

Course Code: CSE 301 Course Title: System Analysis and Design Total marks: 20

Note: Answer **2(TWO)** questions taking any **3(THREE)** questions.

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|----|--|-----|
| Q1 | (a) What are the key elements of a system? Write short note on following types of systems- (i) Deterministic or Probabilistic (ii) Physical or Abstract. | 2+3 |
| | (b) Define SDLC. Briefly describe the different stages in SDLC. | 1+4 |
| Q2 | (a) What is information? Describe different categories of information. | 1+4 |
| | (b) Define System and System Analysis. Describe the properties of a system. | 2+3 |
| Q3 | (a) Describe different types of skills should have a system analyst to analyze a system. | 6 |
| | (b) Write down the main roles of a <u>system</u> analyst in system analysis. | 4 |

Bangabandhu Sheikh Mujibur Rahman Science and Technology University
Department of Computer Science and Engineering
3rd Year 1st Semester B.Sc.Engg. Midterm Examination-2021

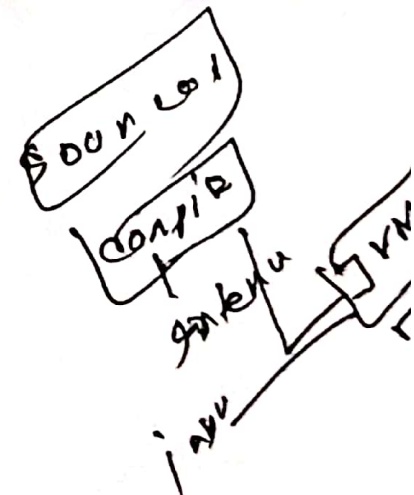
Marks: 20
Time: 1 hour

Course Code : CSE307
Course Title : Compiler Design

- Q1. What are the differences between Compiler and Interpreter? What is a hybrid compiler? Can you provide an example of a hybrid compiler with explanation? 2+1+2
- Q2. Define and explain the terms Preprocessor and Linker. What roles are played by Lexical Analyzer? 3+2
- Q3. Write a regular expression that generates the language over the alphabet {a, b} where each b in the string is followed by exactly one or three a's (so ε, aaa, and babaaa are in the language but baabaaa is not). Also draw the transition diagram of this regular expression. 3+2
- Q4.

```
a*b printf( "1" );  
(ab)*b printf( "2" );  
c* printf( "3" );
```


We have the above snippet. with patterns and their associated actions, from a Lex code. Show the output, with detailed explanations, that is produced when this scanner is run over the following strings:
(i) aaabccabbb
(ii) cbbbbbabc 2.5+2.5



Course Code: CSE 305 Course Title: Computer Architecture and Organization

Total marks: 20

Note: Answer **2(TWO)** questions taking any **3(THREE)** questions.

- Q1 (a) What is data path? Describe single bus organization of a Central Processing Unit(CPU) with necessary figures. 1+4
- (b) What is Interrupt? Why It is better than programmed control I/O? Explain with an example. 1+4
- Q2 (a) Write a assembly program that takes a line of characters one by one as input and show them in any output device. 5
- (b) Write down overall operation of a computer and major tasks of the components of functional unit. 2+3
- Q3 (a) Describe how memory is accessed showing connection between memory and Central Processing Unit(CPU) and write short note on the registers involved in memory access. 3.5+2.5
- (b) Draw block diagram of a 1-bit register. Write down the different techniques of 1.5+2.5

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Department of Computer Science & Engineering
B.Sc. Engineering (Midterm) Examination-2021

Course No: CSE303

Course Title: Operating Systems and System Programming

Full Marks: 20

Time: 01 hours

N.B.i) Answer all questions.

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|-----|---|---|
| Q.1 | (a) What do you mean by operating system? What are the usefulness of operating systems? | 5 |
| | (b) Define kernel and interrupt with examples. What do you mean by exceptions? | 5 |
| Q.2 | (a) Is a system call mandatory for operating system operations? If <u>yes</u> then why? | 4 |
| | (b) What is the relationship between API and system calls? | 2 |
| | (c) What is caching? What are the differences between cache and other types of memory? | 4 |

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Department of Computer Science and Engineering

3rd Year 1st Semester B.Sc. (Engg.) Mid Term Examination-2021

Course Title: Database Management Systems

Time: 01 hour

Course No.: CSE309

Full Marks: 20

N.B.

i) Answer any TWO questions.

ii) All questions are of equal marks.

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| 1. | a) | "In the view level, there are more views in the data abstraction" – justify this. | 3 |
| | b) | Mention the three main routine works of the database administrator. | 3 |
| | c) | Compare between DDL and DML with example. ✓ | 4 |
| 2. | a) | When a relationship type is need to convert into an associative entity type? | 2 |
| | b) | Which type of entity should not be considered in an ER diagram? Why? ✓ | 2 |
| | c) | Define the following terms with example: ✓
i. Multi-valued attribute ii. Derived attribute | 3 |
| | d) | Find out the cardinality and existence (i.e. optional or mandatory) for the following relationship.
i. Department and Subject ii. Author and Book | 3 |
| 3. | a) | Construct a clean and concise ER diagram for the following situations –
"In an organization, several projects are undertaken. Each project can employ one or more employees. Each employee can work on one or more projects. Each project is undertaken on the required of client. A client can request for several projects. Each project has only one client. A project can use a number of items and an item may use by several projects". | 8 |
| | b) | Compare between generalization and specialization with suitable example. | 2 |