INSTITUTE OF INFORMATION TECHNOLOGY

JAHANGIRNAGAR UNIVERSITY

1ST YEAR 2ND SEMESTER FINAL EXAMINATION-2015

COURSE CODE: IT- 1201 COURSE TITLE: DATA STRUCTURES

TOTAL MARKS: 60 TIMES: 3 HOURS

ANSWER ANY FIVE (5) QUESTIONS

1. a) What are the major data structures used in the following areas: RDBMS, Network data model and Hierarchical data model? 3

   b) The computer does not need to keep track of the address of every element of LA, but needs to keep track only of the first element of LA, denoted by Base (LA) called the base address of LA. Write the formula which calculates the address of any element of LA Using this base address Base (LA). 3

   c) Explain the complexity of linear search and Binary search in case of Average case and Worst case. 6

2. a) "*Memory space can be reused if a node is deleted from a list*". Mention the technique and Explain. 3

   b) Write a procedure which finds the location LOC of the last node in a sorted list such that INFO[LOC] < ITEM or sets LOC= NULL 4

   c) How do we know when we have finished traversing the Circular linked lists? 2

   d) "*Given a node, it is easy to visit its predecessor. Convenient to traverse lists backwards*". Explain these statements. 3

3. a) Mention the data structures that are used to perform recursion? 1

   b) Which are used to evaluate postfix expressions? Write an algorithm which finds the VALUE of an arithmetic expression P written in postfix notation. 4

   c) Convert the expression ((A + B) * C - (D - E) ^ (F + G)) to equivalent Prefix and Postfix notations. 3

   d) How do we partition the array efficiently? Answer this by implementing the Quicksort Algorithm for the following number of elements. 4

[0] [1] [2] [3] [4] [5] [6] [7] [8]

4. a) Translate the following Infix notation into its equivalent Polish and reverse Polish notations by inspection and hand. 2

   (A * B ↑ D) / (E - F) +G-2

   b) Consider the following Infix expression Q. 4

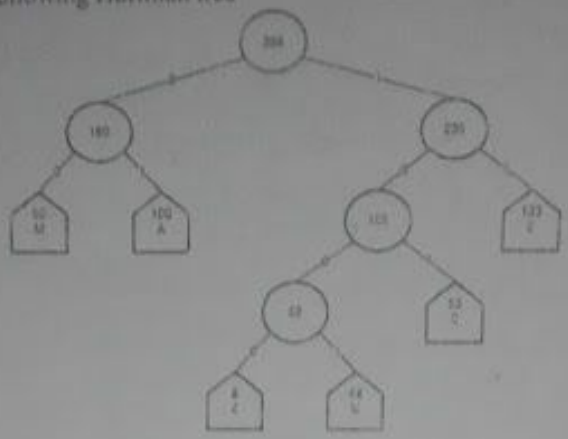
   Q: (A - (B * D)) ↑ (E+ F)

   Translate Q into its equivalent postfix expression P by simulating the corresponding algorithm.

   c) Consider the following priority QUEUE which is maintained by two-dimensional array QUEUE. Describe the structure after (RRR, 3), (SSS, 4), (TTT, 1), (UUU, 4) and (VVV, 2) are added to the QUEUE. 8

   d) "*Insertions and deletions can occur at either end but not in the middle*" Explain this statement. 2

5. a) What is Huffman coding and why it is needed? Determine the Huffman code for each of the characters from the following Huffman tree



b) Find the sorted list from Fig. A in descending order following Heap sort. 4

c) Suppose the frequency of occurrence of some characters for an English text is shown in the table below. Construct a Huffman Coding tree. And then determine Huffman code for each of the character. 5

Letter	Frequency
A	90
C	53
E	33
M	60
U	44
Z	8

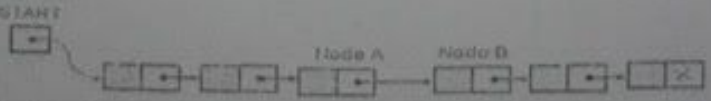
6. a) Inorder traversal and preorder traversal of a binary search tree produce two list **10 12 16 18 19 20 21 23 35 44 52** and **23 18 12 10 16 20 19 21 44 35 52** respectively. Now draw the binary search tree with these sequenced lists. 4

b) Insert 33 to the binary search tree that is obtained from the above question (a) and describe the changes after the insertion operation. 4

c) Consider the minheap H in the figure . Describe the heap after Item=11 is inserted into H. 4

7. a) Consider the alphabetical list of patients admitted into the Square Hospital whose names are stored in the linear arrays BED and LINK shown below where the variable START and AVAIL have their usual meanings. Update the changes in the data structure if *Shilpi* is added to and *Popy* is deleted from the list. 3

b) Consider the schematic diagram of a linked list shown below (figure-8). Suppose, node N is to be inserted into the list between nodes A and B. Which pointer fields should be changed? Draw the diagram after insertion. 3



c) Consider the above Graph G. Suppose the nodes are stored in memory in an array DATA as follows: 6

DATA: X, Y, Z, W

i. Find the adjacency matrix A of the Graph G

ii. Find the path matrix P of G using powers of the adjacency matrix A

Institute of Information Technology

Jahangirnagar University

1st Year 2nd Semester B.Sc. (Hons.) Final Examination 2015

Course Title: Object Oriented Programming | Course Code: IT-1203

Total Marks: 60 | Time: 3 hours

Answer any 05 (five) questions

(Sequence must be maintained in answering each of the questions)

1. a) Write the differences between the object oriented and procedural programming languages. 3
   b) Is it make any difference if we don't write the line "using namespace std" in our code? Explain your opinion. 3
   c) What is run-time error? Give examples of two different types of run-time errors. 4
   d) What is the purpose of default constructor? 2

2. a) In Java, methods can be inherited. What does that mean? 2
   b) Write a class, call it GradesCount, to read a list of grades from the keyboard (integer numbers in the range 0 to 100). Prompt the user with "Please enter a grade between 0 to 100 or -1 to quit: " each time before reading the next integer. Store each grade in a A, B, C, D or F Vector as follows: 90 to 100 = A, 80 to 89 = B, 70 to 79 = C, 60 to 69 = D, and 0 to 59 = F. 4
   c) What is the difference between function "overriding" and "overloading". Explain clearly with simple code examples. 3
   d) What will be the output of the program given below? 3

```
public class If1
{
   static boolean b;
   public static void main(String [] args)
   {
      short hand = 42;
      if ( hand < 50 && !b )
         hand++;
      if ( hand > 50 );
      else if ( hand > 40 )
      {
         hand += 7;
         hand++;
      }
      else
         --hand;
      System.out.println(hand);
   }
}
```

3. a) What is an access specifier? 2
   b) For a class called Fraction that has two data members, an ***int numer*** and an ***int denom*** (for the numerator and denominator), write the following Java code: Write a constructor that accepts values for the numerator and denominator as arguments. 4
   c) What is the output when you try to compile and run the following code? 3

```
public class Switch {
    public static void main(String[] args) {
        int  i = 1;
        switch( i ) {
            case 0:
                int j = 0;
                System.out.print( j );
            case 1:
                int j = 1;
                System.out.print( j );
            case 2:
                int j = 2;
                System.out.print( j );
            default:
                int j = -1;
                System.out.print( j );
        }
    }
}
```

d) What type of relationship exists between someMeth in classes A and someMeth in class B? 3

```
class A
{
    private void someMeth()
    {
        System.out.println( "from class A" );
    }
}

class B extends A
{
    public void someMeth( String x )
    {
        System.out.println( "from class B: " + x );
    }
}
```

4. a) What is the output of this program? 3

```
class A {
        int i;
        int j;
    A() {
      i = 1;
      j = 2;
    }
}
class Output {
    public static void main(String args[])
    {
        A obj1 = new A();
        A obj2 = new A();
            System.out.print(obj1.equals(obj2));
    }
}
```

b) Write a simple sorting function "public static void mySort( )". In that, create an array of 10 integers. Set them to any meaningful values and print them. Sort the values in the array in a non-decreasing order. Print the sorted values of the array 4

c) What's wrong with the following program? 3

```
public class SomethingIsWrong {

public static void main(String[] args) {

Rectangle myRect;

myRect.width = 40;

myRect.height = 50;
```

```
        System.out.println("myRect's area is " + myRect.area());
    }
}
```

d) Fix the program called *SomethingIsWrong* shown in Question 4(c). 2

5. a) What is inheritance and polymorphism in C++? Explain. 4
   b) What is the difference between protected and private members? 3
   c) How does an enum statement differ from a typedef statement? 2
   d) How does polymorphism promote extensibility? 3

6. a) Write a method that returns a String that contains the letters of the input String parameter in sorted order. 3
   b) Which code is suitable to start a thread ? 3

```
class X implements Runnable
{
  public static void main(String args[])
  {
    /* Missing code? */
  }
  public void run() {}
}
```

c) What will be the output of the program? 3

```
class MyThread extends Thread
{
  public static void main(String [] args)
  {
    MyThread t = new MyThread();
    t.start();
    System.out.print("one. ");
    t.start();
    System.out.print("two. ");
  }
  public void run()
  {
    System.out.print("Thread ");
  }
}
```

d) What is similarity between NullPointerException and ArrayIndexOutOfBoundException in Java? 3

7 a) What will be the output of the program? 3

```
class s implements Runnable
{
  int x, y;
  public void run()
  {
    for(int i = 0; i < 1000; i++)
      synchronized(this)
      {
        x = 12;
        y = 12;
      }
    System.out.print(x + " " + y + " ");
  }
  public static void main(String args[])
  {
    s run = new s();
```

```
        Thread t1 = new Thread(run);
        Thread t2 = new Thread(run);
        t1.start();
        t2.start();
    }
}
```

b) Write down the difference between *start()* and *run()* method of Thread class?

c) What will be the output of the program?

```
class s1 implements Runnable
{
   int x = 0, y = 0;
   int addX() {x++; return x;}
   int addY() {y++; return y;}
   public void run() {
   for(int i = 0; i < 10; i++)
      System.out.println(addX() + " " + addY());
}
   public static void main(String args[])
   {
      s1 run1 = new s1();
      s1 run2 = new s1();
      Thread t1 = new Thread(run1);
      Thread t2 = new Thread(run2);
      t1.start();
      t2.start();
   }
}
```

d) What is use of throws keyword?

e) Why multiple inheritance is not supported in java?

Institute of Information Technology
Jahangirnagar University
1st Year 2nd Semester B.Sc. (Hons.) Final Examination 2015

Course Title: Discrete Mathematics **Course Code:** IT-1205
Total Marks: 60 **Time:** 3 hours

Answer any 05 (five) questions maintaining sequence

1 (a) Translate each of these statements into logical expressions using predicates, quantifiers and logical connectives: 6
   i) No one is perfect
   ii) At least one of your friend is perfect
   iii) The negation of contradiction is tautology.

(b) Let X= {1, 2, 3, 4}. Sketch and determine whether or not each relation below is a function from X into X. 4
   (a) $f = \{(2, 3), (1, 4), (2, 1), (3, 2), (4, 4)\}$
   (b) $g = (3, 1), (4, 2), (1, 1)\}$
   (c) $h = \{(2, 1), (3, 4), (1, 4), (2, 1), (4, 4)\}$
   Also proof that:
   i. $A \cup A = A$ ii. $A \cap A = A$

(c) Define domain, co-domain and range of a function. 2
Let A ={-2, 0, 1, 2, 3} and B ={0, 1, 2, 4, 6, 9}; and $f: A \to B$. If $f(x) = x^2$; findout the domain and range of the function.

2 (a) Define finite set. Prove that if A, B, C are finite sets, then 3
$n(A \cup B \cup C) = n(A) + n(B) + n(C) - n(A \cap B) - n(A \cap C) - n(B \cap C) + n(A \cap B \cap C)$

(b) At Sunnydale High School there are 4
- 55 students in either algebra, biology, or chemistry class
- 28 students in algebra class
- 30 students in biology class
- 24 students in chemistry class
- 8 students in both algebra and biology
- 16 students in both biology and chemistry
- 5 students in both algebra and chemistry.

How many students are in all three classes?

(c) Find the truth set of each propositional function: $p(x)$ defined on the set N of positive integers. (a) $x+2>7$ (b) $x+5<3$ (c) $x+5>1$ 3

(d) Verify the proposition: $p \vee \neg(p \wedge q)$ is tautology and $\neg(p \wedge q)$ and $(\neg p \vee \neg q)$ are logically equivalent. 2

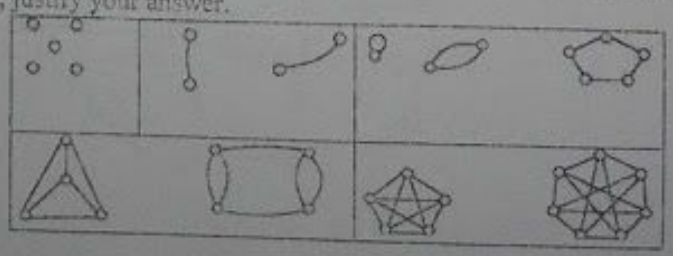
3 (a) Let A be the set of students in a dept. Determine which of the following assignments defines a function on A. 2
   (a) To each student assign his age. (b) To each student assign his teacher.
   (c) To each student assign his marks. (d) To each student assign his parents.

(b) Define predicate logic and quantifiers, prove the argument (a) 1 = - 1 and (b) 2 = 1 3

(c) Let M (x,y) be "x has sent y and e-mail message" and T (x,y) be "x has telephoned y", where the domain consists of all students in your class. Use quantifiers to express each of these statements: 4
   i) Every student of your class has sent an e-mail message to Ken"
   ii) "No one in your class has telephoned Nina"

(d) Determine the truth value of each of the following statements where U = {1, 2, 3}is the universal set: 3
(i) $(\exists x \forall y, x^2 < y + 1)$ (ii) $(\forall x \exists y, x^2 + y^2 < 12)$ (iii) $(\forall x \forall y, x^2 + y^2 < 12)$

4 (a) Define regular graph and complete graph. Show whether the following graphs are regular or not, justify your answer. 3



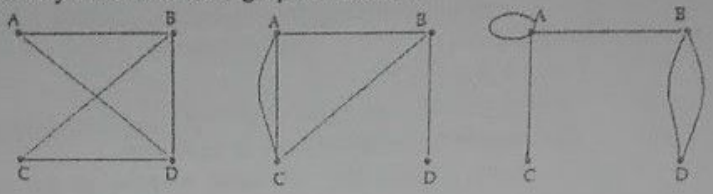
(b) What is Bipartite graph? Give an example of complete bipartite graph. 3

(c) With vertex n = 10, calculate the maximum number of edges in a bipartite graph. 3

(d) What is complement of a graph? Let 'G' be a simple graph with 10 vertices and 12 edges, find the number of edges in '$\bar{G}$'. 3

5 (a) How many standard ways are to represent Graphs in Computer Memory? Cite an example of adjacency matrix with its memory representation. 4

(b) Find the adjacency matrix of each graph as bellow: 3



(c) Draw the multi-graph G corresponding to each of the following adjacency matrices. 5

$$A=\begin{vmatrix} 0 & 2 & 0 & 1 \\ 2 & 1 & 1 & 1 \\ 0 & 1 & 0 & 1 \\ 1 & 1 & 1 & 0 \end{vmatrix} \quad \text{(a)} \qquad A=\begin{vmatrix} 1 & 1 & 1 & 2 \\ 1 & 0 & 0 & 0 \\ 1 & 0 & 0 & 2 \\ 2 & 0 & 2 & 2 \end{vmatrix} \quad \text{(b)}$$

6 (a) Define in how many ways a binary tree can travel? Draw the rooted tree for the algebraic expression of the following: 6

i. $(2-(3\times x))+((x-3)-(2+x))$

ii. $ab-(c/(d+e))$.

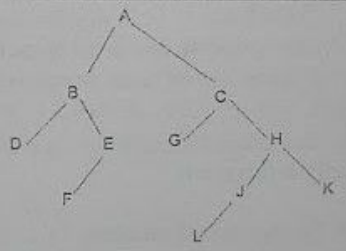
iii. $3(x-y)+\frac{(x+y)^2}{4}$

Also find the infix, prefix, postfix form of the above expressions.

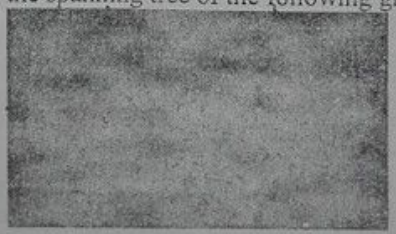
(b) Formulate the relevant information by using the following Binary trees with data as below: 6

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
INFO	K	C	G		A	H	L			B		F	E			J	D	
LEFT	0	3	0		10	16	0			17		0	12			7	0	
RIGHT	0	6	0		2	1	0			13		0	0			0	0	

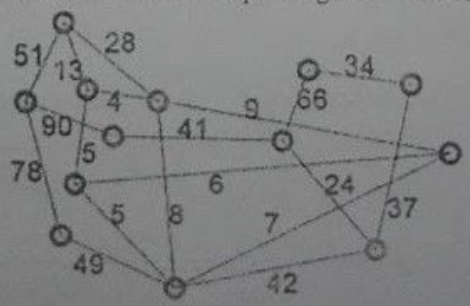
ROOT [5]



7 (a) Using BFS algorithm find the spanning tree of the following graph. 6



(b) Using Prim's algorithm, find the minimum spanning tree of the following graph: 6



Jahangirnagar University
Institute of Information Technology (IIT)
1st Year 2nd Semester B.Sc (Hons.) Final Examination 2015
Subject: Information Technology
Course: IT-1207 (Economics)

Time: 3 Hours | Full Marks: 60

Answer any FIVE of the following questions.

1. a) Define economics. Differentiate between micro and macro economics. (5)
   b) What are the basic problems of micro economics? (4)
   c) What are the factors of production and what are results of those? (3)

2. a) A merchandiser produces two commodities: Sweater and Knitwear. The resources the company uses include worker and staff, raw fabrics, factory floor, office rooms and so on.
   The following schedule some points on the companies PPF:

Possibilities	A	B	C	D	E	F
Sweater	110	100	85	65	38	0
Knitwear	0	20	40	60	80	100

   i) Graph the company's PPF and indicate efficient, inefficient and impossible points. (5)
   ii) What will happen to the PPF if all the company's resources are cut in half? Graph the new PPF. (3)
   iii) Calculate the opportunity cost of producing additional unit of knitwear if the company moves from point C to D. (2)

   b) What are the properties of Indifference curves? (2)

3. a) Define price elasticity of demand. Briefly examine its determinants. (3)
   b) Explain graphically the various price elasticity of demand. (4)
   c) On Tuesday, price and quantity demanded are TK. 7 and 120 units, respectively. Ten days later, price and quantity demanded are TK. 5 and 150 units, respectively. Calculate the price elasticity of demand and interpret the result. (5)

4. a) What are the determinants of demand? (2)
   b) What do you mean by the demand schedule? Draw the demand curve from the following demand schedule. Why do people buy more of a commodity when price of the commodity falls? (6)

Price per unit of commodity X (in TK)	Quantity of X demanded (in Kg)
0	12
0.50	10
1.00	8
1.50	6
2.00	4
2.50	2
3.00	0

   c) Distinguish between the change in the quantity demanded and change in demand for a commodity. (4)

5. a) What are the goals of macro economics and what are the available instruments to achieve those goals? Explain with a table. (3)

b) Explain the circular flow of household and firm. (4)

c) Below are some data on two goods produced in the economy: (5)

Year	Price of rice (/kg) in Tk.	Quantity of rice (kg)	Price of cloth (/yard) in Tk.	Quantity of cloth (yard)
2008	5	100	10	150
2009	15	200	25	100
2010	20	300	30	150

Compute nominal GDP, real GDP, and the GDP deflator and economic growth rate for each year, using 2008 as the base year.

6. a) What does macroeconomics deal with? Write down the major goals of macroeconomics and name the policies to achieve this. (4)

b) Define CPI. Use the following table and calculate: (8)

Goods	2011 (Base Year)		2012		2013		2014		2015	
	P	Q	P	Q	P	Q	P	Q	P	Q
A	17	10	20	12	22	14	24	16	34	20
B	13	15	17	20	20	24	22	28	30	35
C	10	20	15	25	16	30	20	32	26	40

i) GDP Deflator of 2013 and 2015.

ii) Rate of Inflation of year 2015

iii) Real and Nominal GDP of 2014 and 2015

iv) Economic growth rate of 2015.

7. a) Distinguish between GDP and GNP. Name the factors which are not considered in calculating GDP. (4)

b) Describe the expenditure and income approach that we use to measure GDP. (5)

c) What are the properties of a perfectly competitive markets? (3)

Jahangirnagar University

Institute of Information Technology (IIT)

B.SC (HONORS) in INFORMATION TECHNOLOGY

1st Year 2nd Semester Final Examination 2015

Course: Accounting [IT 1209]

Time: 3 Hours **Marks: 60**

Answer any FIVE (05) of the following questions.

Question 1: **Marks: 3+3+6=12**

a) What is Accounting? "Bookkeeping and accounting are the same." Do you agree? Explain.

b) What is basic accounting equation? Define the elements of accounting equation with examples.

c)

	Square Company (Tk.)	Beximco Company (Tk.)
January 1, 2014		
Assets	95,000	110,000
Liabilities	50,000	(iv)
Owner's equity	(i)	60,000
December 31, 2014		
Assets	(ii)	145,000
Liabilities	55,000	72,000
Owner's equity	73,000	(v)
Owner's equity changes in year:		
Additional investment	(iii)	20,000
Drawings	25,000	(vi)
Total revenues	375,000	425,000
Total expenses	340,000	383,000

Determine the missing value(s).

Question 2: **Marks: 4+3+5=12**

a) Who are the users of accounting data? How does accounting provide relevant data to these users?

b) Identify and describe the steps in the accounting process.

c) What is a trial balance and what are its purposes? Discuss limitations of trial balance.

Question 3: **Marks: 2+10=12**

a) What is a chart of accounts and why is it important?

b) Nahid has his own consulting firm, Nahid Consulting. The following transactions occurred during the month of May:

May 1 Nahid invested Tk. 18000 cash in the business.
3 Purchased Tk. 500 of supplies on account.
5 Paid Tk. 50 for advertisement in the Daily Star.
9 Received Tk. 3000 for the services provided.
12 Withdrew Tk. 700 cash for personal use.
15 Performed Tk. 5300 of services on account.
17 Paid Tk. 3000 for employee salaries.
20 Paid for the supplies purchased on account on May 3.
23 Received a cash payment of Tk. 3000 for services provided on account on May 15.
26 Borrowed Tk. 5000 from the bank on a note payable.
29 Purchased office equipment for Tk. 2800 on account.

Instructions:

Show the effects of the above transactions on the expanded accounting equation in tabular form.

Question 4: **Marks: 3+9=12**

a) What are the basic steps in recording process? Explain those steps.

b) Mr. Faruk Ahmed is a licensed CPA. During the first month of operations of his business, the following events and transactions occurred.

July 1 Faruk invested Tk 30,000 cash.
1 Hired a secretary-receptionist at a salary of Tk 5,000 per month.
3 Purchased Tk 3,000 of supplies on account from Ranjan Supply Company.
7 Paid office rent of Tk 8,000 cash for the month.
11 Completed a tax assignment and billed client Tk 5,000 for services provided.
12 Received Tk 4,500 advance on a management consulting engagement.
17 Received cash of Tk 1,500 for services completed.
20 Withdrew Tk. 1200 cash for personal use.
23 Borrowed Tk. 5000 from the bank on a note payable.
31 Paid secretary-receptionist Tk 5,000 salary for the month.
31 Paid 40% of balance due Ranjan Supply Company.

Instruction: Journalize the above transactions.

Question 5: **Marks: 5+5+2=12**

Mr X opened the Campus Laundromat on September 1, 2012. During the first month of operations, the following transactions occurred:

Sept. 1: Invested Tk 25,000 cash in the business.
7: Purchased washers and dryers for Tk. 25,000 paying Tk. 10,000 in cash and signing a Tk. 15,000, 1 year 12% note payable.
10: Paid Tk. 1,200 for a one year accident insurance policy.
15: Received a bill from the Daily News for advertising the opening of the Laundromat Tk. 800.
20: Withdraw Tk. 1700 cash for personal use.
30: Determined that cash receipts for laundry services for the month were Tk. 6,200.

Instructions:

(a) Journalize the September transactions.
(b) Open ledger accounts and post the September transactions.
(c) Prepare a trial balance at September 30, 2012.

Question 6: **Marks: 3+3+6=12**

a) Define Matching principle and Revenue Recognition principle with examples.

b) Explain the differences between depreciation expense and accumulated depreciation.

b) Thomas Magnum Resort opened for business on April 1, 2013. Its trial balance before adjustment on April 30 is as follows:

THOMAS MAGNUM RESORT
Trial Balance
April 30, 2010

Account Titles	Debit	Credit
Cash	$3,500	
Supplies	2,200	
Prepaid Insurance	2,280	
Land	12,000	
Lodge	60,000	
Furniture	15,000	
Accounts Payable		$4,800
Unearned Rent Revenue		3,300
Mortgage Payable		35,000
Thomas Magnum, Capital		46,380
Rent Revenue		10,300
Advertising Expense	600	
Salaries Expense	3,300	
Utilities Expense	900	
Total	*$99,780*	*$99,780*

Othe: data:

i. Prepaid insurance is a 1-year policy starting April 1, 2013.
ii. A count of supplies shows $750 of unused supplies on April 30.
iii. Annual depreciation is $3,000 on the lodge and $2,700 on furniture.
iv. The mortgage interest rate is 12% (the mortgage is taken out on April 1).
v. Two-thirds of the unearned rent revenue has been earned.
vi. Salaries of $750 are accrued and unpaid at April 30.

Instruction: Journalize the adjusting entries on April 30.

Question 7: **Marks: 2+10=12**

a) "A worksheet is a permanent accounting record and its use is required in the accounting cycle." Do you agree? Explain.

b)

POLANDO COMPANY
Worksheet
For the Month Ended January 31, 2015

Trial Balance

Account Titles	Dr.	Cr.
Cash	4,500	
Account Receivable	3,200	
Supplies	2,000	
Equipment	11,000	
Accumulated Depreciation		1,250
Notes Payable		2,500
Unearned Revenue		550
Polando, Capital		12,900
Polando, Drawing	1,100	
Service Revenue		6,300
Salaries Expense	1,300	
Miscellaneous Expense	400	
Total	23,500	23,500

Other data:

(i) Supplies have been used total $1,350.
(ii) Interest accrued on 3-month note payable, issued January 1, $250.
(iii) Unearned revenue amounted to $230 at January 31.
(iv) Salaries incurred but accrued are $400.
(v) Services provided but unbilled at January 31 total $350.

Instructions: Enter the trial balance on a worksheet and complete the worksheet.

Question 4: **Marks: 3+9=12**

a) What are the basic steps in recording process? Explain those steps.

b) Mr. Faruk Ahmed is a licensed CPA. During the first month of operations of his business, the following events and transactions occurred.

July 1 Faruk invested Tk 30,000 cash.
1 Hired a secretary-receptionist at a salary of Tk 5,000 per month.
3 Purchased Tk 3,000 of supplies on account from Ranjan Supply Company.
7 Paid office rent of Tk 8,000 cash for the month.
11 Completed a tax assignment and billed client Tk 5,000 for services provided.
12 Received Tk 4,500 advance on a management consulting engagement.
17 Received cash of Tk 1,500 for services completed.
20 Withdrew Tk. 1200 cash for personal use.
23 Borrowed Tk. 5000 from the bank on a note payable.
31 Paid secretary-receptionist Tk 5,000 salary for the month.
31 Paid 40% of balance due Ranjan Supply Company.

Instruction: Journalize the above transactions.

Question 5: **Marks: 5+5+2=12**

Mr X opened the Campus Laundromat on September 1, 2012. During the first month of operations, the following transactions occurred:

Sept. 1: Invested Tk 25,000 cash in the business.
7: Purchased washers and dryers for Tk. 25,000 paying Tk. 10,000 in cash and signing a Tk. 15,000, 1 year 12% note payable.
10: Paid Tk. 1,200 for a one year accident insurance policy.
15: Received a bill from the Daily News for advertising the opening of the Laundromat Tk. 800.
20: Withdraw Tk. 1700 cash for personal use.
30: Determined that cash receipts for laundry services for the month were Tk. 6,200.

Instructions:

(a) Journalize the September transactions.

(b) Open ledger accounts and post the September transactions.

(c) Prepare a trial balance at September 30, 2012.

Question 6: **Marks: 3+3+6=12**

a) Define Matching principle and Revenue Recognition principle with examples.

b) Explain the differences between depreciation expense and accumulated depreciation.

b) Thomas Magnum Resort opened for business on April 1, 2013. Its trial balance before adjustment on April 30 is as follows:

THOMAS MAGNUM RESORT
Trial Balance
April 30, 2010

Account Titles	Debit	Credit
Cash	$3,500	
Supplies	2,200	
Prepaid Insurance	2,280	
Land	12,000	
Lodge	60,000	
Furniture	15,000	
Accounts Payable		$4,800
Unearned Rent Revenue		3,300
Mortgage Payable		35,000
Thomas Magnum, Capital		46,380
Rent Revenue		10,300
Advertising Expense	600	
Salaries Expense	3,300	
Utilities Expense	900	
Total	*$99,780*	*$99,780*

Other data:

i. Prepaid insurance is a 1-year policy starting April 1, 2013.
ii. A count of supplies shows $750 of unused supplies on April 30.
iii. Annual depreciation is $3,000 on the lodge and $2,700 on furniture.
iv. The mortgage interest rate is 12% (the mortgage is taken out on April 1).
v. Two-thirds of the unearned rent revenue has been earned.
vi. Salaries of $750 are accrued and unpaid at April 30.

Instruction: Journalize the adjusting entries on April 30.

Question 7: **Marks: 2+10=12**

a) "A worksheet is a permanent accounting record and its use is required in the accounting cycle." Do you agree? Explain.

b)

POLANDO COMPANY
Worksheet
For the Month Ended January 31, 2015

Trial Balance

Account Titles	Dr.	Cr.
Cash	4,500	
Account Receivable	3,200	
Supplies	2,000	
Equipment	11,000	
Accumulated Depreciation		1,250
Notes Payable		2,500
Unearned Revenue		550
Polando, Capital		12,900
Polando, Drawing	1,100	
Service Revenue		6,300
Salaries Expense	1,300	
Miscellaneous Expense	400	
Total	23,500	23,500

Other data:

(i) Supplies have been used total $1,350.
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(iii) Unearned revenue amounted to $230 at January 31.
(iv) Salaries incurred but accrued are $400.
(v) Services provided but unbilled at January 31 total $350.

Instructions: Enter the trial balance on a worksheet and complete the worksheet.