

University of Mumbai
Jamnalal Bajaj Institute of Management Studies

MIM - II Year (Part Time Systems) Second Semester
Networking and Communication

Date: 18 APRIL 2013

Marks: 60

Duration: 2 hours

Note:

1. Attempt any Three Questions. Each question carries 20 marks.

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1. What is Network Address Translation (NAT) and what is its role in a network?
What does 'Integrated Services Digital Network' mean to business?
Describe any four technical capabilities of using DNS convention in establishing a business network across the country that can help the organization move up its credit ratings? (Credit rating agencies such as ET, CRISIL, Experian, or similar that can influence the organization's position in the market space).
2. Write two advantages and two disadvantages of ISDN network services.
Bring your own device (BYOD) policy permits the use of A Mac 'Laptop', A 'Tablet' supporting WIFI but not having phone within it and A 'Mobile' to senior personnel within the organization. Please enlist as an IT Manager two advantages and two serious risk of using them.
Please provide list of controls that you may want to recommend ensuring these risks are mitigated.
3. Describe 'Session Layer' of the OSI Model with respect to its purpose, role of at least three protocols within it.
What is 'Virtualization' and how it is same or different from 'Cloud Technologies'?
Write two similarities and two dissimilarities between WIFI and WIMAX technologies.
List two applications where these technologies can be used.
4. Explain at least three transmission media each for wired and wireless with suitable examples.
Describe five differences between 3G and 4G technologies.
Describe with suitable diagram VSAT technologies.
Explain briefly the DTH Technology and describe at least five day-to-day IT operations that need to be managed.

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JAMNALAL BAJAJ INSTITUTE OF MANAGEMENT STUDIES
Data Management and Systems Software

MIM - 4th semester

Duration: 3 hours

Total Marks: 100

Notes: 1) Question 1 is compulsory and carries 25 marks
2) Attempt any 5 questions from 2 to 10. Each question carries 15 marks.

Q1: Write short notes on any 5 of the following:

- a) ER Diagram
- b) Database Schema (Physical, Conceptual, External)
- c) Online Transaction Processing (OLTP)
- d) Online Application Processing (OLAP)
- e) Centralized Processing
- f) Decentralized Processing
- g) Distributed Processing
- h) Mobile Operating Systems
- i) Google Android Vs Apple iOS

Q2: Explain the four characteristics of Datawarehousing with respect to (a) subject oriented (b) integrated (c) time variant, and (d) non-volatile.

Q3: Describe in details the traditional three major database models with suitable examples. What is ODBMS? How is it similar to ORDBMS?

Q4: How does Data Partitioning (both vertical and horizontal) provide data granularity? What is the advantage of creating a granular database for a typical retail enterprise or an airline company?

Q5: What are virtual machines? Give two advantages and disadvantages of having a virtual machine. Explain or describe Java Virtual Machine.

Q6: How does a web application work? Explain with suitable diagram how a single tier and multi-tier application work? What is Phase Commit? How does "roll back / roll forward" and Commit work?

Q7: Explain each of the following terms with suitable examples: (a) multi-processing (b) multi-tasking (c) multi-threading and (d) multi-programming.

Q8: What is an Operating System? Name major components of an operating system. Explain briefly role of any two components of an operating system.

Q9: What are the major Operating Systems for the mobile phones and tablets? Compare these operating systems.

Q10: What are native mobile apps? How are native mobile apps different than HTML5 apps? Explain the difference between Gmail app and Gmail site viewed from a mobile browser.

University of Mumbai

JAMNALAL BAJAJ INSTITUTE OF MANAGEMENT STUDIES,
SOFTWARE PROJECT MANAGEMENT AND IT RESOURCES MANAGEMENT
MIM II SEMESTER II

20TH APRIL 2013

Time 3 hrs

Marks: 100

- Note: 1 Question one is compulsory
2 Each question carries 20 Marks
3 Attempt any four questions out of remaining six

1. What are the various stages and documents required for effective project management? Discuss why is monitoring & Controlling important in project management?
2. What is Information Technology (IT) Asset Management? Explain different techniques used for Software estimation. Describe in brief different capital budgeting methods with example.
3. Explain Business Systems Planning (BSP) and Nolan's Stages of IT Growth model methodologies to carry out strategic information planning. Briefly explain in the four stage model of IT planning
4. What are the Skills required by Project Manager for Successful Project Execution? Discuss the importance of Scope Definition and the Consequences of scope Creep while project execution?
5. What is disaster management? What is disaster recovery plan? Explain in brief the Steps involved in disaster recovery plan & steps to avoid disasters?
6. Explain in brief with technology of leading for sustainable change with business example. Discuss How to Develop an IT Change Management Program?
7. Discuss in Brief Parameter and Application of CMM, IEEE and ISO standards? Describe steps to implement CMM, IEEE, ISO standards.

15.4.13

JAMNALAL BAJAJ INSTITUTE OF MANAGEMENT STUDIES

UNIVERSITY OF MUMBAI

MIM SECOND YEAR SECOND SEMESTER

SUBJECT: STRUCTURED LANGUAGES

DATE: 15-4-13

ALLOWED : 3 HOURS

MARKS : 100

TOTAL TIME

Instructions

1. Attempt any 5 questions from question 1 to 7.
2. Question 1 to 7 are 10 marks each.
3. Question 8 is compulsory. Attempt any 10 short notes out of the given options.
4. Use appropriate examples in all questions.

Questions

1.
 - a. What is a constructor? (3)
 - b. What is the purpose of a default constructor? (2)
 - c. Differentiate constructors and methods (Differentiate in points) (5)
2.
 - a. What is JDBC? What are the steps to connect to a database in java? (5)
 - b. What is the difference between JDK, JRE and JVM? (3)
 - c. Java is 'write once and run anywhere'. Explain. (2)
3.
 - a. Why is multiple inheritance not supported in java. Explain with example. (4)
 - b. Explain the various access specifiers. (private, public, protected and default) (4)
 - c. What is a URL? What are the various parts of a URL. (2)
4.
 - a. Explain Java Byte Stream, Character Stream and Buffered Stream with the classes used in each case for input and output. Give usage examples for each case. (10)

5. (5)
- a. Explain any five methods available in the String class. (5)
 - b. Explain any five methods available in the URL class of java. (5)
6. (5)
- a. Explain try, catch and finally blocks in exception handling. (5)
 - b. Explain exception propagation. (5)
7. (5)
- a. Explain Multithreading. (5)
 - b. Explain synchronization. (5)

8. Write short notes on the following (any 10)

(5 X 10 = 50)

- a. Polymorphism
- b. Encapsulation
- c. Inheritance
- d. Abstraction
- e. Applet
- f. Deadlock
- g. Garbage collection
- h. Heap and Stack
- i. super in java
- j. Arrays and their use
- k. Standard Streams
- l. Method Overloading
- m. Method Overriding
- n. Checked and Unchecked Exceptions

JAMNALAL INSTITUTE OF MANAGEMENT STUDIES
Semester End Examination

MIM II

SEMESTER II

WEB BASED TECHNOLOGIES
M.Marks 100 Marks

Duration 3 hrs

16th April, 2013

**Please read the questions carefully before answering.
All Questions are compulsory.**

Q I: Compare the Web versions from 1.0 to 3.0 and trace the evolution with suitable examples. Discuss the characteristics of the Web and its purpose (20 Marks)

Q II. Explain the difference between www and the internet. Discuss the impact the two make on commercial and social lives (20 Marks)

Q III. Discuss the following concepts briefly with examples. (30 Marks)

- a. Data On Cloud
- b. Web based business models
- c. IP V6

QIV. Describe process of setting up a website in Detail – along with the Technology stack. (30 marks)

DMSS

1. 3 major database models , advantages & disadvantages
2. . Distinguish between :
 - a. OODBMS
 - b. ODBMS
 - c. ORDBMS
3. What is OS, components , explain in brief roles of the components (6-8)***
4. Normalisation, explain diff forms 1-3
5. Explain 4 characteristics of Data warehousing **
 - a. Subject oriented
 - b. Integrated
 - c. Time variant
 - d. Non volatile
6. Explain data warehouse architecture wrt source , (ETL ,repository & presentation) layers
7. What are virtual machines? adv & disadvantages, explain JVM.
8. Data partitioning (vertical & horizontal) , how does it provide data granularity. Adv , disadv , & how it can benefit in an industry like (retail / airline)
9. Multi (processing , tasking, threading, programming)***
10. What are the OS for mobile phones & tablets & compare them.
11. What are native mobile apps, Diff between gmail app & gmail site on mobile browser.
12. What is client – server architecture
13. Short notes : Device driver (system software) ,Utility software , time sharing system **
14. Diff :
 - a. Batch processing & real time processing
 - b. Application software Vs system software
15. What is SQL, list 3 operator & functions used for SQL statements and explain with examples
16. Diff between data warehouse & data mart, data mining, Explain the term ETL used in creation of data warehouse
17. How does a web application work? Explain with suitable diagram how a single tier and multi tier application work? What is two phase commit? How does rollback, roll forward and commit work?

Short Notes **

18. Indexing, explain any 2 types. (explain sorting)
19. Role of DBA & DA
20. Explain DDL & DML
21. OLTP & OLAP
22. Mobile OS
23. Android Vs IOS
24. Centralized, decentralized & distributed processing *
25. Database schema , ER Diagram
26. OS : process mgnt , file mgt, device mgt, memory mgt & IO mgt,

WBT

1. Web based business models , revenue generation models
2. Social issues with advent of internet era.
3. Issues in Convergence
4. Issues in implementing an internet / web application *
5. Security Measures:
 - a. Public / private key cryptographic techniques
 - b. Role of firewalls in internet security
 - c. Ethical hacking, 5 antivirus packages
 - d. Importance of internet security , aspects of comm addressed by internet security
6. E-procurement application with workflow, discuss adv of internet in this application (business benefits)
7. Ecommerce (24 X 7 open , explain with examples)
8. Internet has revolutionized the way business is transacted. Cover productivity , customer reach, lead time , and other parameters for a specific industry.
9. Data on cloud
10. IP v4, v6
11. Difference between Web & internet
12. Web versions 1 to 3 & evolution with examples
13. Class questions:
 - a. Role of DMZ in security
 - b. Upcoming web tech
 - c. Diff between compiled & interpreted code
 - d. Erp is dead , long live ems
 - e. How will web tech replace advertising
 - f. How will ecommerce model sustain without advertising
 - g. What's the objective of an e-commerce site
 - h. Testing methodologies (order the sequence of execution)

Short notes :

1. RSS feeds,
2. Name 10 packages (crm , erp, scm) , 10 web program languages, 10 web/ appl servers
3. IP address, smtp , pop3, imap, multi tier arch in context of webtech
4. WML, XML, dhtml, PHP, VOIP

- compare class & object with eg-? → compare C++ / java
- diff type of func declaration? how will you declare a func outside / inside class.
- feature of java
- what is structure? eg-. struct diff from array, diff bet struct & class.
- obj oriented paradigm / feature of obj oriented programming eg.

Structured languages

1. Constructor, default constructor, diff constructor & methods → array, declare, size, Anden checking supported in java.
2. JDBC, steps to connect to db
3. Difference between JDK, JRE, JVM → dynamic method dispatch, eg.
4. Why is JAVA Write once and run anywhere? → obj allocated on STACK in C program.
5. Multiple inheritance, not supported in java
6. URL, parts of URL in JAVA
7. Java byte stream, character stream, buffered stream with classes used for input and output
8. 5 methods in string class (java) → declaration, definition, usage, eg
9. 5 methods in URL class of java
10. Try, catch, exception handling, exception propagation, types of exception compare them.
11. Multithreading & synchronization (java) → Byte code allows java to solve both security & portability prob
12. Diff: Pointer var and reference variable → medium C++ for extending meaning (adv)
13. Friend function. C++ ✓
14. Explain usage of interface and diff with class
15. Abstract methods, adv/disadv difference between abstract class & final class → Keyword final with eg -
16. Explain exception propagation with example.
17. What is the difference between checked and unchecked exception? → passing parameter by value, passing parameter by reference.
18. Explain exception handling with example?
19. Explain try, catch and finally blocks in exception handling.
20. What is the difference between String and StringBuffer object.
21. What is Multithreading? → why C named.
22. What is synchronization? what is a synchronized block? → Java is not enhanced HTML → mean structure in structure → java earlier name oak → rules for forming identifi in C → class / obj
23. Short notes
 - a. Polymorphism
 - b. Encapsulation
 - c. Inheritance
 - d. Abstraction
 - e. Applet
 - f. Deadlock
 - g. Garbage collection
 - h. Heap & stack *
 - i. Super in java
 - j. Arrays and their use
 - k. Standard streams
 - l. Method overloading and overriding
 - m. Structure, diff (class, struct & array)
 - n. Final in java

NC

- 1) Integrated Services Digital Network. Adv & Disadvantage
- 2) Network Address Translation (Defn & Role)
- 3) VSAT . What does it mean to business, How does it work, Applications, Alternatives
- 4) 2G/3G/4G Mobile Networks
- 5) 7 layers of OSI Model. Explain the protocols used for each layer *****
- 6) DTH technology
- 7) Wired & Wireless Communication. Explain 3/4 Transmission media.
Wired>>> Ethernet,Token Ring,FDDI, ATM
Wireless >>>>Bluetooth, WIFI, WiMax VSAT
- 8) Network Topology & Network Architecture.(Star,Bus, Ring,Mesh)LAN, MAN,WAN,CAN
- 9) Network Mgmt w.r.t (performance, fault , config, security & Quality of Service).
- 10) BYOD – case study type, advantages & risks
- 11) VOIP, ATM, FDDI, OSPF
- 12) VPNs – short notes
- 13) Packet & circuit switching

SPM

- a. Polymorphism
- b. Encapsulation
- c. Inheritance
- d. Abstraction
- e. Adapter
- f. Decorator
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hierarchy & Relation of
data / info
Assem
Comp
Resource / deadlock

Single / multi
Batch / online

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22. Mobile OS
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24. Centralized, decentralized & distributed processing * ✓
25. Database schema , ER Diagram ✓
26. OS : process mgnt , file mgt, device mgt, memory mgt & IO mgt,

File system & DBMS .
DS/DD
Indexing / sorting
data modelling
stored procedure & trigger
concurrency control & locks
MIS & DSS
primary / foreign / second

device driver
device driver
utility SW
know manager
decision support system

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PPP, DHCP, STP, UDP, NetBEUI, ISDN, DNS

protocol used in LAN/WAN

NC

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- 9) Network Mgmt w.r.t (performance, fault, config, security & Quality of Service).
- 10) BYOD - case study type, advantages & risks.
- 11) VOIP, ATM, FDDI, OSPF, DHCP.
- 12) VPNs - short notes. Voice over IP
- 13) Packet & circuit switching. TCP/IP, FDDI, OSPF

→ subnet mask gateway

→ diff external IP add + valid IP.

- 3 fundamental element of data comm
- task performed by data system utilization, interfacing, signal generation, synchronization, exchange management, error detection & correction & flow control
- computer network and network protocol.
- hub, repeater, bridge, router, switch
- network interface cards with application in industry.
- Client-server, net-centric & web-centric architecture with eg's.
- Proprietary tech / open tech. / analog, digital
- noise & attenuation of signal & measure to reduce.
- various bodies that form standards for networking & comm.
- media used for LAN
- MAC address struct
- IP addressing scheme, class A/B/C network
- subnet mask & gateway, using subnet mask
- combine more than one class C network
- term comm diff from data comm, process telecomm.
- client-server computing
- adv/disadv Internet comm.

→ split a class C network

S.W

- ethernet, data warehousing, network ops system, comp of client-server app
- ISDN, electronic data interchange, trans mode & direction, emergency tech in telecomm.
- collision CSMA/CD & ways to minimize
- Routing & Switching