Mark Scored:

KATHMANDU UNIVERSITY
End Semester Examination [C]
May/June, 2019

Level : B. E./ B. Sc.
Year : IV
Course : COMP 421
Semester: I

Exam Roll No. :
Time: 30 mins.
F. M. : 10

Registration No.:
Date 30 MAY 2019

SECTION "A"
[20 Q.× 0.5= 10 marks]

Encircle the most appropriate answer.

1. What are the examples of Emergent System Property?
   a. performance, throughput, latencies
   b. deadline, outdated, prototype
   c. requirement specification, configuration management system, system safety
   d. model view controller, design pattern, framework

2. Which one of the software quality is not observable via execution?
   a. performance b. reliability c. security d. modifiability

3. What is an architectural pattern?
   a. a description of the component and connector types involved in the style
   b. a description of only component involved in the style
   c. a description of only connector types involved in the style
   d. a description of the component and connector types not involved in the style

4. What is the role of view in MVC?
   a. present processing b. present output
   c. present input d. present storage

5. Which architectural pattern is suitable for expert system?
   a. Broker Architecture b. Blackboard Architecture
   c. Layer Architecture d. OO Architecture

6. What is logical view in Software Architecture?
   a. It is a subset of the Design Model which presents architecturally significant design elements
   b. It is not a subset of the Design Model which presents architecturally significant design elements
   c. It is a subset of the Design Model which presents only design elements
   d. It is a subset of the Design Model which presents only modules

7. What are the three kinds of models prescribed by the Model Driven Architecture?
   a. Computation Independent Models, Platform Independent Models and Platform Specific Models
   b. Platform Specific Models, Re-use Models, and Component Models
   c. Service-Oriented Models, Computational Models, and Re-engineering Models
   d. Service-Oriented Models, Re-use Models, Platform Specific Models

8. What is PSM in the figure 1.?
   a. Platform Specific Model.
   b. Permanent Specific Model.
   c. Permanent Support Model.
   d. Platform Support Model

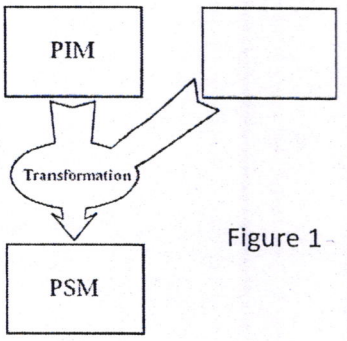

Figure 1

9. What is OGSA stand for?
   a. Open Grid Services Architecture
   b. Open Grid Support Architecture
   c. Open Grid Software Architecture
   d. Open Grid Self Architecture

10. What is C2 in SMART version?
   a. Class to Community
   b. Customer to Customer
   c. Client to Control
   d. Command and Control

11. What is the figure 2?
   a. Interpreter
   b. SMART Architecture
   c. MVC
   d. CORBA

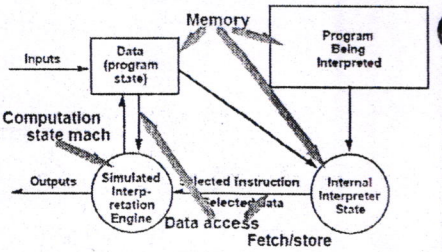

Figure 2

12. What is the KWIC problem?
   a. Key Words in Context
   b. Key Write up in Context
   c. Kind Words in Common
   d. Key Words in Conditions

13. What is the role of Broker in CORBA?
   a. Initiator  b. Mediator  c. Receiver  d. Communicator

14. What do you understand by Software Architecture Tactics?
   a. It is a transformation of software only but no system architecture that improves its response with respect to a particular measure.
   b. It is a transformation of a software or system architecture that relates its response with respect to a particular measure.
   c. It is a transformation of a software or system architecture that improves its response with respect to a particular case.
   d. It is a transformation of a software or system architecture that improves its response with respect to a particular measure.

15. Which model is shown in figure 3?
   a. DOS Model.
   b. UNIX Model
   c. Android Model.
   d. OO Model.

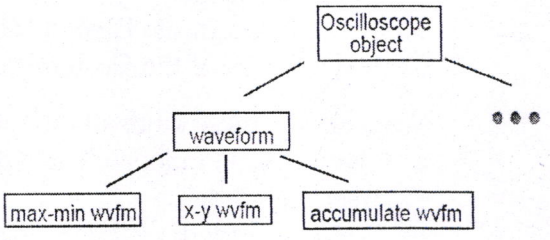

Figure 3

16. What is Modifiability?
    a. A quality attribute of the software architecture that relates to "the cost of change and refers to the ease with which a software system can accommodate changes"
    b. A quality attribute of the software system that relates to "the cost of change and refers to the ease with which a software system can accommodate changes"
    c. A quality attribute of the software architecture that relates to "the cost of update and refers to the ease with which a software system can accommodate changes"
    d. A quality attribute of the software architecture that does not relate to "the cost of change and refers to the ease with which a software system can accommodate changes"

17. Which one of the following is not true?
    a. Coupling is reduced when the relationships among elements not in the same module are minimized.
    b. Coupling is not reduced when the relationships among elements not in the same module are minimized.
    c. Coupling is reduced when the relationships among elements in the same module are minimized.
    d. Coupling is reduced when the relationships among different architectures not in the same module are minimized.

18. What is/are the thing(s) you can reuse?
    a. functions b. components c. architecture d. All of the mentioned

19. What is REST?
    a. Representational State Transfer
    b. Representational System Transfer
    c. Representational Sub Module Testing
    d. Reuse State Transfer

20. What is DCOM?
    a. Distributed Component Object Model
    b. Distributed Computer of Management
    c. Distributed Component of Model
    d. Dependable Computer Operational Model

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SECTION "B"
[6 Q × 4 = 24 marks]

Attempt *ANY SIX* questions.

1. Why do we need architectural pattern in Software Development?

2. When and how the Blackboard architecture is used? Explain with examples.

3. What is Denial of Service (DoS)? Why do we think that we need to consider DoS while discussing Software Architecture?

4. How can you make software dependable with the potential of Software Architecture?

5. What is SMART in Software Architecture?

6. What is the role of controller in MVC?

7. How can you achieve the reliability with Software Architecture?

SECTION "C"
[2 Q × 8 = 16 marks]

Attempt any two questions

8. Explain the types of Software Architecture with examples.

9. If you are given to develop AI based system, which architecture do you follow and how and why? Justify them.

10. What are the different issues of Security in Software Architecture? Explain them.

# KATHMANDU UNIVERSITY

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May 22, 2019

## NOTICE

End-Semester Compartmental Examinations of B.E.\B.Sc.\B.Pharm.\B.Tech.\B.Arch. students will be held according to the following schedule.

| Date | Day | Courses |
|---|---|---|
| May 30, 2019 | Thursday | MATH 101, MATH 111, MATH 105, EEEG 202, BIOT 302, COMP 342, PHAR 301, PHAR 303, CHEG 302, MEEG 315, GEOM 316, CIEG 304, EPEG 302, ENVE 309, COMP 421, CIEG 401, CIEG 402 |
| May 31, 2019 | Friday | ENGT 101, CHEM 207, EEEG 213, MEEG 213, MATH 201, MATH 205, PHAR 204, CIEG 204, ARCH 204, MEPP 412, MEPP 430, COMP 484, COMP 486, ENVS 415, MGTS 403, GEOM 402, PHAR 408 |
| June 2, 2019 | Sunday | PHYS 101, ARCH 101, MCSC 201, EEEG 207, PHYS 202, CIEG 203, GEOM 205, BIOT 204, COMP 315, MGTS 301, COMP 317, PHYS 302, COMP 302, BIOT 401, BIOT 410 |
| June 3 2019 | Monday | MATH 207, BIOT 203, ENVS 201, PHAR 203, PHAR 404, COMP 472, COMP 478, ENVS 404, EPEG 413, CIEG 405, PHAR 401 |
| June 4, 2019 | Tuesday | COMP 103, COMP 101, PHYS 201, STAT 201, PHYS 203, MATH 322, COEG 304, INAN 301, CHEG 303, EPEG 422, BIOT 403 |
| June 5, 2019 | Wednesday | EEEG 204, CIEG 201, BIOT 202, ENVS 212, MEEG 217, COMP 307, COMP 314, CIEG 303, ETEG 402, MGTS 402, PHAR 406 |
| June 6, 2019 | Thursday | ENGG 111, BIOL 101, COMP 202, MATH 208, PHYS 206, PHAR 201, ENVS 207, GEOM 317, PHAR 304, MEEG 328, MEEG 301, COMP 401, COMP 407, GEOM 411, PHYS 404 |
| June 7, 2019 | Friday | EEEG 211, MEEG 216, BIOT 205, MATH 206, MATH 204, CIEG 202, MEEG 219, EEEG 313, CIEG 305, CIEG 406, ENVS 431, PHAR 402, PHYS 405 |
| June 9, 2019 | Sunday | CHEM 101, CHEM 201, ENVE 204, MEEG 218, EEEG 314, COEG 401 |

Examination Time : 11.00 A.M. to 2.00 P.M.
Center : Kathmandu University, Dhulikhel.

Prof. Panna Thapa, Ph. D.
Controller of Examinations