

OOP Term Test-1

Software Engineering

1. Explain core OOP principles.
2. Explain following keyword: i) this ii) super
3. Explain pass-by-value and pass-by-reference with example.

OOP Term Test-2

Software Engineering

1. Write output of the following Java program.

```
1
2  import java.util.StringTokenizer;
3
4
5  public class StringTest {
6
7
8      public static void main(String[] args) {
9          String s = "This is a test named JAVA OOP";
10         System.out.println(s.substring(0,5));
11         System.out.println(s.equals("hello"));
12         System.out.println(s.concat("hello"));
13         System.out.println(s.replaceAll("test","exam"));
14         System.out.println(s.trim());
15         System.out.println(s.charAt(5));
16         System.out.println(s.toLowerCase());
17
18         StringTokenizer tok = new StringTokenizer(s," ");
19         while(tok.hasMoreTokens()) {
20             System.out.println(tok.nextToken());
21         }
22     }
23 }
24
25
26
```

2. Differentiate between throw and throws.
3. How many types of input stream in java? Explain.

Software Requirement, Term Test- 1

Total Marks: 20
Time: 45 Minutes

1. Suppose you are making a withdrawal or transferring money to other bank accounts from the ATM using a debit/credit card. Develop a complete UML diagram for the ATM Machine. (8)
2. What are stakeholders? Identify all the actors for the 'Result processing system of SUST'. (3)
3. How will you validate the client's every requirement? (4)
4. Among the eight core principles that guide processes which is the most important to you? Justify your answer. (5)

Software Requirement, Term Test- 2

Total Marks: 20

Time: 45 Minutes

1. What is an agile process? (2)
2. What key traits must exist among the people on an effective software team? (3)
3. An analysis rule of thumb is that the model "should focus on requirements that are visible within the problem or business domain." What types of requirements are not visible in these domains? Provide a few examples. (3)
4. You have been asked to build "A Web-based order-processing system for a departmental store". Develop an entity-relationship diagram that describes data objects, relationships, and attributes. (6)
5. Now develop the LEVEL 0, LEVEL 1 DFD model for the same system stated in Q4. (6)

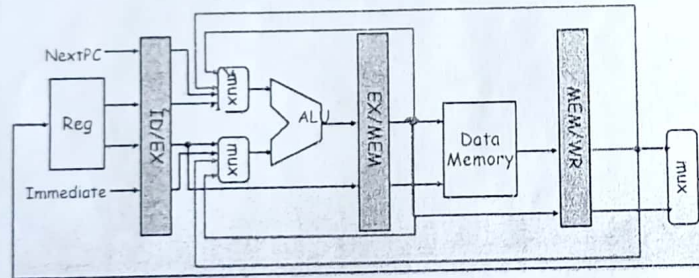
Term Test Examination #1

Course: CSE219W

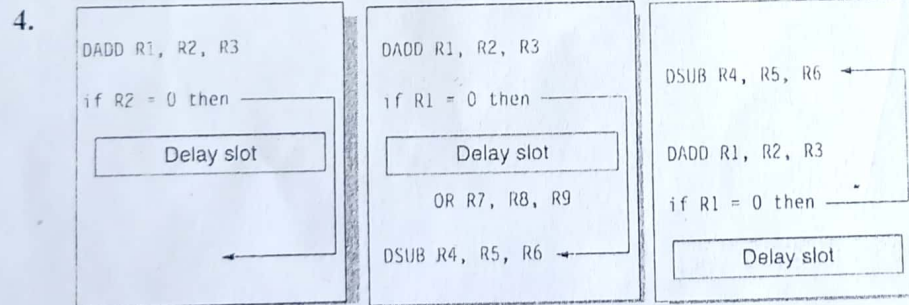
Time: 40 minutes

Total Marks: 25

1. State Amdahl's law and derive the equation for *speed up*. Suppose FP square root (FPSQR) is responsible for 25% of the execution time of a critical graphics benchmark. One proposal is to enhance the FPSQR hardware and speed up this operation by a factor of 10. The other alternative is just to try to make all FP instructions in the graphics processor run faster by a factor of 1.6; FP instructions are responsible for half of the execution time for the application. The design team believes that they can make all FP instructions run 1.6 times faster with the same effort as required for the fast square root. Compare these two design alternatives. 2+3
2. Define addressing mode. Name and give example of at least six addressing modes. 1+3
3. 7



Consider the figure. What type of hazards (briefly explain with example) can this pipeline circuit solve? Explain how those hazards are solved.



Consider the above figure. What does delay slot mean? In the above three cases how the delay slots can be filled up to minimize execution cycles? Justify your answer in each case.

5. Consider the MIPS program with variable a, b, c, d, e, f in memory. What does the program do? Assume that operand forwarding is action. Considering that the program starts at clock cycle 1, when each of the instructions will finish its work? Rearrange the instructions, so that total number of clock cycles is reduced. 1+2+2

LW R1, b
LW R2, c
ADD R0, R1, R2
SW a, R0
LW R4, e
LW R5, f
SUB R3, R4, R5
SW d, R3

Term Test Examination #2

Course: CSE219W Time: 15 minutes Total Marks: 10

1. There are six basic and 10 advanced cache optimization techniques. Write the names of all of them. 4
2. What are the three main benefits of virtual memory? 1.5
3. Consider a single-level page table for a 40 bit microprocessor. If page size is 8KB and each page table entry (PTE) is of 24 bits, what will be the size of a page table for each program? If 50 program run simultaneously in computer system, how much memory is needed in total? If you think this total amount of memory is big, can you suggest a solution to reduce required memory? 3+0.5+1

Shahjalal University of Science & Technology, Sylhet
Institute of Information & Communication Technology (IICT)
 2nd Year 1st Semester (Session: 2019-2020)
 Course Code: BUS 201W (SWE); Course Title: Cost & Management Accounting
 Term Test -1; Marks: 20; Time: 01 Hour
 [Answer all the two questions]

1. The following information has been taken from the accounting records of Klear – Seal Company for last year:

Selling expense,	US\$ 140,000
✓ Raw Materials Inventory, January 01	90,000
✓ Raw Materials Inventory, December 31	60,000
cf Utilities, factory	36,000
Direct labor cost	150,000
cf Depreciation, factory	162,000
cf Purchase of raw materials	750,000
Sales	2,500,000
Insurance, factory	40,000
cf Supplies, factory	15,000
Administrative expense	270,000
Indirect labor	300,000
cf Maintenance, factory	87,000
Work in process inventory, January 01	180,000
Work in process inventory, January 31	100,000
Finished goods inventory, January 01	260,000
Finished goods inventory, January 31	210,000

Required:

- Prepare a schedule of cost of goods manufactured.
- Compute the cost of goods sold.
- Using data as needed from (i) & (ii) above, prepare an income statement.

2. (a) What is cost behavior? Explain different types of cost with suitable example.
 (b)

Week	Served Customers	Total Cost of Service
1	140	114000
2	130	113500
3	180	117900
4	160	116000
5	170	117000
6	125	112500
7	195	119500

Requirements:

- Using the High – Low method estimate the variable and fixed element of service cost.
- Express the cost data in the form of $Y = a + bx$.
- If the firm provides 125 customers in the next week, what would be the expected total service cost?

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Institute of Information & Communication Technology (IICT)

2nd Year 1st Semester (Session: 2019-2020)

Course Code: BUS 201W (SWE); Course Title: Cost & Management Accounting

Term Test -2; Marks: 20; Time: 01 Hour

[Answer all the two questions]

Q.N. 01:

Peak sales for Midwest Products, a wholesale distributor of leaf rakes, occur in August. The company's sales budget for the third quarter showing these peak sales is given below:

	July	August	September	Total
Budgeted sales (all on account)	\$600,000	\$900,000	\$500,000	\$2,000,000

From past experience, the company has learned that 20% of a month's sales are collected in the month of sale, another 70% are collected in the month following sale, and the **remaining** 10% are collected in the second month following sale. Bad debts are negligible and can be ignored. May sales totaled \$430,000, and June sales totaled \$540,000.

Required:

1. Prepare a schedule of expected cash collections from sales, by month and in total, for the third quarter.
2. Assume that the company will prepare a budgeted balance sheet as of September 30. Compute the accounts receivable as of that date.

Q.N. 02:

The Production Department of the Riverside Plant of Jumen Corporation has submitted the following forecast of units to be produced at the plant for each quarter of the upcoming fiscal year. The plant produces high-end outdoor barbecue grills.

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Units to be produced	5,000	4,400	4,500	4,900

Each unit requires 0.40 direct labor-hours and direct labor-hour workers are paid \$11 per hour.

Required:

1. Construct the company's direct labor budget for the upcoming fiscal year, assuming that the direct labor workforce is adjusted each quarter to match the number of hours required to produce the forecasted number of units produced.
2. Construct the company's direct labor budget for the upcoming fiscal year, assuming that the direct labor workforce is *not* adjusted each quarter. Instead, assume that the company's direct labor workforce consists of permanent employees who are guaranteed to be paid for at least 1,800 hours of work each quarter. If the number of required direct labor-hours is less than this number, the workers are paid for 1,800 hours anyway. Any hours worked in excess of 1,800 hours in a quarter are paid at the rate of 1.5 times the normal hourly rate for direct labor.

TREM TEST 1
PRICIPLES OF ECONOMICS
TIME 50 minutes Marks: 30

Answer any one of the following

1. (a) Using the demand/supply model explain the effects of the following on the market for pizza: (3X6 = 18)

- i. the price of mozzarella cheese increases
- ii. Consumers' incomes increase
- iii. More pizza producers enter the market
- iv. A new report states that pizzas consumption contributes to heart disease
- v. New pizza ovens reduce the cooking time of pizza
- vi. McDonalds lowers the price of its burgers

(b) Severe floods in Sylhet caused vegetable prices to increase sharply in Bangladesh. Use the model of demand and supply to illustrate the vegetable market and explain why prices have increased. What would happen in substitute markets? 12

2. (a) On most days the price of a rose is \$1 and 8000 roses are purchased. On Valentine's Day, the price of a rose jumps to \$2 and 30 000 roses are purchased.

- i. Draw a demand and supply diagram that shows why the price jumps. 5
- ii. Based on this information, what do we know about the price elasticity of demand for roses? Calculate values for the price elasticity of demand and the price elasticity of supply or explain why you can't calculate these values. 2+8

(b) Rank the following four goods from lowest income elasticity of demand to highest income elasticity of demand. Briefly explain your ranking. 4X2 = 8

- i. Bread ii. Pepsi iii. Mercedes-Benz cars iv. Personal computers

(c) Sherry always buys 50 liters of petrol every week, regardless of the price. Andrew always buys exactly \$50 of petrol every week, regardless of the price. What is their elasticity of demand for petrol? 07

GOOD LUCK

AMJ