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

MID SEMESTER EXAMINATION
DURATION: 1 HOUR 30 MINUTES

SUMMER SEMESTER, 2022-2023
FULL MARKS: 50

CSE 4407: System Analysis and Design

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

Answer all 3 (three) questions. Figures in the right margin indicate full marks of questions with corresponding COs and POs in parentheses.

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1. a) Differentiate between Management Information Systems (MIS) and Decision Support Systems (DSS)? 4
(CO1)
(PO1)
- b) What are the key factors to consider when selecting an appropriate software development methodology, specifically comparing the Software Development Life Cycle (SDLC) and Agile approaches? 6
(CO1)
(PO1)
- c) List three roles that the systems analyst is called upon to play. Define each one. 6
(CO1)
(PO1)
2. a) Consider the following scenarios: "It's really some choice. I mean, no single package seems to have everything we want. Some of them come pretty close, though," says Roman, an advertising executive for Empire Magazine with whom you have been working on a systems project. Recently, the two of you have decided that packaged software would probably suit the advertising department's needs and stem its general decline.
- "The last guy's demo we saw, you know, the one who worked for Data Coliseum, really had a well-rounded pitch. And I like their brochure. Full-color printing, on card stock. Classic," Roman asserts. And what about those people from Vesta Systems? They're really fired up. And their package was easy to use with a minimum of ceremony. Besides, they said they would train all 12 of us, onsite, at no charge. But look at their advertising. They just take things off their printers."
- Roman moves restlessly in his chair as he continues his ad hoc review of software and software vendors. "That one package from Mars, Inc., really sold me all on its own, though. I mean, it had a built-in calendar. And I like the way the menus for the screen displays could all be chosen by Roman numerals. It was easy to follow. And the vendor isn't going to be hard to move on price. I think they're already in a price war."
- "Do you want to know my favorite, though?" Roman asks confidently. "It's the one put out by Jupiter Unlimited. I mean, it has everything, doesn't it? It costs a little extra coin, but it does what we need it to do, and the documentation is heavenly. They don't do any training, of course. They think they're above it."
- You are already plotting that to answer Roman's burning questions by your March 15 deadline, you need to evaluate the software as well as the vendors, systematically, and then render a decision.
- i. Evaluate each vendor and package based on what Roman has said so far (assume you can trust his opinions). 5
(CO2)
(PO1)
- ii. What are Roman's apparent biases when evaluating software and vendors? 3
(CO2)
(PO1)

- iii. What additional information do you need about each company and its software before making a selection? Set up a table to evaluate each vendor. 4
(CO2)
(PO1)
- b) Draw a PERT diagram for the data in Table 1. Then identify and calculate the critical path. 6
(CO3)
(PO1)

Table 1: Data for Question 2.b

Description	Task	Must Follow	Time (Weeks)
Draw data flow	A	None	5
Draw decision tree	B	A	4
Revise tree	C	B	10
Write up project	D	C, I	4
Organize data dictionary	E	A	7
Do output prototype	F	None	2
Revise output design	G	F	9
Write use cases	H	None	10
Design database	I	H, E, G	8

3. a) What are the four actions that can be taken to ensure that the questionnaire format is conducive to a good response rate? 4
(CO2)
(PO1)
- b) Define the diamond-shaped structure for interviews. When is it useful to employ it in interviews? 4
(CO2)
(PO1)
- c) Consider the following scenario: "We are a progressive company, always looking to be ahead of the power curve. We'll give anything a whirl if it will put us ahead of the competition, and that includes every one of us," says I. B. Daring, an executive with Michigan Manufacturing (2M). You are interviewing him as a preliminary step in a systems project, one in which his subordinates have expressed interest. As you listen to I. B., you look around his office to see that most of the information he has stored on shelves can be classified as internal procedures manuals. In addition, you notice a PC on a back table of I. B.'s office. The display screen is dust-covered, and the manuals stacked beside the PC are still encased in their original shrink-wrap. Even though you know that 2M uses an intranet, no cables are visible going to or from I. B.'s PC. On the wall behind I. B.'s massive mahogany desk you see five framed oil portraits of 2M's founders, all clustered around a gold plaque bearing the corporate slogan, which states, "Make sure you are right, then go ahead."
- i. What is the organizational narrative or storyline as portrayed by I. B. Daring? Rephrase it in your words. 4
(CO3)
(PO1)
- ii. List the elements of STROBE that you have observed during your interview and next to each element of STROBE that you have observed, write a sentence on how you would interpret it. 4
(CO3)
(PO2)