop within the team and creative new ideas are developed. The team decides to develop a peer-to-peer messaging system using digital televisions linked to the alarm network for communications. However, some months into the project, Paul noticed that Michelle, a hardware design expert, starts coming into work late, the quality of her work deteriorates and, increasingly, that she does not appear to be communicating with other members of the team.

Paul talks about the problem informally with other team members to try to find out if Michelle's personal circumstances have changed, and if this might be affecting her work. They don't know of anything, so Paul decides to talk with Michelle to try to understand the problem.

After some initial denials that there is a problem, Michelle admits that she has lost interest in the job. She expected that she would be able to develop and use her hardware interfacing skills. However, because of the product direction that has been chosen, she has little opportunity for this. Basically, she is working as a C++ programmer with other team members.

Although she admits that the work is challenging, she is concerned that she is not developing her interfacing skills. She is worried that finding a job that involves hardware interfacing will be difficult after this project. Because she does not want to upset the team by revealing that she is thinking about the next project she has decided that it is best to minimize conversation with them.

Using the above scenario

(b) (i) Discuss four critical skills that you think Paul requires in Managing Michelle

(ii) Explain two types of human needs that would help in motivating Michelle

c. On the assumption that for the above scenario project, the task and deliverables estimates were given as:

Most Optimistic Estimate (days) = 10
Most Likely Estimates (days) = 14
Most Pessimistic Estimate (days) = 24

Using the Programme Evaluation and Review Technique (PERT)

(i) State the formula for estimating the task and deliverables

(ii) Calculate the Weighted Average days it would actually take to complete the task and deliverables.

SECTION B (Answer any two questions)

Question 3 (15 marks)

Scenario B

Paul being an experienced project manager, understands the importance of creating a cohesive group. As they are developing a new project, he takes the opportunity of involving all group members in the product specification and design by getting them to discuss possible technology with elderly members of their families. He also encourages them to bring these family members to meet other members of the development group.

Paul also arranges monthly lunches for everyone in the group. These lunches are an opportunity for all team members to meet informally, talk around issues of concern, and get to know each other. At the lunch, Paul tells the group what he knows about organizational news, policies, strategies and so forth. Each team member then briefly summarizes what they are have been doing and the group discusses a general topic, such as new product ideas from elderly relatives.

Every few months, Paul organizes an 'away day' for the group where the team spends two days on 'technology updating'. Each team member prepares and update on a relevant technology and presents it to the group. This is an off-site meeting in a good hotel and plenty of time is scheduled for discussion and social interaction.

a. Discuss three (3) factors that are likely to affect Paul's expected team work activities.
b. Mention five (5) factors that would enhance Paul and his team member's communication.
c. Mention four (4) attributes that you consider Paul must have possessed to be appointed as a Project Manager.

Question 4 (15 marks)

Scenario C

In creating a group for assistive technology development, Paul is aware of the importance of selecting members with complementary personalities. When interviewing potential group members, he tries to assess whether they were task-oriented, self-oriented, or interaction-oriented. He felt that he was primarily a self-oriented type because he considered the project to be a way of getting noticed by senior management and possibly promoted. He therefore looked for one or perhaps two interaction-oriented individuals to complete the team. The final assessment that he arrived at was:
Paul: Self-oriented

Smart: Interaction-oriented
Victor: Task-oriented
Anna: Self-oriented
Arikpo: Task-oriented
Sixtus: Task-oriented
Itam: Interaction-oriented

a. Personality type highly influences motivation when you are a member of a cohesive group. Considering the above scenario, briefly explain the following personality type:
i. Task-oriented people
ii. Self-oriented people
iii. Interaction-oriented people
b. (i) Which of the personality type mention in the above scenario is associated with people who always like to work as part of a group/team. Why?
(ii) Which sex or gender are more likely to be interaction oriented than the other and why?
c. Besides project and organizational issues, scale out three (3) factors that affect team working.

Question 5 (15 marks)

a. What is software project management?
b. Your software company is to develop a face recognition system for use on the robot. The system description is as follows: The system is intended to greet visitors to the robotics laboratory. It should recognize faces it has been before with a reasonable reliability etc. As a project manager:
i. List out and briefly explain your responsibilities in all the stages of the project.
ii. What qualifies your project to be considered a “successful project”?
iii. Why should you include a WBS (Work Breakdown Structure) in your plan?
c. Distinguished between **Work Breakdown Structure** and **Product Breakdown Structure**