

**International Islamic University Chittagong**  
**Department of Computer Science & Engineering**  
*B. Sc. in CSE Semester Final Examination, Spring 2018*  
**Course Code: CSE 3605 Course Title: Systems Analysis and Design**  
Total marks: 50 Time: 2 hours 30mins

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[Answer any *two* questions from **Group-A** and any *three* questions from **Group-B**; Separate answer script must be used for Group-A and Group-B.]

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**Group-A**

- 1.a) What is cardinality? Explain the cardinalities in relationships with examples 3  
b) Describe the guidelines for drawing DFDs? 3  
c) Explain balancing and leveling in a context diagram of DFD. 3  
d) What is data dictionary? 1
- 2.a) A library has many books and many readers. One reader can borrow many books, one book can be borrowed by many readers at different time. If a book is lent to a reader, the lending date and return date must also be recorded. Attributes about book and reader are given below: 6  
▪ Book: book number, book name, author, price, publishing date, status;  
▪ Reader: card number, reader name, gender, address, phone number;  
Please draw an entity relationship diagram about book and reader, if necessary, add associative entity to represent the relationship between book and reader  
b) Draw an ERD of the given scenario with cardinality: 4  
Developer develops a website, whereas a Visitor visits a website  
There is only one developer exist and many website and visitor exist.
- 3.a) KFC is a famous International restaurant. Many people used to visit KFC every day. Draw a DFD of KFC Restaurant. 6  
a) Find the external entities.  
b) Draw the context diagram.  
c) Show level 0 DFD  
c) Describe about unary, binary, and ternary relationships with appropriate figures. 2  
d) What are the triggering operations in business rules 2

**Group-B**

- 4.a) Do you think testing is compulsory for a system? If yes then why? If no then why? 2  
b) To develop a registration form there are lots of field exist. What kind of testing can be implemented here? Why? Justify your answer. 3  
c) What is the difference between white box testing and black box testing? Describe with examples. 5
- 5.a) Describe the types of system maintenance. 4  
b) What are the factors that influence system maintainability? 2  
c) Show a diagram that indicates the controlling maintenance requests 2  
d) How website maintenance is done? 2
- 6.a) What do you mean by hardware and software requirements? 2  
b) Do you think security depends on the software? Justify your answer with examples. 3  
c) Write about Encryption methods. 2  
d) What is hacking? How can you be a hacker? 3
7. Write short notes on the following: (Any four) 2.5\*4  
a) CIA (Confidentiality, Integrity and Availability) triad  
b) Alpha and Beta testing  
c) Threats in software security  
d) Configuration management  
e) Coupling and Cohesion