



NATIONAL SCHOOL OF BUSINESS MANAGEMENT

BSc in Management Information Systems (Special) (NSBM)– 19.2/20.1

BSc (Hons) in Software Engineering (NSBM)– 19.2/20.1

BSc (Hons) in Computer Science (NSBM)– 19.2/20.1

BSc (Hons) Management Information Systems (UCD)– 19.2/20.1

Year 02 Semester 02 Examination

21st October 2021

SE202.3- Introduction to Software Engineering

Instructions to Candidates

- 1) **Answer all FOUR (4) questions.**
- 2) **Time allocated for the examination is five (05) hours (Including downloading and uploading time).** (Note: No email submissions are accepted under any condition.)
- 3) Weightage of Examination: 60% out of final grade
- 4) Download the paper, provide answers to the selected questions in a word document.
- 5) Please upload the document with answers (Answer Script) to the submission link before the submission link expires
- 6) Answer script should be uploaded in PDF Format
- 7) Under any circumstances E-mail submissions would not be taken into consideration for marking. Incomplete attempt would be counted as a MISSED ATTEMPT.
- 8) The Naming convention of the answer script – Module Code_Subject name_Index No
- 9) You must adhere to the online examination guidelines when submitting the answer script to N-Learn.
- 10) Your answers will be subjected to Turnitin similarity check, hence, direct copying and pasting from internet sources, friend's answers etc. will be penalized.

For all questions: Refer case study and provide answers

Case study:

Ranga is a fresh graduate who has started his own company called "IT Solution," an outsourcing software firm. At present there are 25 employees working for the company in full-time, covering different engineering disciplines, like development, QA, PM, etc. Apart from that part-time resource pool also available. Based on the project requirements and skill requirements the company is getting work done from part-time human resources.

The company, "IT solution" was able to get one of the largest projects from UK based bank. In one of the project meetings, he states that this will be the changing point and new direction to their company. UK banks want to develop an e-banking system. They are expecting to have their first release in two (2) months period. In the project proposal document "IT solution company" mentions that the budget would be 50000 USD.

During project requirement discussion meeting client highlighted that they need to align their system with current market competition and hence they need frequent releases. In the first release they are targeting only main flows where end users will be able to register with the system, login to the system, check their balance, do transactions, check transaction history.

Ranga is requesting your support as a project manager to deliver the product with expected quality.

Question 1: .25 marks

- 1) As a project manager what are the risks you can predict in this software development project?
List down main 5 risks and explain them in brief. (10 marks)
- 2) As a project manager how can you overcome the risks identified in question (1)? Briefly explain 5 strategies to overcome the identified risks. (10 marks)

Software Development Life Cycle is a process that produces software with the highest quality and lowest cost in the shortest time. There are various software development life cycle models defined and designed which are followed during the software development process. These models are also referred a "Software Development Process Models"

- 3) What would be the most appropriate software development methodology for this case study. Justify your answer by providing two (2) reasons. (05 marks)

***You may provide assumptions as appropriate. ***

Question 2: (25 marks)

Well-engineered and crafted software is expected to have the Operational, Transitional and Revision characteristics.

- 1) Briefly explain how you could achieve the Operational, Transitional and Revision characteristics in above software development. You need to provide two (2) examples for each characteristic. (18 marks)

During project initiation meeting, one of the stakeholders highlighted that “It is better to conduct feasibility study”

- 2) Did you agree with above statement? Explain two (2) reasons to justify your answer. (04 marks)
- 3) For the above-mentioned use case what would be the most appropriate implementation type. Explain your answer with justification. (03 marks)

Question 3: (25 marks)

Testing is the process of executing a program with the intention of finding errors. It can show the presence of bugs but never their absence.

- 1) Discuss when to start and when to stop testing for the above-mentioned case study. (10 marks)
- 2) Name three software-testing strategies for the case study. (Hint: X-Box Testing). (3 marks)
- 3) What are the testing levels appropriate for the case study? List down main four (4) levels. (4 marks)
- 4) Explain the identified testing levels by providing examples from the case study. (8 marks)

Question 4: (25 marks)

- 1) Compare and contrast validation and verification proving suitable examples from the case study. State main five (5) reasons. (05 marks)
- 2) Explain five (5) main functional test types. (10 marks)
- 3) Explain five (5) main nonfunctional test types with justifications. (10 marks)

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