Council for Technical Education and Vocational Training
Office of the Controller of Examinations
Sanothimi, Bhaktapur

Back Exam – 2082 Shrawan/Bhadra

Program: Diploma in Computer Engineering **Full Marks: 80**
Year/Part: III/II (2018) **Pass Marks: 32**
Subject: Software Engineering **Time: 3 hrs.**

Candidates are required to give their answers in their own words as far as practicable.
The figures in the margin indicate full marks.

Attempt any FIVE Questions.

1. a. Define program and software. List characteristics and types of software. (4+4)
   b. Define SDLC. Explain prototyping model with its advantages and disadvantages. (2+6)
2. a. Explain software project scheduling. Write activities in project management. (4+4)
   b. Define requirement elicitation. What are the characteristics of good SRS? (2+6)
3. a. Describe ER diagram with example of school management system. (8)
   b. Describe about the software design model and design strategies. (8)
4. a. Explain coupling and cohesion. (4+4)
   b. What are software metries? Why do we need it? Explain its various categories. (3+5)
5. a. Define software reliability. Explain different levels of CMM. (2+6)
   b. What is software testing? Explain different types of software testing. (2+6)
6. a. Define software assurance. Describe software maintenance. (2+6)
   b. Write short notes on: (any **TWO**) (2×4)
      i. Quality control ii. Risk analysis
      iii. Requirement engineering

Good Luck !

Council for Technical Education and Vocational Training

Office of the Controller of Examinations

Sanothimi, Bhaktapur

Regular/Back Exam – 2081/2082 Chaitra/Baishakh

Program:	**Diploma in Computer Engineering**	**Full Marks: 80**
Year/Part:	**II/I (2022)**	**Pass Marks: 32**
Subject:	**Software Engineering**	**Time: 3 hrs.**

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt any FIVE questions.

1. a. Define software engineering. Differentiate between software and program. [2+6]
   b. What is data dictionary? Explain E-R diagram with an example. [1+7]
2. a. Describe spiral model with its advantages and disadvantages. [10]
   b. Explain about software project estimation techniques. [6]
3. a. Describe the various activities involved in software project management. [6]
   b. Why do we need software metrics? Explain. [5]
   c. What are the key attributes of high quality software? Explain in brief. [5]
4. a. Differentiate between function oriented design and object oriented design. [8]
   b. What do you mean by software design? Explain the software design strategies. [2+6]
5. a. Why do we need software testing? Explain the different levels of software testing. [2+6]
   b. What is software development life cycle? Explain different types of software maintenance. [2+6]
6. Write short notes on: (any **FOUR**) [4×4]
   a. Requirement elicitation
   b. Verification and validation
   c. RAD model
   d. Software reliability
   e. COCOMO model
   f. Types of software

Good Luck !

Council for Technical Education and Vocational Training

Office of the Controller of Examinations

Sanothimi, Bhaktapur

Back Exam – 2081 Kartik/Mangsir

Program: Diploma in Computer Engineering **Full Marks: 80**

Year/Part: III/II (2018) **Pass Marks: 32**

Subject: Software Engineering **Time: 3 hrs.**

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt any FIVE questions.

1. a) Define software and software engineering. Differentiate between program and software. [4+4]

   b) Define SDLC. Explain waterfall model with its advantages and disadvantages. [2+6]

2. a) What are activities in project management? Explain COCOMO model. [4+4]

   b) Define requirement elicitation technique. Explain requirement elicitation techniques in detail. [2+6]

3. a) Define entity relationship diagram. Explain the nature and characteristics of a good SRS. [2+6]

   b) Describe about the software design model and design strategies. [8]

4. a) What is software prototyping? Differentiate between function oriented design and object oriented design. [2+4]

   b) What is risk? How can you manage it? Explain software matrices with example. [1+4+5]

5. a) Define software quality. Explain Capability Maturity Model (CMM). [2+4]

   b) What is software testing? Explain different types of software testing. [2+8]

Cont. .....

6. a) Define software maintenance? Explain types of software maintenance. [2+6]

   b) Write short notes on **(any TWO)** [2×4]

   i) Quality assurance

   ii) Generic view of software engineering

   iii) RAD

Good Luck !

Council for Technical Education and Vocational Training

Office of the Controller of Examinations

Sanothimi, Bhaktapur

Regular/Back Exam - 2080/2081, Chaitra/Baishakh

Program: Diploma in Computer Engineering **Full Marks: 80**

Year/Part: II/I (2022) **Pass Marks: 32**

Subject: Software Engineering **Time: 3 hrs.**

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt any EIGHT questions.

1. a. Describe SDLC. Explain in brief about different phases of SDLC. [6]
   b. Explain Rapid Application Development model (RAD) with its advantages. [4]
2. a. Define software with its characteristics. Explain types of software. [6]
   b. Explain spiral model with diagram. [4]
3. a. Define risk. Explain the process of risk management. [4]
   b. Explain software project estimation and write briefly on COCOMO model. [6]
4. a. Describe software project scheduling and time line charts. [4]
   b. What do you mean by requirement elicitation? Explain the methods of information gathering in brief. [6]
5. a. What id DFD? Explain with example in brief. [4]
   b. Explain briefly about software design model and design strategies. [6]
6. a. Differentiate between function oriented design and object oriented design. [4]
   b. Explain software metrics with its example. [6]
7. a. What is software reliability? Explain different types of software reliability models. [5]

Cont. .....

b. Explain the types of testing carried out during software testing. [5]

8. a. Define white box and black box testing. [4]

b. Explain different types of software maintenance. How can we determine the software maintenance cost? [6]

9. Write short notes on: (any **FOUR**) [4×2.5]

a. Selection criteria of lifecycle model

b. Verification Vs. validation

c. Regression testing

d. Data dictionary

e. Quality assurance

Good Luck !

Council for Technical Education and Vocational Training

Office of the Controller of Examinations

Sanothimi, Bhaktapur

Regular/Back Exam – 2080 Magh/Phagun

Program: Diploma in Computer Engineering | **Full Marks: 80**

Year/Part: III/II (2018) | **Pass Marks: 32**

Subject: Software Engineering | **Time: 3 hrs.**

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks

Attempt any FIVE questions.

1. a. Differentiate between program and software. [8]
   b. Explain iterative enhancement model in brief. [8]
2. a. Explain briefly about software development life cycle phases. [8]
   b. What is SRS? Explain characteristics of a good SRS. [2+6]
3. a. Describe briefly project estimation techniques. [8]
   b. What is risk and risk analysis? Explain briefly about how we can manage risk. [1+1+6]
4. a. What are software metrics? Why do we need software metrics? Explain. [3+5]
   b. Differentiate between function oriented design and object oriented design. [8]
5. a. Explain Capability Maturity Model (CMM) and its different levels. [2+6]
   b. Explain briefly the process of software maintenance. [8]
6. a. Why do we need software testing? Explain any four types of software testing. [2+6]
   b. Differentiate between quality assurance and quality control. [8]
7. Write short notes on: (any **TWO**) [2×8]
   a. ER diagram
   b. Version control system
   c. COCOMO model

Good Luck !

Council for Technical Education and Vocational Training

Office of the Controller of Examinations

Sanothimi, Bhaktapur

Regular Exam-2080 Bhadra

Program: Diploma in Computer Engineering | **Full Marks: 80**

Year/Part: II/I (2022) | **Pass Marks: 32**

Subject: Software Engineering | **Time: 3 hrs.**

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt any FIVE questions.

1. a) Define program and software. Explain briefly types of software. [2+6]

   b) What is Software Development Life Cycle (SDLC)? Explain different phases of SDLC. [2+6]

2. a) Explain briefly iterative enhancement model. [8]

   b) What is software project scheduling? Explain time line charts with its benefits. [2+6]

3. a) Define requirement elicitation. What are the characteristics of good SRS? [2+6]

   b) Make Level 0 and Level 1 data flow diagram of student registration system. [3+5]

4. a) What do you understand by software design strategies? Differentiate between function and object oriented design. [1+7]

   b) What is software metrics and why do we need them? Explain briefly various categories of software metrics. [1+2+5]

5. a) What is software reliability? Differentiate between software reliability prediction model and estimation model. [2+6]

   b) List out types of software testing. Differentiate between white box testing and black box testing. [1+7]

6. a) Explain briefly software quality attributes. [8]

   b) What is software maintenance? Why do we need software maintenance? Explain different types of software maintenance. [2+2+4]

7. Write short notes on: (any **TWO**) [2×8=16]

   a) COCOMO model

   b) Verification Vs validation

   c) Activities in project management

Good Luck!

Council for Technical Education and Vocational Training

Office of the Controller of Examinations

Sanothimi, Bhaktapur

Regular/Back Exam-2080, Bhadra

Program: Diploma in IT Engineering | **Full Marks: 80**

Year/Part: III/I (2016) | **Pass Marks: 32**

Subject: Software Engineering | **Time: 3 hrs.**

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Attempt Any Eight questions.

1. What is software engineering? Differentiate between program and software. Explain about generic and customized software product. [2+4+4]
2. Explain the steps in SDLC. Write about agile model in detail. [5+5]
3. What is software Requirement engineering? Explain about functional and Non-functional, requirement. [4+6]
4. What is cost estimation? Explain about the COCOMO model. [2+8]
5. Explain about the different strategies of design. [10]
6. What is token count? Calculate the length and volume of the following block of program: [2+8]

```
--
        int a;
        int b;
        int c;
if (a > b) and (a > c)
   {print a;}
else if (b > a) and (b > c)
   {print b;}
else
      Print c:
```

7. What is software Reliability? Explain about the Capability Maturity Model (CMM). [2+8]
8. What is testing? Explain about Black Box and white Box testing. [2+4+4]
9. Explain about software reverse engineering and software re-engineering. [5+5]

10. Write short notes on: **(Any Two)** [2x5=10]
    i) 4P model
    ii) Cohesion
    iii) Levels of testing
    iv) Requirement Elicitation

Good Luck!

Council for Technical Education and Vocational Training

Office of the Controller of Examinations

Sanothimi, Bhaktapur

Regular/Back Exam-2079 Chaitra/2080 Baishakh

Program: Diploma in Computer Engineering **Full Marks: 80**

Year/Part: III/II (2018) **Pass Marks: 32**

Subject: Software Engineering **Time: 3 hrs.**

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt any EIGHT questions.

1. Compare software and program. Explain characteristics of software. [4+6]
2. Define SDLC. Explain Rapid Application Development (RAD) model along with its advantages and disadvantages. [2+8]
3. Explain coupling and cohesion. Compare object oriented design Vs. function oriented design. [4+6]
4. What is importance of requirement documentation? Explain SRS with its characteristics. [3+7]
5. Discuss about software metrics and its importance. Explain software reliability. [6+4]
6. Explain four various types of software testing. [10]
7. Define software maintenance. Why we need software maintenance? Explain any two types of maintenance models. [2+2+6]
8. What is project management and why we need it? Explain activities of project management. [4+6]
9. What is data dictionary? Explain E-R diagram with an example. [2+8]
10. Write short notes on: (any **TWO**) [2×5]
    a. Version and release Management
    b. Capability maturity model (CMM)
    c. Quality factors

Good Luck !

Council for Technical Education and Vocational Training

Office of the Controller of Examinations

Sanothimi, Bhaktapur

Regular/Back Exam-2079, Bhadra /Ashwin

Program: Diploma in IT Engineering | **Full Marks: 80**

Year/Part: III/I (2016) | **Pass Marks: 32**

Subject: Software Engineering | **Time: 3 hrs.**

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt Any Eight questions.

1. What is software? Explain about 3P and 4P model. **[2+8]**
2. Explain prototyping model. Write down the characteristics of a good SRS. **[5+5]**
3. What do you mean by project planning? Explain about size estimation and software risk management. **[3+3+4]**
4. Explain bottom-up and top-down approach strategy of software design. **[10]**
5. What is software metric and how can it be measured? Explain about defect density and inspection rate. **[5+5]**
6. Differentiate between white box testing and black box testing. Explain about testing tool. **[6+4]**
7. Define DFD. Design DFD for library management system upto level-1. **[2+8]**
8. What do you mean by Capability Maturity Model? Describe its levels. **[2+8]**
9. Explain about reverse engineering and re-engineering. **[5+5]**
10. Write short notes on : **(Any Two)** **[2×5=10]**
    a) Configuration management
    b) Levels of testing
    c) Maintenance model

Good Luck!

Council for Technical Education and Vocational Training
Office of the Controller of Examinations
Sanothimi, Bhaktapur

Regular/Back Exam-2078/2079, Chaitra/Baishakh

Program: Diploma in Computer Engineering | **Full Marks:** 80
Year/ Part: III/II (2018 New) | **Pass Marks:** 32
Subject: Software Engineering | **Time:** 3 hrs.

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt Any Five Questions.

1. a) Differentiate between following terms: [5+5]
   i) Program Vs software
   ii) Software process and software process model
   b) What are the good characteristics of software? Explain. [6]
2. a) Describe spiral model with its advantages and disadvantage. [8]
   b) Explain RAD (Rapid application development) model. [8]
3. a) Explain the detail task in a software configuration management process with example. [10]
   b) Define Risk. Explain the process of Risk management. [6]
4. a) What do you mean by requirement elicitation? Write down various methods of gathering requirement and explain them. [8]
   b) Why do we use Use-case diagram in object-oriented development? Draw a Use-case diagram for an Online course registration system. [8]
5. a) Describe about the software design model and design strategies. [8]
   b) What is software metrics? Explain it with examples. [2+6]
6. a) What is software quality? Discuss about software reliability model. [8]
   b) List and explain different types of software testing. [8]
7. Write short notes on : **(Any Two)** [2x8=16]
   i) COCOMO model
   ii) Quality assurance
   iii) Verification Vs validation

Good Luck !

Council for Technical Education and Vocational Training

Office of the Controller of Examinations

Sanothimi, Bhaktapur

Regular/Back Exam-2078, Kartik/Mangsir

Program: Diploma in Information Technology | **Full Marks: 80**

Year/Part: III /I (2016 , New Course) | **Pass Marks: 32**

Subject: Software Engineering | **Time: 3 hrs.**

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt Any Eight questions.

1. What is software engineering? Differentiate between program and software. Explain about the applications of software. **[2+3+5]**
2. What is SDLC? Explain about agile model in software development. **[2+8]**
3. Explain about SRS. Also, explain about the characteristics of a good SRS. **[4+6]**
4. What is cost estimation? Explain about the COCOMO and COCOMO II. **[2+8]**
5. What is software design? Explain different strategies of design. **[2+8]**
6. What are software metrics and why are they used? Explain about token count. **[5+5]**
7. Define software quality? Explain about capability maturity model (CMM). **[2+8]**
8. What is software testing? Explain different levels of testing. **[2+8]**
9. Write about software management process. Also, explain about software re-engineering. **[5+5]**
10. Write short notes on: **(Any TWO)** **[2×5]**
    a. Interviews
    b. Cohesion and Coupling
    c. Black Box and White Box Testing
    d. 4P Model

Good Luck!

Council for Technical Education and Vocational Training

Office of the Controller of Examinations

Sanothimi, Bhaktapur

Regular/Back Exam-2076, Falgun/Chaitra

Program: Diploma in Information Technology — **Full Marks: 80**

Year/Part: III/I (New Course) — **Pass Marks: 32**

Subject: Software Engineering — ***Time:* 3 *hrs***

andidates are required to give their answers in their own words as far as acticable. The figures in the ma

Attempt **Any Eight** Questions

1. What is difference between Generic and customized software product? explain the role of management in software development process. [5+5=10]
2. What is SDLC? Explain Prototyping model in brief. [5+5=10]
3. What is SRS? Explain the characteristics of SRS. [2+810]
4. What is cost estimation ? Explain about COCOMO. [2+810]
5. Explain about the top-down and bottom-up approach of design. [10]
6. Find the length and volume of the following block of program: [10]

```
input a; input b; input c;
if(a>b and a>c)
{
  print a;
}
else if (b>a and b>c)
{
  print b;
}
  else
{
  print c;
}
```

7. Explain about the capability Maturity Model. [10]
8. What is Testing? Explain different levels of testing while designing system. [2+8=10]
9. Write short notes on:**(Any Two)** [2x5=10]
   a) Documentation
   b) Software risk management
   c) Verification and validation

Good Luck !

Council for Technical Education and Vocational Training

Office of the Controller of Examinations

Sanothimi, Bhaktapur

Regular/Back Exam-2076, Shrawan/Bhadra

Program: Diploma in Computer Engineering — **Full Marks: 80**

Year/Part: II / II (2010) — **Pass Marks: 32**

Subject: Software Engineering — ***Time:* 3 *hrs***

Candidates are required to give their answers in their own words as far as practicable. The figures in the marg

Attempt **Any Eight** questions.

1. Differentiate between program and software. Explain in brief about major characteristics of software. [4+6]
2. Why we use model for development of software? Give a brief account on prototype model with it's advantage over waterfall model. [2+8]
3. List out the responsibilities of a software project manager. Explain different metrics for project size estimation. [4+6]
4. What do you mean by requirement engineering? Describe about the characteristics of SRS. [3+7]
5. Define modularity. Differentiate between coupling and cohesion with example. [3+7]
6. What is a metric? Why we use metric in software project? List out the quality factors of good software. [3+3+4]
7. Why we use testing in soft ware? Elaborate the level of testing with example. [5+5]
8. Elaborate on the concept of software reliability. Explain about reverse engineering with its advantage. [5+5]
9. Write Short Notes on. **(Any Two)** [2x5=10]

   a) Risk Management
   b) Measures, metrics and measurement
   c) Token court
   d) Strategy of software design.

Good Luck!

Council for Technical Education and Vocational Training

Office of the Controller of Examinations

Sanothimi, Bhaktapur

Regular/ Back 2075 Shrawan / Bhadra

Program: Diploma in Computer Engineering **Full Marks:80**

Year/ Part: II/II **Pass Marks: 32**

Subject: Software Engineering **Time: 3 hrs.**

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt Any Eight Questions.

1. What do you mean by software engineering? What are the characteristics of good software? Explain. [10]
2. What is the role of management in software engineering? Define product and process. [4+6]
3. Explain prototyping model and spiral model in brief [5+5]
4. Describe cost estimation. Define COCOMO I and COCOMO II in detail. [2+8]
5. What are the symbols used in DFD? Define E-R diagram with any example. [5+5]
6. What do you mean by Capability Maturity Model? Describe its levels. [2+8]
7. Explain about the levels of testing. [10]
8. Explain about reverse engineering and re-engineering. [5+5]
9. What do you mean by configuration management? Describe various types of documentation. [5+5]
10. **Write short notes on (Any Two)** [5x2]
    a) Types of information system
    b) SDLC
    c) Debugging & its technique

Good Luck !

Council for Technical Education and Vocational Training

Office of the Controller of Examinations

Sanothimi, Bhaktapur

Regular/Back Exam-2074, Shrawan/Bhadra

Program: **Diploma in Information Technology/ Computer Engineering** **Full Mark:80**

Year/Part: **II/II** **Pass Mark:32**

Subject: **Software Engineering** ***Time: 3 hrs.***

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt ANY EIGHT Questions.

1. What is software? Explain about 3P and 4P model. [2+8=10]
2. Explain prototyping model. Write down the characteristics of a good SRS. [5+5=10]
3. What are SDLC models? Why do we need them? Explain about RAD model. [2+2+6=10]
4. What are the steps for project planning? Explain COCOMO in brief. [2+8=10]
5. Explain bottom-up and top-down approach strategy of software design. [10]
6. What is software metric and how can it be measured? Explain about defect density and inspection rate. [5+5=10]
7. Explain about the SEI CMM. [10]
8. Explain about the levels of testing. [10]
9. What is software maintenance and why is it performed? Explain about reverse engineering. [5+5=10]

Good Luck!

Council for Technical Education and Vocational Training

Office of the Controller of Examinations

Sanothimi, Bhaktapur

Regular/Back Exam-2073 Bhadra/Ashwin

Program: Diploma in Information Technology/Computer Engineering — **Full Mark: 80.**

Year/Part: II/II (New course) — **Pass Mark: 32.**

Subject: Software Engineering — ***Time: 3 hrs.***

Candidates are required to give their answers in their own words as far as practicable. The figures in the mar

Attempt Any Eight Questions.

1. Differentiate between program and software. Explain the types of software in brief. Also, define milestones and deliverables. [2+6+2=10]
2. What is SDLC? Explain prototyping model with its advantages and disadvantages. [2+8=10]
3. What is SRS? Explain its goals and characteristics [3+2+5=10]
4. Describe cost estimation Explain about COCOMO I and COCOMO II. [3+7=10]
5. Explain about the strategies of design. [10]
6. What is software metrics and why do we use it? How can software metrics be classified? Explain. [2+4+4=10]
7. Explain in brief about the Capability Maturity Model (CMM). [10]
8. What is software testing? Explain the types of testing strategies. [2+8=10]
9. Explain about reverse engineering and re-engineering. [6+3=10]
10. Write short notes on (Any Two): [5x2=10]
    a) Debugging
    b) Risk management
    c) Requirement elicitation
    d) Modularity

Good Luck!

Council for Technical Education and Vocational Training

Office of the Controller of Examinations

Sanothimi, Bhaktapur

Regular/Back Exam-2072, Bhadra/Ashwin

Program: Diploma in IT/Computer Engg. (New Course)

Year/Part: II/II | **Full Marks: 80**

Subject: Software Engineering | **Pass Marks: 32**

Time: 3 hrs.

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt Any Eight questions.

1. Why do we need software development life cycle? Explain prototyping model with its advantages and disadvantages. [10]

2. What is milestones? Define product and process. [10]

3. What is SRS? Explain along with its characteristics. [10]

4. Explain COCOMO I and COCOMO II. [10]

5. Explain the different strategies of software design. [10]

6. Explain in detail about CMM. [10]

7. What are the different levels of testing? Explain in brief. [10]

8. Explain reverse engineering and re-engineering. [10]

9. Write short notes on: **(Any Two)** [2x5=10]

   a) ER diagram

   b) Cohesion and coupling

   c) Water fall model.

Council for Technical Education and Vocational Training

Office of the Controller of Examinations

Sanothimi, Bhaktapur

Regular/Back Exam Bhadra/Ashin, 2070

Program: Diploma in Computer/IT Engineering

Year/Part: II /II **NEW COURSE**

Full Marks: 80

Pass Marks: 32

Subject: Software Engineering

Time: 3 hrs.

Candidates are required to as far as practicable. The marks.

Attempt Any Eight questions.

1. What is software engineering? State software process in brief. How can you say a software in a good software? **10**
2. Describe modern approach of system analysis and design with necessary bock diagram and its advantages over traditional approach. **10**
3. Write down the type of SDLC models. Briefly describe about prototyping model of SDLC with block diagram. **10**
4. Discuss about scheduling of the project. Who is responsible for scheduling? Explain cocomo model for project estimation. **10**
5. What is data flow diagram (DFD)? Write the characteristics of SRS (Software requirement specification). **10**
6. How modularity plays vital role in software design and development? Describe software design strategy (i.e. top down/bottom up and hybrid design strategy). **10**
7. What do you mean by software testing? Briefly describe structural testing of software. **10**
8. "Software maintenance is very important and it costs high". Justify it. What is reverse engineering? **10**
9. Write short notes on: **(Any Two)** **2x5**
   a) Capability maturity Model (CMM)
   b) Software reengineering
   c) Debugging and its techniques.

The End