University of Asia Pacific

Department of Computer Science & Engineering

Mid-Semester Examination Spring-2016

Program: B. Sc Engineering (2nd Year/ 1st Semester)

Course Title: Principles of Accounting Course No: ACN 201 Credits: 2.00

Time: 1.00 Hour. Full Mark: 20

Read the questions carefully and answer all the questions.

(1) On April 01, 2013, Mr. Shofiq established Green View travel Agency. The following transactions were completed during the month-

1.	Mr. Shofiq invested $15,000 cash to start the agency
2.	Paid $600 cash for April office rent expense
3.	Purchased equipment for $3,000 cash
4.	Incurred $700 of advertising expense on account for advertising in *Dhaka Tribune*
5.	Purchased $800 worth office supplies on account
6.	Performed services worth $10,000: $3,000 cash is received from customers and the balance of $7,000 is billed to customers on account
7.	The owner withdraw $500 cash for personal use
8.	Paid employees' salaries $400 in cash

Instruction:

Prepare a tabular summary and show the effects of the above transactions on the expanded accounting equation. 8

(2) Selected events for Hexaware Limited during the month of September, 2015 are presented below-

Date	Event Description
September 1	The Owner invested $10,000 cash in the business.
September 5	Purchased equipment for $12,000 by paying $5,000 in cash and the balance on account.
September 25	Performed IT service and received $3,000 cash
September 26	Withdrew $500 cash for personal use.
September 27	Hired an employee whose monthly salary will be $450

Department of Computer Science & Engineering
University of Asia Pacific (UAP)

Mid Semester Examination | **Spring 2016** | **2nd Year 1st Semester**
Course Code: CSE205 | **Course Title: Data Structure** | **Credits: 3**
Full Marks: 60 | **Duration: 1 Hour**

Instructions:
1. There are **Four (4)** Questions. Answer any **Three (3)**. All questions are of equal value. Part marks are shown in the margins.
2. Non-programmable calculators are allowed.

1. a) Define 'data structure'. What are the main operations in data structure? 2+3
   b) Suppose an array, myArray has N number of integer data. Write an algorithm /code that will insert a data item, X at beginning of the array. 5
   c) Suppose you have a large **sorted** data set in an array. Write an algorithm to find a location of a particular data items from it. 5
   d) What are the issues you should consider to use a particular data structure for your data? 5

2. a) What is linked list? What are the advantages and disadvantages of using linked list instead of an array? 2+3
   b) Write an algorithm/code-segment that will print all the data items of a given one-way ordinary linked list. It will also show the total number of data items. 5
   c) Draw the schematic diagram of One-way linked list and Two-way linked list. 5
   d) Explain the implementations of stack using array as well as using linked list. 5

3. a) Write the algorithm or pseudocode of POP and PUSH operations of a stack. 5
   b) State five important applications of stack. 5
   c) Convert the following infix expression into post-fix notation using the algorithm that uses stack (using Reverse-Polish notation) (show each and every steps): (A + B^D)/(E - F) + G 10

4. a) What are the differences between Queue and Stack?
   b) How would you determine whether a queue is under-flown or overflown?
   c) Explain the running time or complexity. Explain the relations of memory usage and running time for a data structure / algorithm.
   d) Give an example where you can use both stack and queue together.

University of Asia Pacific

Department of Computer Science and Engineering

Mid Semester Examination Spring 2016

Program: B.Sc. Engineering (2nd Year/1st Semester)

Course Title: Electronic devices and circuits Course No. ECE 201 Credits: 3.00
Time: 1.00 Hour Full Marks: 60

[There are four questions. Answer any Three. All questions are of equal value. Figures in the right margin indicates marks.]

1. (a) What is doping and why is it necessary? Define extrinsic and intrinsic semiconductor materials. [4]

   (b) Write down the difference between majority and minority carriers. Draw any of the diode equivalent circuit models and also draw its corresponding characteristics graph. [8]

   (c) Explain with appropriate diagram what happens to the depletion layer for the following condition: [8]

   i) $V_D = 0$

   ii) $V_D < 0$

   iii) $V_D > 0$

   where 'V_D' is the voltage across the diode.

2. (a) Determine V_0, I_1, I_{D1}, and I_{D2} for the parallel diode configuration of Fig. 1. [10]

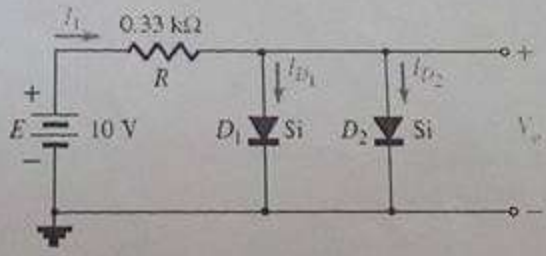
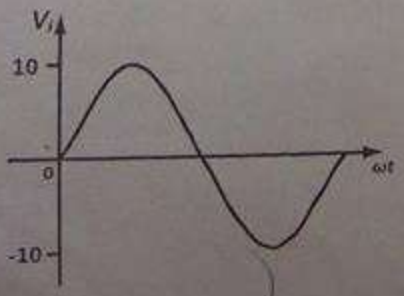


Fig. 1

   (b) Draw and explain in brief about the operation of a half and full wave rectifier. [10]

3. (a) For input V_i, draw the output wave shapes of V_0 for Fig. 2 [10]



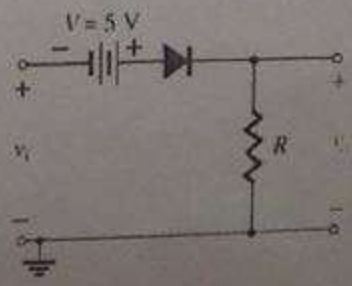


Fig. 2

b. Find out the error of the following code segment. If there is any please correct them.

Code Segment:

```
package classtest1;
public class Classtest1 {
  public final int p =20;
  public static int m=10;
 public static void main(String[] args) {
    byte b=0;          // line 1
    b=(byte)b+2;   // line 2
    b=b*(byte)2;    //  line 3
    b=(byte)(2-2); //  line 4
    int q=30;              // line 5
    p=q;              // line 6
    m=n;              // line 7
      }
}
```

c. Find out the error of the following code segment. If there is any please correct them. 6

Code Segment:

```
class A{
  int j;
  A()
  {
    j=i+j;
  }
  class B{
    int i;
    B()
    {
      i=i+j;
    }
  }
}
```

4. Write down short notes on following tropics: 20

I. Finalize method
II. Garbage Collector
III. Bytecode
IV. Narrow Conversion
V. Use of Super

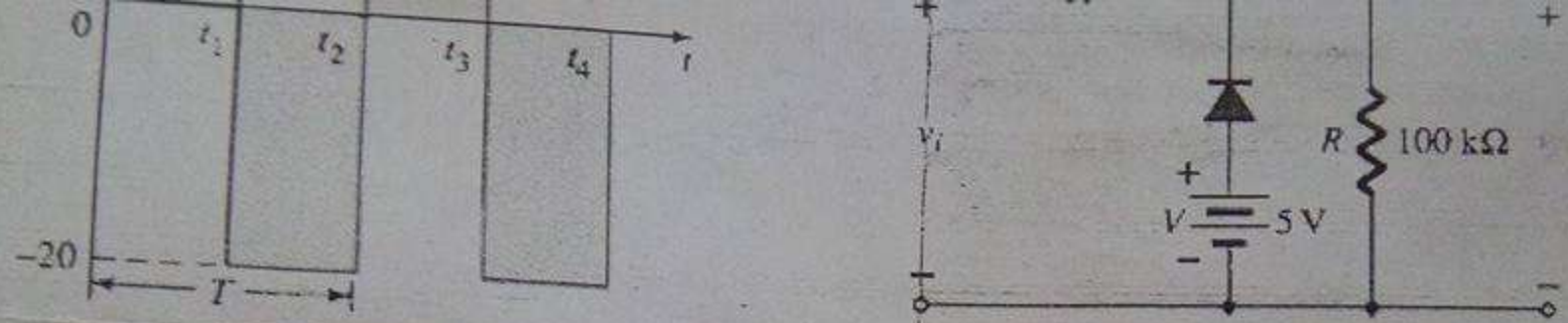
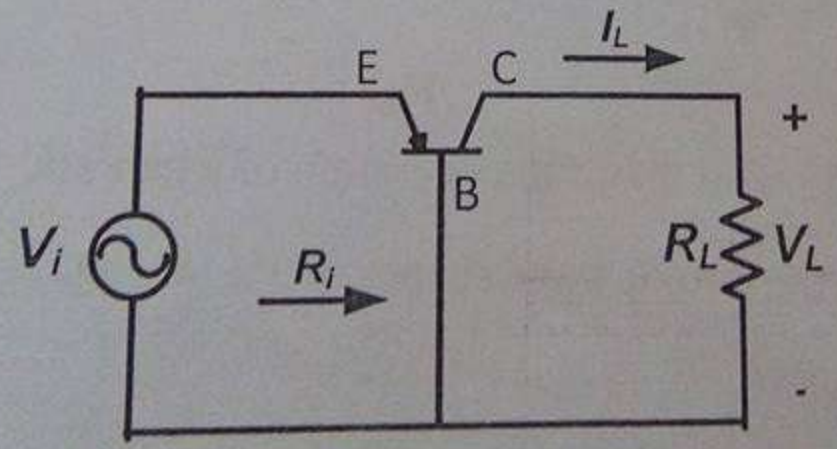


Fig. 4

(b) With appropriate diagram draw the input output characteristics of common emitter transistor configuration. [04]

(c) Given, $\alpha = 1$, amplification factor $A = 400$, input resistance $R_i = 50\ \Omega$ and input voltage $V_i = 100\text{mV}$. Find R_L and I_L. [06]



University of Asia Pacific

Department of Basic Sciences & Humanities

Mid-Semester Examination, Spring-2016

Program: B.Sc. Engineering (Computer Science and Engineering)

2nd Year /1st Semester

Course Title: Linear Algebra & Differential equations Course No: MTH 201 Credit:3.00

Time: 1.00 Hour. Full Marks: 60

There are **Four** Questions. Answer any **Three**. All questions are of equal value /Figures in the right margin indicate marks.

1 a) Solve: $x + 2y - 3z = 6$, $2x - y + 4z = 2$, $4x + 3y - 2z = 14$ 10

b) Determine whether or not the vector $v = (2,-5,3)$ is a linear combination of the vectors $u_1 = (1,-3,2)$, $u_2 = (2,-4,-1)$ $u_3 = (1,-5,7)$ 10

2 a) Test dependency for the following polynomials: 10

$t^3 + 2t^2 + 4t - 1$, $t^2 - 3t - 2$, $t^3 - 4$

b) Solve: $x + y\frac{dy}{dx} = 2y$ 10

3 a) Define differential equation. Find the differential equation from the relation $x^2 + y^2 + 2gx + 2fy + c = 0$ 10

b) Solve: $(x^2 + y^2)\,dx - 2xy\,dy = 0$. 10

4 a) Find the particular solution of $\cos y\,dx + (1 + 2e^{-x})\sin y\,dy = 0$ 10

when $x = 0$, $y = \frac{\pi}{4}$.

b) Solve: $\frac{dy}{dx} = \frac{6x - 2y - 7}{3x - y + 4}$ 10

Instructions:

(a) Journalize the transactions of Hexaware limited for the month of September.

(b) Post the transactions in appropriate account using the standard account format. 10

(3) a. What are the three basic activities of accounting? Give two examples of external users of accounting data. 1

b. Define (Any one): Monetary Unit Assumption

Revenue recognition Principle 1

(b) i) For the Zener diode network of Fig.3, determine V_L, V_R, I_Z, and P_Z. [10]
ii) Repeat part (a) with $RL = 3$ k.

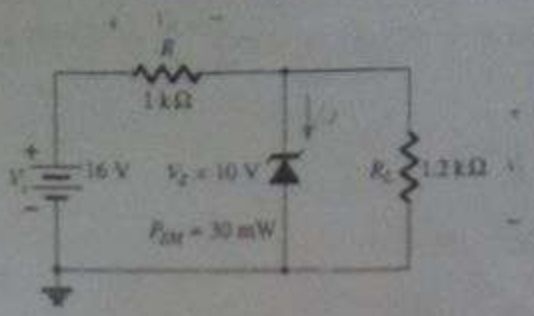
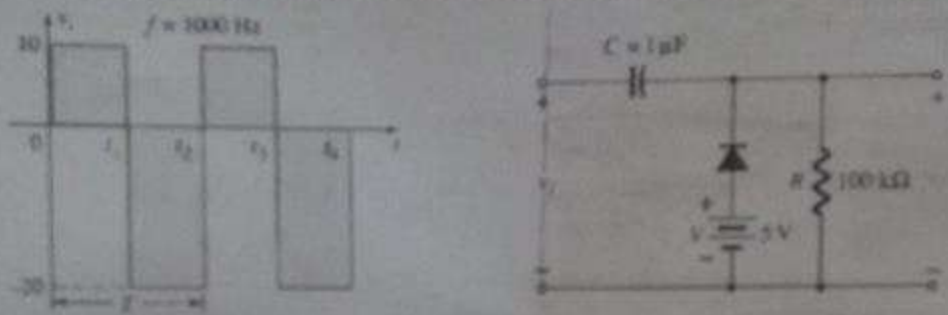


Fig. 3

4 (a) Determine v_o for the network of Fig. 4 for the input indicated. [10]



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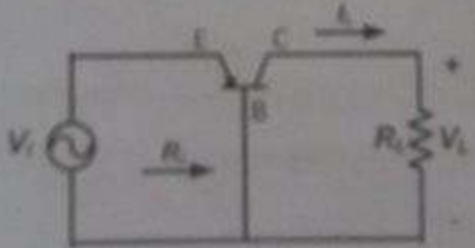

Fig. 5

University of Asia Pacific

Department of Computer Science & Engineering

Mid-Semester Examination Spring-2016

Program: B. Sc Engineering (2nd Year/ 1st Semester)

Course Title: Computer Programming II Course No. CSE 203 Credit: 3.00

Time: 1.00 Hours. Full Mark: 60

There are **Four** Questions. Answer any **Three**. All questions are of equal value/Figures in the right margin indicate marks.

1. Answer to the given question by considering the following table: 20

Grand Parent	Parent	Child
A	B	D
A	C	E

i. Convert this table to an inherited formatted tree.
ii. Write down a java code which will count the number of child of each class. For instance, A has 2 child B and C. B has 1 child that's D and so on.
iii. What are the basic differences between Interface and Inheritance?

2. a. "Java is a platform independent language"- explain with proper justification. 5

b. What are the differences between method overloading and method overriding? Can abstract class be final in Java? 5

c. I. Show the execution steps of the following statement using operator precedence. Let, A=2, B=4, C=8, D=3, E =5 10

P = A+B/C^D|E*A-B

3. a. Write down the output of the following code segment: 4

Code Segment:

```
package test;
public class Test {
 public static void main(String[] args) {
  byte b;
  int i=520,j=506;
  b=(byte)i;
  System.out.println(b);
  b=(byte)j;
  System.out.println(b);
  }
}
```

University of Asia Pacific

Sec: A,B&C

Department of Computer Science and Engineering
Mid-Term Examination, Spring- 2016
Program: CSE
Course Title: Principles of Economics, Course Code: HCN 201, Credit: 2
Time: 1 hour, Full Marks: 20

Answer any 02(Two) Questions. All Questions carry equal marks.

1 a) Differentiate Microeconomics and Macroeconomics. 3

b) Calculate price elasticity of Demand(Ed) from the following cases: 3

Case A: Price Tk. 110, Quantity: 160

Case B : Price Tk. 90, Quantity : 240

c) Government's income is more than it's expenditure. Is it deficit budget or surplus budget ? 2

d) Graphically represent equilibrium of demand and supply. 2

2. a) "Money is acceptable to people as payment." Explain. 3

b) Delineate the Quantity Theory of Money. 7

3. a) What is CPI ? 2

b) Distinguish GDP and GNP. 4

c) Calculate the rate of Inflation for the Year 2009 and 2010 from the following information: 4

Year	2008	2009	2010
CPI	70.2	72.3	75.0

Best of Luck