

SE 2018

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**SLIATE**

**SRI LANKA INSTITUTE OF ADVANCED TECHNOLOGICAL EDUCATION**

(Established in the Ministry of Higher Education, vide in Act No. 29 of 1995)

**Higher National Diploma in Information Technology**

**Second Year, First Semester Examination – 2018**

**HNDIT2312-Principles of Software Engineering**

**Instructions for Candidates:**

Answer Only **Four** questions

All questions carry equal marks.

No. of questions : 05

No. of pages : 02

Time : **Two hours**

**Q1.**

- ✓ i. Define the term “Software Engineering”. (03 marks)
  - ✓ ii. What are the differences between Software engineering and the system engineering? (04 marks)
  - ✓ iii. What are the two types of Software products .Name them and explain. (04 marks)
  - ✓ iv. List out the six (06) Software Product Attributes. (06 marks)
  - ✓ v. Briefly explain four (04) characteristics of a software (08 marks)
- (Total 25 Marks)**

**Q2.**

- ✓ i. List three (03) process models which provide a good visibility. (03 marks)
  - ✓ ii. Briefly explain why user requirements should be written using natural language. (04 marks)
  - ✓ iii. Explain briefly coupling and cohesion in modular design. (04 marks)
  - ✓ iv. Explain the use of coupling and cohesion in effective modular design. (06 marks)
  - ✓ v. List four (04) differences of functional and non-functional requirements of a system. (08 marks)
- (Total 25 Marks)**

**Q3.**

- ✓ i. Write three(03) advantages of software architecture (03 marks)
  - ✓ ii. Give any four(04) architectural patterns (04 marks)
  - ✓ iii. List four (04) stages in testing process. (04 marks)
  - ✓ iv. Explain the difference between Process quality and Product quality. (06 marks)
  - ✓ v. Describe the difference between verification and validation in software checking process. (08 marks)
- (Total 25 Marks)**

Q4.

- ✓ i. Briefly explain what is UML? (03 marks)
- ✓ ii. Draw and name four(04) symbols in DFD Diagram (04 marks)
- ✓ iii. When drawing DFD, you have to follow some rules and tips, Write four(04) of them (04 Marks)
- ✓ iv. What is Use case Diagram? Name four (04) components in a Use case Diagram (06 marks)
- ✓ v. Describe the four (04) best Practices for Designing an Interface (08 marks)

(Total 25 Marks)

Q5.

- ✓ i. What is Project management? (03 marks)
- ✓ ii. Describe the importance of change management in software maintenance. (04 marks)
- ✓ iii. Explain the followings. (04 marks)
  - a. Release management
  - b. Configuration management planning
- ✓ iv. Use below given table

Activity	Dependencies	Duration
A	-	5
B	-	3
C	A, B	2
D	C	4
E	C	3
F	D	3
G	E	2
H	F, G	2
I	H	3
J	I	5

- a. Draw a network diagram (08 Marks)
- b. Find critical path and minimum completion time of project (04 marks)
- c. If task "E" is delayed three (03) Days, what will happen to the critical path of the project? (02 marks)

(Total 25 Marks)