Bangabandhu Sheikh Mujibur Rahman Science and Technology University, Gopalgonj.
Department of Computer Science and Engineering
3rd Year 2nd Semester BSc Engineering Examination-2015
CSE352: E-commerce and Web Engineering

Full Marks: 70 Times: 4 Hours

N.B.
i. Answer **SIX** questions, taking any **THREE** from each section.
ii. All questions are equal values.
iii. Use **separate answer script** for each section

SECTION-A

1. a) What is E-commerce? Discuss the advantages and disadvantages of E-commerce. 4
   b) What are the differences between E-commerce and M-commerce? 3.67
   c) Write short note a) shopping cart b) Credit card c) web site design tools d) Search Engine optimization. 4

2. a) What is Customer Relationship Management (CRM)? Distinguish between the E-CRM and Traditional CRM. 4
   b) How digital signature work? Explain it with proper example. 4
   c) Explain the e-shopping procedure in techshopbd or alike site. 3.67

3. a) Is public-key-cryptography a solution for maintaining your e-security? Explain with an example. 4
   b) Write short note about Ethical, legal, taxation and international issues in ecommerce. 4
   c) How you give customer service to your e-business client. 3.67

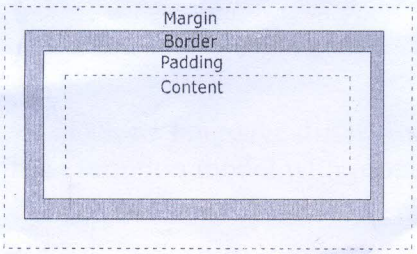
4. a) What is HTML? Give example of a simple html document. Explain each tag. 4
   b) Describe <img src="w3schools.jpg" alt="W3Schools.com" width="104" height="142"> 3.67
   c) What do you mean by a) ../dir/file.html b)/dir/file.html c) dir/file.html d) file.html. 4

SECTION-B

5 a) How a web page is found out by a search engine? As a web developer what measures you should take so that your web page is easily discovered in the search results of google or yahoo? 4
   b) What is X-HTML Compatibility? What measures should be taken by a web page designer so that his page is X-HTML compatible? 4
   c) Write purposes of the following HTML tags: <tit1e>, <a>, <hr>,
 3.67

6. a) What do you mean by DOM. Give example? 3.67
   b) Write a sample JavaScript code when you click on an image it turns into another image. 4
   c) What is CSS? Why it is called cascading style sheet. Give an example of proper CSS with HTML file. 4

7. a) Explain this box model with proper CSS. 3.67



   b) What do you mean by server site and client site scripting language? Why and when we use them. 4
   c) Write a simple HTML form that send data to PHP file and PHP file send it to MySQL database. 4

8 a) What do you mean by Ajax? What are the advantages of Ajax? Give an example of simple Ajax. 4
   b) What do you mean by session and cookies? What are the advantages and limitation of session and cookies? Give example of session and cookies in web document. 4
   c) <button onclick="getElementById('demo').innerHTML=Date()">The time is?</button> 3.67

   What happened if you click on the button?

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SECTION A

1. a) Write down the characteristics of 8086 microprocessor, which feature of a microprocessor determines the size and speed of it. 2.67

   b) Define microprocessor. Draw and explain the functional block diagram of 8086 microprocessor. 5

   c) Mention the trade-off of choosing between assembly and high level language. 2

   d) How does CMPSB instruction work? 2

2. a) What are the functions of (i) Assembler and (ii) Emulator. 2

   b) What do you know about addressing mode? Determine what kind of addressing modes have used in the following instructions: 7

   (i) MOV BX, [1354H] (ii) MOV [BX+SI], BP (iii) MOV AX, [BX]

   (iv) MOV AX, [BX+8] (v) IN AL, [09H]

   c) What is recursive procedure? What are the difference between near call and far call? 2.67

3. a) What do you mean by 32-bit microprocessor? 1

   b) Describe the function of 8086 Queue. How the queue speed up the processing? 2.67

   c) What are the differences between the following instructions? 6

   (i) REP and REPE (ii) JAM and JAE (iii)CLD and STD (iv)ROL and ROR (v) REP and LOOP

   d) What are the segment registers used in 8086? Explain. 2

4. a) What is the difference between direct memory addressing and indirect memory addressing? Show example for each of them. 2

   b) Let us consider ES=7FA2 and SI=437BH. Then 1.67

   (i) Determine physical address.

   (ii) Calculate lower and upper range of Extra Segment (ES).

   (iii) Calculate maximum size of Extra Segment.

   c) What is the significance of flag register? Write down the functions of different flags of flag register on 8086 microprocessor. 4

   d) How does machine language differ from assembly language? Write down the three cycle instruction execution model with proper example. 4

SECTION B

5. a) Define interrupt and interrupt vector. Describe the steps that 8086 microprocessor will take when it responds to an interrupt. 3

   b) Write the functions of the following assembler directives: 5.67

   (i) EQU (ii) PROC (iii) DQ (iv) ENDP (v) ASSUME

   c) What do you mean by special processors? Give some examples. Show the comparisons between RISC and CISC processors. 3

6. a) Define multiprocessor system. Write down the advantages of multiprocessor system. 2

   b) Write down the purpose of the following pins of 8086 microprocessor. 5.67

   (i) INTR (ii) MN/MX (iii) BHE (iv) ALE (v) DT/R

   c) Define segmentation. Write down the benefits of it in 8086 architecture. 2

   d) Distinguish between memory mapping and I/O mapping. 2

7. a) Describe the following interrupts with suitable examples 3
   (i) Hardware Interrupt (ii) Non-Maskable interrupt (iii) Software interrupt.

   b) Describe the operations and results of each of the following instructions or group of instructions: 6
   (i) ROL BX,1 (ii) DIV BL (iii) MOV [BX][SI],CL
   (iv)
```
DOWN: MOV BL,94H
      DEC BL
      JNZ DOWN
```
   (v) SHL AX,1

   c) What are the differences between unconditional jump and conditional jump instructions? 2.67
   Consider the following delay loop.
```
MOV CX,800h
DLY: DEC CX
     NOP
JNZ DLY
```
   (i) How many times the JNZ DLY instruction will execute?
   (ii) Change the program so that JNZ DLY is executed 12 times.

8. a) What is co-processor? Write down the features of 8087 co-processor. 2

   b) Write down the assembly language instruction with interrupts for the following function: 3
   (i) Output a character (ii) Exit (iii) Output a string

   c) Describe different data transfer types for communicating between I/O device and microprocessor. 2.67

   d) Differentiate between 8086 and 8088 microprocessor. 2

   e) "Both units: BIU(Bus interface Unit) and EU(Execution Unit) of 8086 operate independently to speed up processing" justify the statement with necessary logic or example. 2

Bangabandhu Sheikh Mujibur Rahman Science and Technology University, Gopalganj
Department of computer Science & Engineering
3rd year 2nd Semester B.Sc. Engg. Examination-2015
Course No.: CSE350 Course Name: System Analysis and Design

Full Marks: 70 Times: 4 Hours

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SECTION A

1. a) Define a system. What are the characteristic and element of ~~information~~ system? 1+4
   b) How important is the informal information system in system analysis? Explain. 2.67
   c) Discuss the concepts of MIS and DSS. How are they related? How do they differ? 2+2

2. a) What is system development life cycle? 1
   b) How would an analyst determine the user's need for a system? Explain. 3.67
   c) Why is a system proposal so crucial for system design? 3
   d) When does an analyst terminate a project? How does it tie in with post implementation? 2+2

3. a) What do you mean by quality control? Give example. 1
   b) Elaborate on the technical and interpersonal skills required of systems analysts. 4.67
   c) What academic qualifications are important for systems work? Explain. 3
   d) Discuss the behavioral issues involved in understanding the analyst/user interface. 3

4. a) Where does information originate? 1
   b) Summarize the advantages and limitations of interviews and questionnaires. 2+2
   c) Distinguish between direct and indirect cost. 2
   d) Describe the major varieties of closed questions. 4.67

SECTION B

5. a) What is structured analysis? Write down the attributes of it. 1+3
   b) What is DFD? Describe the procedure used in constructing DFD. 1+3
   c) What points should be considered in constructing a data dictionary? Be specific. 3.67

6. a) What is feasibility study? Discuss its importance. 4
   b) Illustrate the key considerations that are involved in feasibility study. 3
   c) Discuss the classifications of costs and benefits 3
   d) What is present value of $10000 invested at 15 percent interest for six years. 1.67

7. a) What is the goal of input design? 1
   b) What is a form? Summarize the characteristics of action, memory and report forms. 1+3
   c) What is system testing? Describe the various types of system testing. 3.67
   d) Explain the levels of quality assurance of a system. 3

8. a) Why do we test systems? How important is testing? 2+2
   b) What software criteria are considered for selection? Summarize. 3.67
   c) What is system security? Explain the threats to system security. 1+3

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Section- A

1. (a) What do you mean by software engineering? 3
   (b) Compare Software and Hardware in terms of failure rate. 3
   (c) Why adding more people in a beheld the schedule project will not be able to help catch up the project? (behind) 3
   (d) What is the Origin of changes that are requested for software? 2.67

2. (a) What is Software Development Life Cycle (SDLC)? 2
   (b) When is it suitable to use the RAD model? Why is it not suitable at other times? 3+3
   (c) Explain the project management spectrum. 3.67

3. (a) Why do we hear both "Customers" and "End Users" the stale (stack) holders in a software development project? 1.67
   (b) What are the factors of a toxic team environment? How can it be avoided? 2+2
   (c) Describe the W5HH principle? 4
   (d) What are the signs that a project is in jeopardy? 2

4. (a) Why do we need to measure a software project/process? 3
   (b) What are the arguments behind the LOC and FP measure? 4
   (c) Why it is difficult to reconcile LOC and FP matrices? 1.67
   (d) You have a software for which you wrote 1538 lines of codes. You discovered 134 errors before delivery and were reported of 85 defects after delivery. You have another software of 2358 lines of codes. Number of errors and defects this software is 185 and 90 respectively. Which software is better quality in terms of defect removal efficiency? Explain your answer. 3

Section B

5. (a) What are the tasks of requirements Engineering? Describe briefly. 3.67
   (b) What are the arts of negotiation? 3
   (c) What are the goals of Analysis Models? 3
   (d) What is cardinality? Give Example. 2

6. (a) Draw a use case diagram for an ATM technician who manages an ATM Booth. 3.67
   (b) List some common causes for late deliveary of software. 3
   (c) What are the generally accepted guidelines for project effort distribution? Is it really only around 20% times for coding? Explain you answer. 1+2
   (d) Why do we need Error Tracking? 2

7. (a) What are software reliability and unreliability? MTBF = MTTF + MTTP 3
   (b) What does software quality assurance process encompass? 3.67
   (c) Why is maintenance necessary? 2
   (d) Describe the types of maintenance. 3

8. (a) Why is maintenance cost higher then development? 2
   (b) What are the maintenance cost factors? 3
   (c) Compare incremental & non-incremental intervention testing? Which one is better? 3.67
   (d) Compare white box and black box testing? (integration) 3

ii. All questions are of equal values
iii. Use **separate answer script** for each section.

SECTION A

1. a) What is Operating System? 1.67
   b) What is thread? Why do we need multiple threads instead of multiple processes? 3
   c) List and explain various types of operating system services. 5
   d) Define Multiprocessor system. What are the advantages of multiprocessor system? 1+1

2. a) What is system call? Elaborate different types of system calls. 1+4
   b) What are the three major activities of an OS in regard to memory management? 3
   c) What is semaphore? What are the advantages of using semaphore? Write a program using semaphore that can synchronize processes. 3.67

3. a) What is process? 1
   b) Define short-term, medium-term and long-term scheduling. 3
   c) Explain the process control block. 5
   d) Write down several reasons for providing an environment that allows process cooperation. 2.67

4. Consider the following set of processes, with the length of the CPU-burst time given in milliseconds. The process are assumed to have arrived in the order P1, P2, P3, P4, P5, all at time 0. Consider the FCFS, SJF, a nonpreemptive priority(a smaller priority number implies a higher priority) and RR(Quantum=10) scheduling algorithm for the given set of process.

Process	Burst Time	Priority
P1	10	3
P2	1	1
P3	2	5
P4	1	4
P5	5	2

   a) What is the turnaround time of each process for each above scheduling algorithms? 4
   b) What is the waiting time of each process for each above scheduling algorithms? 4
   c) Which of the above scheduling algorithms results in the minimal average waiting time? 3.67

SECTION B

5. a) What is deadlock? When does deadlock occur and how can deadlocks be handled? 1+3
   b) Consider the following snapshot of a system:

	Allocation				Max				Available			
	A	B	C	D	A	B	C	D	A	B	C	D
P0	0	0	1	2	0	0	1	2	1	5	2	0
P1	1	0	0	0	1	7	5	0				
P2	1	3	5	4	2	3	5	6				
P3	0	6	3	2	0	6	5	2				
P4	0	0	1	4	0	6	5	6				

   Answer the following questions using the banker's algorithm
   i. What is the content of the matrix Need? 2.5
   ii. If a request from process P1 arrives for (0,4,2,0) can the request be granted immediately? Why? 2.5
   c) What are the differences deadlock prevention and deadlock avoidance? 2.67