



UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION SEMESTER II SESSION 2009/2010

SUBJECT NAME : **REQUIREMENT ANALYSIS AND
SOFTWARE SPECIFICATION**

SUBJECT CODE : **BIT 3143**

COURSE : **3 BIT**

EXAMINATION DATE : **APRIL/MAY 2010**

DURATION : **2 HOURS AND 30 MINUTES**

INSTRUCTION : **ANSWER ALL QUESTIONS.**

THIS QUESTION PAPER CONTAINS FIVE (5) PAGES

SECTION A

Instruction: Answer **ALL** questions.

- Q1** Give definition for the following terms:
- (a) Functional requirements
 - (b) Non-functional requirements
 - (c) Software Requirements Document (SRD)
 - (d) Software Requirements Specification (SRS)
- (8 marks)
- Q2** Describe a lifeline and activation in sequence diagrams.
- (5 marks)
- Q3** (a) What are the **THREE** (3) levels of decision making?
- (6 marks)
- (b) State the typical IT solutions which are aligned with the answer in **Q3(a)**.
- (6 marks)
- Q4** (a) Describe the meaning of requirement.
- (3 marks)
- (b) Explain **FOUR** (4) important techniques in gathering requirements.
- (12 marks)
- Q5** Draw a use-case diagram for a standard Automatic Banking Teller Machine (ATM) system.
- (10 marks)
- Q6** Draw an activity diagram for a standard Automatic Banking Teller Machine (ATM) system for Valid Transaction activity.
- (10 marks)

SECTION B

Instruction: Answer **ALL** questions.

Q7 Based on the following scenario below:

ADN video store intends to offer rentals and sales of entertainment material to the wider public. The video store will keep a stock of video tapes, CDs (games and music) and DVDs. The inventory has been ordered from suppliers. All entertainment media will be bar coded so that a scanning machine integrated with the system can support the rentals, returns, and sales. Existing customers will be able to place reservations on entertainment material to be collected at a specific date. The system must have a flexible search engine to answer customer enquiries, including enquiries about the material that the video store does not stock but may order it on request.

- (a) Design a systematic table of contents for the IEEE standard SRD. However you can omit sections on Appendix and Bibliography. (5 marks)
- (b) List all the user requirements, system requirements and functional requirements in your SRD. (10 marks)
- (c) Draw Software Requirements Specification (SRS) in your SRD using object-oriented approach. In your SRS, you should include
 - (i) Use-Case Diagram
 - (ii) Sequence Diagram with flow of events
 - (iii) Class Diagram
 - (iv) Activity Diagram(25 marks)

BAHAGIAN A

Arahan: Jawab **SEMUA** soalan.

- S1** Berikan maksud bagi istilah-istilah berikut:
- (a) *Functional requirements*
 - (b) *Non-functional requirements*
 - (c) *Software Requirements Document (SRD)*
 - (d) *Software Requirements Specification (SRS)*
- (8 markah)
- S2** Jelaskan *lifeline* dan *activation* dalam rajah *sequence*.
- (5 markah)
- S3** (a) Apakah **TIGA** (3) aras untuk membuat keputusan?
- (6 markah)
- (b) Nyatakan penyelesaian tipikal IT yang sejajar dengan jawapan di **S3(a)**.
- (6 markah)
- S4** (a) Terangkan maksud keperluan.
- (3 markah)
- (b) Terangkan **EMPAT** (4) teknik-teknik penting untuk mengumpulkan keperluan.
- (12 markah)
- S5** Lukiskan rajah *use-case* bagi sistem *Automatic Banking Teller Machine (ATM)* yang *standard*.
- (10 markah)
- S6** Lukiskan rajah *Activity* bagi aktiviti Pengesahan Transaksi untuk sistem *Automatic Banking Teller Machine (ATM)* yang *standard*.
- (10 markah)

BAHAGIAN B

Arahan: Jawab **SEMUA** soalan.

S7 Berdasarkan senario berikut:

ADN kedai video bercadang untuk menjual dan menyewa bahan hiburan kepada khalayak ramai. Kedai video tersebut akan menyimpan stok bagi pita video, CD (permainan dan muzik) dan DVD. Inventori bahan dipesan melalui pembekal. Semua media hiburan akan dikod bar supaya mesin pengimbas boleh berintegrasi dengan sistem yang menyokong proses penyewaan, pulangan dan penjualan. Pelanggan sedia ada boleh menempah bahan hiburan pada bila-bila masa ia diperlukan. Sistem tersebut membolehkan enjin carian secara fleksibel bagi menjawab semua pertanyaan pelanggan termasuk berkaitan bahan yang tiada dalam stok tetapi boleh menjadi permintaan dalam pesanan.

- (a) Reka bentuk isi kandungan yang sistematik bagi SRD yang mengikut *standard IEEE*. Walau bagaimanapun, Lampiran dan Bibliografi tidak perlu disertakan.
(5 markah)
- (b) Senaraikan semua keperluan pengguna, keperluan sistem dan keperluan fungsian dalam SRD.
(10 markah)
- (c) Lukiskan *Software Requirements Specification (SRS)* dalam SRD
 - (iii) Rajah *Class*
 - (iv) Rajah *Activity*(25 markah)