Shahjalal University of Science and Technology

Institute of Information and Communication Technology

BSc (Engg.) in Software Engineering

3rd Year 2nd Semester Final Examination 2021

Course: BUS 301W (Entrepreneurship Development)

Credits: 2.0 Full Marks: 50 Time: 2 Hours

[Answer every question]

Group A

[All parts of a question must be answered sequentially, **like 1(a), 1(b), 1(c).....**]

Q.1 Answer any 5 (five) from the following questions. [5 x 1=5]

a) Define Entrepreneur.
b) Define innovator and innovation.
c) What are the characteristics of an Entrepreneur?
d) Distinguish between Entrepreneur and Intrapreneur.
e) What is Entrepreneurship?
f) Who is an Organizer?
g) What is rural Entrepreneurship?
h) What is Woman Entrepreneurship?

Q.2 Answer any 4 (four) from the following questions. [4 x2.5=10]

a) Being an Entrepreneur, what type will you prefer for your own characteristics and why?
b) How will a Woman Entrepreneur overcome the obstacles for setting up an organization?
c) Why rural Entrepreneurship is needed in a country like Bangladesh?
d) How rural Entrepreneurship would be developed by overcoming the problems?
e) Explain the classification of project.
f) Mention the basic contents of project report.

Q.3 Answer any 2(two) from the following questions. [2 x5=10]

a) What would be the best possible way to perform for a Woman to develop an Organization as an Entrepreneur?
b) How will you select a project? Justify your answer.
c) Mention the advantages and limitations of CPM and PERT.

Group B

[All parts of a question must be answered sequentially, **like 1(a), 1(b), 1(c).....**]

Q.4 Answer any 5 (five) from the following questions. [5 x 1=5]

a) Define Project Appraisal.
b) What is Industrial Symptom?
c) Define Quality and Total Quality Management (TQM).
d) Define E-Commerce.
e) Define Industrial Sickness.
f) Define SMEs.
g) Define Motivation.
h) Define Network.

Q.5 Answer any 4 (four) from the following questions. [4 x2.5=10]

a) Explain the method of Project Appraisal.
b) How and why will you select a Project after identifying among various alternatives?
c) Why TQM process is needed in small-scale Enterprises?
d) Why is Entrepreneurship a growing phenomenon in Business Corporate World?
e) Discuss the concept of the value chain.
f) What are the common errors in project formulation?

Q.6 Answer any 2(two) from the following questions. [2 x5=10]

a) Distinguish between ISO 9000 and TQM.
b) Describe how to use Internet and Library Research to generate new business idea.
c) Discuss the process of Focus Group Discussion.

Mark: 20

Software Metrics TT 02

SWE 331

Time: 40 Min

1. You have a small program with 10 simple inputs, 12 data files (trivial), and twelve outputs, each of average complexity. How many unadjusted function points would this be? Use the following table for reference: (5)

TABLE 4.3 Function Point Complexity Ratings

Component	Simple	Average	Complex
Inputs (I)	3	4	6
Outputs (O)	4	5	7
Data Files (F)	7	10	15
Interfaces (N)	5	7	10
Inquiries (Q)	3	4	6

2. Find the LOC, CC, and Weighted information flow for the following code: (10)

```
// function to implement bucket sort
void bucket(int a[], int n)
{
 int max = getMax(a, n); //max is the maximum element of array
 int bucket[15000], i;
 for (int i = 0; i <= max; i++)
  {
  bucket[i] = 0;
  }
 for (int i = 0; i < n; i++)
  {
  bucket[a[i]]++;
  }
 for (int i = 0, j = 0; i <= max; i++)
  {
  while (bucket[i] > 0)
   {
   a[j++] = i;
   bucket[i]--;
   }
  }
}
```

References:

1. CC = Binary Decisions + 1
2. Weighted IFC = length * (fanin * fanout)2

3. What do you understand by 'cone of uncertainty ' & how to deal with the uncertainties of estimates? Explain with an example. (5)

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Institute of Information and Communication Technology (IICT)
3^{rd} year 2^{nd} Semester Final Examination - 2021
Session—**2018-19** Course No.—**SWE 331**
Course Title—**Software Usability & Metrics**

Time—**2 Hours** Credit: **2.00** Total Marks#**50**

Part A

1. Answer the following Questions (Any **Five**). $5 \times 1 = 5$
   (a) What is CMMI?
   (b) For a normal distribution, one σ (one standard deviation. above and below the mean) includes 80% of the population - true or false.
   (c) A metrics program is defined by GQM with bottom-up approach - true or false.
   (d) How many types of measurement models are there? State the names.
   (e) What is 'Death March'?
   (f) How to measure 'Effort' according to *Algorithmic model*?
   (g) The mean is a valid measure of central tendencies for a metric using the ordinal scale - true or false.

2. Answer the following Questions (Any **Four**). $4 \times 2.5 = 10$
   (a) Define different measurement scale types along with the ways for measuring of central tendency.
   (b) "Systematic errors change the variance but not the mean" - do you agree with the statement? Explain your answer.
   (c) Once you have defined an effective metrics program for your organization, how frequently should you change it?.
   (d) Define the pros and cons for "Function Point".
   (e) Why measuring metrics are a function of time?
   (f) Show that the mean can be used as a measure of central tendency for interval-scale data.

3. Answer the following Questions (Any **TWO**). $2 \times 5 = 10$
   (a) Define a four-level model for software reliability using the metrics meta-model.
   (b) [i] Define the measurement scale types. (2)
   [ii] Suppose that the attribute "complexity" of software modules is ranked as a whole number between 1 and 5, where 1 means "trivial," 2 "simple," 3 "moderate," 4 "complex," and 5 "incomprehensible." What is the scale type for this definition of complexity? How do you know? With this measure, how could you meaningfully measure the average of a set of modules? (3)
   (c) You have a system that has 3 inputs, 1 output, and 1 database file. All are of average complexity. The Technical Complexity Factors are all 2. You are writing this in Java[The David Consulting Group's gearing factor for JAVA is 80]. Count UFPs, AFP, and expected LOC for this given data.

TABLE 4.3 Function Point Complexity Ratings

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Interfaces (N)	5	7	10
Inquiries (Q)	3	4	6

Part B

4. Answer the following Questions (Any **Five**). $5 \times 1 =$

   (a) What are the types of software development complexity?

   (b) What is the "sweet spot"?

   (c) What is measured by the "Information flow metric"?

   (d) The Agresti–Card–Glass metric attempts to measure both coupling and cohesion - true or false.

   (e) True or False: Good software should be less than 2 defects per KLOC.

   (f) What is "Defect Removal Efficiency"?

   (g) True or False: If you have a module with a CC 50, you should seriously consider refactoring/rewriting it.

5. Answer the following Questions (Any **Four**). $2.5 \times 4 = 10$

   (a) According to the Maintainability Index, decreases in which factor improves code maintainability and Why?

   (b) Explain the relationship between defect density vs. module complexity.

   (c) Define "Defect Removal Efficiency" and give an example for this metric.

   (d) Define the CK metric suite.

   (e) Do you think "fanin seems to be a right choice for information flow complexity"? Why or Why Not?

   (f) What does High information complexity of a procedure indicates?

6. Answer the following Questions (Any **One**). $1 \times 10 = 10$

   (a) The following pseudocode implements the Sieve of Eratosthenes, which finds all prime numbers less than n.

```
Eratosthenes (n) {
    e[1] := 0
    for i:= 2 to n do e[i]:= 1
    p:= 2
    while p*2<n do {
      j:= p*2
      while (j<n) do {
        e[j]:= 0
        j:= j+p
      }
      repeat p:= p+1 until e[p] = 1
      }
    j := 0
    for i:=2 to n do {
      if e[i]==1
        a[j++] = i
      }
    return(a)
}
```

(15)

Calculate the following complexity metrics for this program: LOC, CC, ECC, Halstead, Agresti–Card–Glass, information flow, and maintainability index. [NOTE: $MI = 171 - 5.2ln(aV) - 0.23aV(g') - 16.2ln(aLOC) + 50sin[(2.4 * perCM)^{1/2}]]$

(b) You are now in system test. For "SWE TECHNOVENT WEBSITE", you have the defect arrival data points below till now. **Assume a Raleigh curve.**

Month	1	2	3	4	5	6
Defects Found	13	22	25	22	17	5

[i] What will be the equation to predict defects ($f(t)$ & $F(t)$) for this system? (7)
Reference: (a) $f(t) = K * 2(t/c^2)e^{-(t/c)^2}$ and (b) $F(t) = K(1 - e^{-(t/c)^2})$

[ii] If you shipped at the end of month 3 (and assuming you removed all the defects found at that time), what would you predict as the defect removal efficiency? (3)

Term Test 01

Course: Software Verification and Validation

Course Code: SWE 333

Marks: 20 Time: **60 mins**

a % b = 0 return 2

else rec (b, a % b

1. What are testing bugs? - **01**
2. What is exhaustive testing? Why should it be avoided? - **02**
3. Explain the following terminologies: Failure, Bug, Error. - **02**
4. Distinguish between Verification and Validation activities. - **03**
5. A program reads two numbers, A and B within the range (0, 100] and calculate the GCD of those numbers. Design test cases for this program using BVC, robust testing, ~~and worst-case testing~~ methods. - **06**
6. Passengers who travel more than 50,000 km. per calendar year and in addition, pay cash for tickets or have been traveling regularly for more than eight years are to receive a free round trip ticket around India. Passengers who travel less than 50,000 km. per calendar year and have been availing railway services regularly for more than eight years also get a free round ticket around India.
   Design test cases for this system using decision table testing. - **06**

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Institute of Information and Communication Technology (IICT)
Software Engineering
3rd Year 2nd Semester Final Examination' Dec 2022 (Session: 2018-19)
Course Code: SWE 333 Credits: 2 Course Title: Software Verification and Validation
Time: 2 hrs Total Marks: 50

Group A
[Answer all the questions]

1. Answer any FIVE **5x1=5**

a) What is Regression Testing?

b) Who is responsible for unit testing?

c) What is "Bug model"?

d) What is a race condition bug?

e) Write down the Software Development Life Cycle steps.

f) What is Cyclomatic Complexity?

g) What is system testing?

2. Answer any FOUR **4x2.5=10**

a) What is exhaustive testing? Why should it be avoided?

b) Write down the difference between Top-Down and Bottom-Up Integration Testing.

c) "Testing is not a single phase in SDLC" - discuss briefly.

d) Explain the elements of security testing.

e) Draw the diagram of the life cycle of a bug.

f) Write a short note on the state of a bug in its life cycle.

3. Answer any TWO **2x5=10**

a) A wholesaler has three commodities to sell and has three types of customers. Discount is given as per the following procedure:
(i) For DGS & D orders, a 10% discount is given irrespective of the value of the order.
(ii) For orders of more than Tk 50,000, agents get a discount of 15% and the retailer gets a discount of 10%.
(iii) For orders of Tk 20,000 or more and up to Tk 50,000, agents get 12% and the retailer gets an 8% discount.
(iv) For orders of less than Tk 20,000, agents get 8% and the retailer gets 5% discount.
The above rules do not apply to the furniture items wherein a flat rate of 10% discount is admissible to all customers irrespective of the value of the order.

Design test cases for this system using decision table testing.

b) A program reads three numbers, A, B, and C, with a range (1, 50) and prints the largest number. Design test cases for this program using equivalence class testing technique.

c)
```
#include < stdio.h >
main() {
  float x, y, z;
  clrscr();
  printf("enter the three variables x, y, z");
  scanf("% f % f % f",& x,& y,& z);
  if (x > y) {
    if (x > z)
      printf("x is greatest");
    else
      printf("z is greatest");
  }
  else {
    if (y > z)
      printf("y is greatest");
    else
      printf("z is greatest");
  }
  getch();
}
```

(a) Draw the DD graph for the program.
(b) Calculate the cyclomatic complexity of the program using all four methods.

Group B

[Answer all the questions]

4. Answer any FIVE **5x1=5**

a) What is inspection testing?

b) What will happen if we test the whole system directly?

c) What type of test plan can we make after verifying the SRS?

d) What is High-Level design of a software system?

e) Who are the stakeholders of regression testing?

f) Give 2 examples of validation testing techniques.

g) What is Software Crisis?

5. Answer any FOUR **4x2.5=10**

a) Distinguish between Verification and Validation activities.

b) Classify bugs based on criticality.

c) Write the differences between Validation and Verification activities.

d) Draw and explain the V-testing model.

e) What is the difference between debugging and testing?

f) What is Dynamic testing technique? State different types of dynamic testing.

6. **Answer any TWO** 2x5=10

a) A program reads two numbers, A and B within the range (0, 100] and calculates the GCD of those numbers. Design test cases for this program using BVC and robust testing methods.

b) A program takes as input three angles and determines the type of triangle. If all the three angles are less than 90, it is an acute angled triangle. If one angle is greater than 90, it is an obtuse angled triangle. If one angle is equal to 90, it is a right angled triangle. Design test cases for this program using equivalence class testing technique.

c) What is the difference between software Verification and Validation? What are the outcomes of each step in V&V activities? 2+3

SWE 335 Term Test 1 Introduction to data science **Marks: 25** **Time: 40 Min**

Assume this dataset below is about the unit price of a fabric. There are 10 shades of colors and 10 levels of qualities. Using this, answer the following questions.

	Color	Quality	Price
1	7	5	65
2	3	7	38
3	5	8	51
4	8	1	38
5	9	3	55
6	5	4	43
7	4	0	25
8	2	6	33
9	8	7	71
10	6	4	51

Results of Multiple Regression	
n	10
k	2
R-Square	0.850694
F	22.79061
p-value	0.000497

$RSE = \frac{1}{K}\sum_{1}^{n}(y-\bar{y})$

RSE ?

1. Write FIVE questions that can be asked about this fabric.
2. Draw a scatter plot with Quality and Price and write the findings from it.
3. Interpret the regression results given in the above table. What is the hypothesis here? Do you accept it?
4. Assume Price is the response variable here. Write the equations for all possible linear regression models using this data up to 2nd order polynomials.
5. What is cross validation? Write how a 5-fold cross validation be done with the dataset to find the best model? What is your evaluation criterion?

Shahjalal University of Science and Technology
Institute of Information and Communication Technology (IICT)
SWE 3rd Year 2nd Semester Final Exam Dec-2021 (Session: 2018-19)
Course Code: SWE335 Course Title: Introduction to Data Science
Credits: 2 Time: 2 hrs Total Marks: 50

Group A

[Answer all the questions]

1. Answer any FIVE **5x1=5**

a) What is Data Science?
b) What is a Statistical Model?
c) What is a Loss Function?
d) What is Supervised Learning?
e) What is Structured data? Give examples.
f) What is a Confidence Interval?
g) What is web scrapping?
h) What is Bias-Variance Trade-off?

2. Answer any FOUR **4x2.5=10**

a) Assume there are two features (X_1, X_2) in a data set. Write the 3rd order Polynomial Regression model for it.
b) Define Data, Distribution, Population, Sample and Bias.
c) Write down the purpose(s) statistical modeling, with appropriate example(s).
d) What are the things that we want to visualize about a data? Name the suitable plot(s) for each purpose.
e) What are the things to consider while evaluating a model?
f) What is Overfitting? Write why overfitting happens.

3. Answer any TWO **2x5=10**

a) i. Perform Linear Regression on the following dataset: 2

Height (inch)	Weight (lbs)
60	140
62	155
67	160
75	200

ii. Re-estimate the responses using your model. 1
iii. Calculate Loss and Fitness of the model. 2

b) i. What is Hypothesis testing? Why do we do this? 1+1
ii. Assume a model $Y = B_0 + B_1 X_1 + B_2 X_2 + B_3 X_3 + B_4 X_1 X_3 + \varepsilon$. What is the final model if you get the following P-Values after performing hypotheses testing on the significance of the predictors? 2

Coefficients	P-Value
B_0	0.00
B_1	0.08
B_2	0.03
B_3	0.01
B_4	1.00

iii. Write which predictor(s) are **not** significant. 1

c) i. Write all possible regression models for the following data if you consider up to 2nd order polynomials and/or an interaction between predictors: 3

Y	X_1	X_2
140	60	22
155	62	25
179	70	20
192	71	15
200	72	14
215	78	11

ii. What is Cross Validation? Write how K-fold cross validation can be used to select a suitable model. 2

Group B

[Answer all the questions]

4. Answer any FIVE **5x1=5**

a) What is Logistic Regression?
b) What is Regularization?
c) Define Bayes' Information Criterion.
d) What is an ROC curve?
e) Define Entropy.
f) What is a Random Forest?
g) Define Eigen Value and Eigen Vector.
h) How categorical variables are used in computation?

5. Answer any FOUR **4x2.5=10**

a) Differentiate between regression, classification and clustering.
b) What are the differences between Parametric and Non-Parametric Models?
c) How regression can be done by decision trees?
d) How to avoid Overfitting?
e) Define Entropy. Suppose you have tossed a 4 faced dice 1000 times where 1, 2, 3 and 4 showed up 250, 500, 125, and 125 times respectively. Calculate the Entropy for this dice. What can you say about this dice?
f) What is Imputation? How to impute missing values in data?

6. Answer any TWO **2x5=10**

a) i. What is Information Gain? 1

ii. You want to buy a car and have the following models available. Build a Decision tree with the data, show the calculations. 3

	Age	Mileage	Road Tested	Buy
1	Recent	Low	Yes	Buy
2	Recent	High	Yes	Buy
3	Old	Low	No	Don't buy
4	Recent	High	No	Don't buy

iii. What are the limitation(s) of a Decision Tree? 1

b) Suppose you have written a classifier to label your pictures of sad faces and happy faces. You have tested your classifier with some images and got the following predictions:

	Target	Prediction
1	Happy	Sad
2	Happy	Sad
3	Sad	Sad
4	Happy	Happy
5	Sad	Happy
6	Sad	Sad
7	Sad	Sad
8	Happy	Happy
9	Happy	Sad
10	Sad	Sad

i. Make the Confusion matrix.
ii. Calculate Accuracy, Sensitivity, Precision and Recall of your classifier. 2

c) i. What is Principal Component Analysis? 3
ii. Write the steps of computing principal components of N data with J features. 1
iii. How can we get the original data back? 3
1

TT#01 Course: Computer, Data & Network Security (**SWE 337**)

Marks: 20 Time: **40 mins**

1. What are the differences between Access Control Metrics and Access Control Lists of Access Control Models? **04**
2. What is Digital Signature? Briefly state the steps in producing digital signatures. **03**
3. Calculate the GCD(2260, 812) using the Euclidean Algorithm. **04**
4. Suppose you are given the following text "dog" and a random matrix K. Now find the cipher text using Hill Cipher. **05**

$$K = \begin{bmatrix} 1 & 2 & 5 \\ 3 & 3 & 4 \\ 2 & 1 & 3 \end{bmatrix}$$

5. Find the unicity distance of the Caesar cipher where the number of keys = 25 and the language is English. **04**

75-52 = 23

176 352 528 704 — 636 — 108

812 1624 2436

2260 - 1624 812 - 636 176

TT#02 Course: Computer, Data & Network Security (**SWE 337**)

Marks: 20 Time: **40 mins**

1. Suppose a group of people agreed upon a key, K = "PUZZLE". Now find the ciphertext of the plaintext, M = "LITTLE" using Playfair cipher. **- 05**
2. Write a short note on Diffie-Hellman key exchange protocol. **- 03**
3. Why is ECB mode bad with images? Explain in brief. **- 02**

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Software Engineering
3rd Year 2nd Semester Final Examination' Dec 2022 (Session: 2018-19)
Course Code: SWE 337 Credits: 2 Course Title: Computer, Data & Network Security
Time: 2 hrs Total Marks: 50

Group A
[Answer all the questions]

1. Answer any FIVE **5x1=5**

a) What do you understand by the term "Integrity" in the context of Computer Security?

b) Eavesdropping is an active attack? True or False? If false, why?

c) What is Message Authentication Code?

d) What is "Non-Repudiation"?

e) What is digital signature?

f) What is the one time pad?

g) What is the Open Design Principle?

2. Answer any FOUR **4x2.5=10**

a) Differentiate between Authentication and Authorization?

b) Briefly explain the A.A.A concepts in modern computer security.

c) What is Digital Signature? Briefly state the steps in producing digital signatures.

d) Calculate the GCD(226, 12) using the Euclidean Algorithm.

e) Suppose the number of keys for substitution Cipher is 26!. If we partition the plaintext into bigram, what will be the number of keys in the keyspace?

f) Write the disadvantages of substitution cipher.

3. Answer any TWO **2x5=10**

a) What is block cipher? Briefly explain the ECB and CFB mode of block cipher.

b) Suppose you are given the following text "Tom" and a random matrix K. Now find the cipher text using Hill Cipher.

$$K = \begin{bmatrix} 1 & 2 & 5 \\ 3 & 3 & 4 \\ 2 & 1 & 3 \end{bmatrix}$$

c) Suppose Bob wants to send a message, M = 13 to Alice, Both Alice's public key and private key are (33, 3) and (33, 7). Now calculate the ciphertext C and then decrypt it to retrieve the message, M.

Group B

[Answer all the questions]

4. Answer any FIVE **5x1=5**

a) What do you understand by the term "Security by obscurity"?

b) What is Kerckhoffs's Principle for open design?

c) What is "Dictionary attack"?

d) What is SSH?

e) What is Social Engineering attack?

f) What is pretexting?

g) What is the least privilege principle?

5. Answer any FOUR **4x2.5=10**

a) Calculate 5^{31} mod 13 using repeated squaring.

b) Briefly describe some benefits of IPsec.

c) Suppose the number of keys for substitution Cipher is 26!. If we partition the plaintext into trigram, what will be the number of keys in the keyspace?

d) What are the advantages and disadvantages of asymmetric cryptography?

e) How can Man-In-The-Middle attack be mitigated?

f) Briefly state how Digital Certificate works.

6. Answer any TWO **2x5=10**

a) Dexter wants to set up his own public and private keys. He chooses p = 23 and q = 19 with e = 283. Find d so that ed has a remainder of 1 when divided by (p − 1)(q − 1). **5**

b) Suppose Nazia chose a prime number, p = 7 and a generator g = 3. She will use Elgamal Cryptosystem for encryption and decryption.

i) Find the public key and private key for Nazia. **2**

ii) If Munif wants to send a message, M = 7, to Nazia, what will be the ciphertext of Munif? **3**

c) Suppose Alice chose a prime number, p = 7 and a generator g = 3. She will use Elgamal Cryptosystem for encryption and decryption.

i) Find the public key and private key for Alice. **2**

ii) If Bob wants to send a message, M = 13, to Alice, what will be the ciphertext of Bob? **3**

© K = "ASGARD" plaintext, M = "GROOT" playfair cipher

Shahjalal University of Science and Technology
Institute of Information and Communication Technology
BSc (Engg.) in Software Engineering
3rd Year 2nd Semester Final Examination 2021
Course: SWE 339 (Management Information System)
Credits: 2.0 Full Marks: 50 Time: 2 Hours

[Answer every question]

Group A

Q.1 Answer any 2 questions. [2 x 2.5]

a) Define Informal Information with examples.
b) What are the goals sought by systems?
c) What do you understand by Human-Machine systems?

Q.2 Answer any 2 questions. [2 x 10]

a) i) Define Closed, Relatively Closed, and Open Systems with proper diagram. [6]
ii) Briefly explain at least 2 characteristics of Open Organizational Systems. [4]

b) i) What do Information Systems do? Explain with a proper diagram. [5]
ii) Write down some functions of Mid-Level Management. [5]

c) i) What are some disciplines that are contributing to the field of MIS? [4]
ii) Briefly explain the different components of MIS. [6]

Group B

Q.3 Answer any 2 questions. [2 x 12.5]

a) The Human Resource Management (HRM)department in any organization is considered to be highly critical for the entire organization. Its many functions serve as a supportive background for the organization. In order to function optimally, the organization must have the right tools and resources in place. The Human Resource Management (HRM) module is one of the main modules in the Osmany Medical Hospital Automation System. The HRM module encompasses a large number of activities. Hence, the module is divided in some sub-modules:

i) write down the name of 5 sub-modules. [2.5]
ii) What are the expected benefits of the sub-module Leave management? [5]
iii) describe the Process flow diagram of the attendance management sub-module of HRM. [5]

b) The inventory module is vital for any agency for keeping records of all the purchased goods purchased (or already available items). For managing different types of items possibly kept in different stores/locations, an efficient and effective inventory module is a must to have a component in an Automation System. Different items are purchased through different procurement methods are delivered to the agency through a delivery chaalan. The receiving committee then checks the items quality (to make sure they are okay) and upon their acceptance, the items are finally entered into the inventory. The inventory module allows members of the agency to issue different items for use for different periods of time. .

i) Write some expected benefits from the Inventory module. [5]
ii) Describe the process description of the Inventory module with a process flow diagram. [7.5]

c) Maintaining accounts in a standard way is one of the most important tasks in any organization whether it is private or public. All kinds of financial activities have to be recorded through a double-entry accounting system. Naturally, it becomes difficult to find any kind of expense or record from the manual register book whenever necessary. This sub-module is designed to manage all kinds of financial activities, records, and transactions electronically to facilitate extensive searches. It also generates all the standard accounting reports.

i) List potential sub-modules of the Accounting module. [2.5]
ii) write some master/System data of the Payroll sub-module. [5]
iii) Draw a Use-case diagram of the Pension Management sub-module. [5]