

# M.Sc. I.T. 2015 Sem-III.

31395

PRACHITGAD - III (CBCS - 2015 CORUSE): WINTER - 2016  
SUBJECT: SOFTWARE ARCHITECTURE & DESIGN

Day: Saturday  
Date: 10-12-2016

Time: 10:00AM TO 1:00 PM.  
Max. Marks: 60

N.B.:

- 1) Attempt any **SIX** full questions.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw neat and labelled diagrams **WHEREVER** necessary.

- 
- Q.1 Explain various characteristics of Good software architecture in detail. Enlist (10)  
various principles for designing the software architecture.
- Q.2 What are Web Services? Explain various advantages of Web Services. (10)
- Q.3 Explain various categories of Architectural structures in detail. (10)
- Q.4 What is XML? Explain the solution scenario provided by XML for EAI by (10)  
taking suitable example.
- Q.5 What is Hadoop? Explain the concept of distributed architecture and solution (10)  
provided by Hadoop, acknowledging real time problem solving.
- Q.6 What is service centric Architecture? Explain Enterprise web architecture in (10)  
detail.
- Q.7 Explain 'Database Oriented Middleware' and 'Transactional Middleware' in (10)  
detail.
- Q.8 Explain any **TWO** of the following: (10)
- a) TIBCO
  - b) MVC
  - c) n-tier architecture
  - d) Domain specific patterns

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31396

PRACHITGAD – III (2015 COURSE) (CBCS): WINTER – 2016  
SUBJECT : SOFTWARE TESTING

Day : Wednesday  
Date : 14-12-2016

Time : 10:00 AM TO 1:00 P.M.  
Max. Marks : 60

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**N.B.:**

- 1) Attempt ANY SIX questions.
  - 2) Figures to the right indicate FULL marks.
- 

- Q.1 Explain 'Integration testing'. What are the various methods involved in Integration testing? [10]
- Q.2 What is 'Bug Life Cycle'? Explain with neat diagram. [10]
- Q.3 Explain 'V – Model' with suitable diagram. [10]
- Q.4 What is 'Cyclomatic Complexity'? Explain with proper example. [10]
- Q.5 Explain Software testing life cycle in detail with diagram. [10]
- Q.6 What is Black box testing? What are the different ways of doing black box testing? [10]
- Q.7 Write down the test cases for calculator. [10]
- Q.8 a) What is the difference between Verification and Validation? [05]
- b) What is Alpha Testing and Beta Testing? [05]

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31396

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Day : Wednesday  
Date : 14-12-2016

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31397

PRACHITGAD – III (CBCS) (2015 COURSE) : WINTER – 2016  
SUBJECT : CYBER SECURITY

Day : Friday  
Date : 16-12-2016

Time : 10:00AM-TO 1:00 P.M.  
Max. Marks : 60

N.B.

- 1) Attempt any **SIX** questions out of **EIGHT**.
- 2) Figures to the right indicate **FULL** marks.

- 
- Q.1 a) Explain the various technologies currently used by IDS for detecting an intrusion. (05)
- b) List the tasks performed by firewalls. (05)
- Q.2 a) What is a VPN? How is it provided over a public network? (05)
- b) How does SSL provide security over the Internet? Compare SSL with TLS. (05)
- Q.3 a) Define phishing. What steps can a user take to minimize vulnerability to phishing attacks? (05)
- b) Distinguish between message confidentiality and authentication. (05)
- Q.4 a) What do you understand by DMZ? Draw a diagram showing deployment of DMZ using firewalls. (06)
- b) Distinguish between virus, worm and Trojan Horse. (04)
- Q.5 a) Explain the integrity and confidentiality aspects of network security. (06)
- b) Explain hashing and message digests with examples. (04)
- Q.6 What is meant by "Ethical Hacking?" Describe using an example. List and describe any two tools used for ethical hacking. (10)
- Q.7 Explain the following aspects of secure application development: (10)
- a) Web application security
  - b) Software security awareness
- Q.8 Write short notes on **ANY TWO** of the following: (10)
- a) Denial of Service attack
  - b) ARP and DNS poisoning
  - c) Penetration Testing

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31397

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31399

PRACHITGAD – III (CBCS) (2015 COURSE) : WINTER – 2016  
SUBJECT : DATA WAREHOUSING & DATA MINING

Day : Tuesday  
Date : 20-12-2016

Time : 10:00 AM TO 1:00 P.M.  
Max. Marks : 60

N.B.

- 1) Answer any FIVE questions out of SEVEN questions.
- 2) All questions carry EQUAL marks.

- Q.1 Suppose that a data warehouse consists of the three dimensions time, doctor and patient and the two measures count and charge, where charge is the fee that a doctor charges a patient for a visit.
- i) Enumerate three classes of schemas that are popularly used for modeling data warehouses.
  - ii) Draw a schema diagram for the above data warehouse using one of the schema classes.
  - iii) Starting with the base cuboid (day, doctor, patient) what specific OLAP operations should be performed in order to list the total fee collected by each doctor in 2004?
  - iv) To obtain the same list, write an SQL query assuming the data is stored in a relational database with the schema fee (day, month, year, doctor, hospital, patient, count, charge).
- Q.2 Explain data warehouse architecture with diagram.
- Q.3 Suppose your task as a software engineering at big university is to design a data mining system to examine their university course database, which contains the following information : the name, address and status (e.g. undergraduate or graduate) of each student, the courses taken, and their cumulative grade point average (GPA). Describe the architecture you would choose. What is the purpose of each component of this architecture?
- Q.4 What is clustering? Explain any two clustering algorithm.
- Q.5 What is an OLAP? What are the different operations can be performed on OLAP?
- Q.6 What is a data mart? What are the difference between data warehouse and the data mart? Explain with a neat diagram.
- Q.7 a) What is view materialization for a data warehouse?  
b) List and explain the various problems and open issues in a data warehouse.

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