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NO. OF PRINTED PAGES: 2

SARDAR PATEL UNIVERSITY

MASTER OF COMPUTER APPLICATIONS

SEMESTER - IV

COURSE MCA - 401 (UNIX and Windows Programming)

Monday April 23rd, 2007

Time: 11:00 A.M. to 2:00 P.M.

Max. Marks: 70

Note : Write answers of both sections in separate answer-books.

SECTION-I

Q-1 Answer the following question in detail.

[20]

- a. What are the steps for converting a dialog box into a window?
- b. Differentiate between the following:
 - o Output Mode and Mapping Mode
 - o AfxMessageBox and MessageBox
- c. What is a DLL? What is the need for it? Explain the use of DllMain().
- d. Discuss the Windows programming environment.
- e. How do Windows and your program interact?

Q-2 Answer the following question in brief.

[10]

- a. What are MFC global functions?
- b. What is synchronization?
- c. Explain any one windows message with example.
- d. Define: Resource and Viewport
- e. Distinguish between Dynamic linking and static linking.

Q-3 Do as directed.

[5]

- a. List any four keyboard messages.
- b. List any four MFC classes.
- c. Write the full forms of ATL and DIB.
- d. List windows 2000 thread synchronization objects.
- e. List any four windows data types.

SECTION-II

Q-4 a. Answer the following in brief.

[5]

- i. State any three salient features of UNIX Operating System.
- ii. If there are three soft links for a file then the number of inodes used for the file would be _____.
- iii. What are the usual permission settings for a file and a directory?
- iv. What does the environmental variable \$PATH store?
- v. What is the difference between:
`cat > file1` and `touch file1`

b. Draw and discuss the block diagram of the UNIX system kernel. [4]

c. Write commands to perform the following operations in the vi editor:

- i. Exit vi without saving
- ii. Delete next 8 lines
- iii. Display line numbers before each line

[3]

- Q-5 a. What is the use of following commands? [3]
i. pwd ii. ls iii. paste
- b. Give commands to perform the following functions: [5]
i. Display all the users currently logged in (in the order of username) and store the output in the file UserList.txt.
ii. Display a list of all the processes running in the system with parent process id.
iii. List all the filenames in the current directory that do not begin with an underscore.
iv. Stop the execution of the process with id 12345.
v. Display all the lines that are similar in file1 and file2 in toggled case.
- c. Discuss the working of any four UNIX system calls. [4]

- Q-6 a. Write a shell script that would create a command "chperm". The syntax of the command should be: [5]

chperm [0-7][0-7][0-7] filename(s)

The command should change the permission of all the files passed as argument to the mentioned permission set.

In case the file does not exist it must be created and its permission must be set accordingly.

In case the passed filename is a directory then the permission should be applied to all its content files.

In case no filename or no permission set is passed an appropriate error message should be shown to user.

Mention appropriate filename for the shell script and command to set its appropriate permission.

- b. For a given data file Employee.dat: [4]

EmpID	EmpName	EmpJDT	EmpBasic
E1	Mr. R. S. Agrawal	12/03/1999	10000
E2	Mr. S. D. Sharma	14/12/2005	4500

How will you perform the following operations using sed or awk?

- a) List name of employees with Surname followed by initials.

(Eg. Agrawal R. S.)

- b) Substitute the salutation Mr. by Shree.

- c) Generate a report in following form:

ID EmpName Basic

E1 Mr. R. S. Agrawal 10000

E2 Mr. S. D. Sharma 4500

14500

- c. What is the "here document"? Discuss it uses. [2]

(3) [93]

Total number of printed pages: 2

SARDAR PATEL UNIVERSITY
MASTER OF COMPUTER APPLICATIONS
SEMESTER - IV
COURSE MCA - 401 (UNIX and Windows Programming)
Tuesday April 21st, 2009

Time : 3:00 P.M. to 6:00 P.M.

Max. Marks : 70

Note : Write answers of both sections in separate answer-books.

SECTION-I

- Q-1 a. Explain the file subsystem of the UNIX kernel. [4]
b. Explain the various ways of accessing all the command line arguments in a UNIX shell script. [4]
c. Explain all the different ways of changing file permissions in UNIX. [4]
Q-2 Answer the following questions in brief (ANY SIX): [12]
i. Explain the purpose of any four common directories under UNIX.
ii. Explain how can we use other "drives" and partitions under UNIX.
iii. List the main features of the C shell.
iv. Describe the syntax of the case structure in UNIX.
v. Explain how to test whether the given argument is a file or directory and whether the current user has read, write and execute permission on it using the test command (i.e. if statement).
vi. Differentiate between grep, egrep and fgrep.
vii. Explain the uses of the find command in UNIX with examples.
Q-3 a. Write a UNIX shell script to read a text file qpaper containing a question paper, validate it as described below and display the question paper in a format similar to this paper. The file qpaper contains the fields section number, question number, sub question number (may only be a,b,c as in Q1 in this paper and cannot be as in Q2 here), question text (maximum 60 characters, will fit in a single line) and marks delimited by the , (comma) character. You must verify that the ordering of section number, question number and sub question number is correct (no number is missing) and that each question has marks between 10 and 15 and that the total marks of each section are exactly 35. The data in the file may not be in any particular order, so you must arrange the data first. [6]

- OR -

- a. Write a C program to copy one file to another using UNIX system calls. The file names should be passed on the command line. [6]
b. Write a short note on arrays in awk. [3]
c. Describe the common options of the sed commands with examples. [2]

SECTION-II

- Q-4 Answer ANY FIVE of the following: [20]
i. Explain how does your program interact with the windows operating system.
ii. What is window repaint problem? Describe the necessary steps to solve it.
iii. Explain accelerator keys programming.
iv. What is thread synchronization? Explain any three synchronization objects.
v. What is DLL? Differentiate between static linking and dynamic linking.
vi. Explain the security descriptor. Explain how security works in windows operating system?

[06]

Q-5 Explain ANY THREE of the following:

- i. BitBlt()
- ii. WM_CREATE
- iii. SetTextColor
- iv. MoveToEx()
- v. WM_TIMER

[09]

Q-6 Answer ANY THREE of the following:

- i. Explain CWinApp and CFrameWnd classes.
- ii. Explain GetDlgItem() and GetDlgItemText()
- iii. Explain the API responsible to show message box along with syntax and options.
- iv. Explain usage of BM_GETCHECK and BM_SETCHECK with example.
- v. Explain sprintf() and TextOut().

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SARDAR PATEL UNIVERSITY

MASTER OF COMPUTER APPLICATIONS (MCA)

SEMESTER - IV

PS04CMCA04 (SOFTWARE ENGINEERING)

Time : 11:00 a.m. to 2:00 p.m.

Marks : 70

24TH NOVEMBER, 2016

Note : Answers of all the questions (including multiple choice questions) should be written in the provided answer book only.

Q-1 Pick up the most appropriate answer from the given alternatives and write in your answer book. (8)

- (i) _____ is an extremely critical and time-consuming activity.
[A] Requirement Analysis [B] Software Design
[C] Software Testing [D] Software Coding
- (ii) The goal of Software Engineering is
[A] To product high quality software product at high cost
[B] To product low quality software product at high cost
[C] To product low quality software product at low cost
[D] To product high quality software product at low cost
- (iii) COCOMO stands for
[A] COnsumed COst MOdel. [B] COnstructive COst MOdel.
[C] COmmon COnrol MOdel. [D] COMposition COst MOdel.
- (iv) In SE, _____ means an exposure to the chance of injury or loss.
[A] Defect [B] Risk [C] Failure [D] None of these
- (v) WBS stands for
[A] Work Breakdown System [B] Work Breakdown Structure
[C] Weather Broadcasting System [D] None of these
- (vi) XP stands for
[A] Xtreme Programming [B] eXtreme Programming
[C] eXtensible Programming. [D] None of these
- (vii) _____ means probability of failure-free operation of that product for a given time duration.
[A] Efficiency [B] Reliability [C] Maintenance [D] None of these
- (viii) In SE, _____ is the degree of interdependence between software modules-
[A] cohesion [B] modularity [C] coupling [D] None of these

Q-2 Attempt the following: (ANY SEVEN)

- i. What is Software? Write down general characteristics of a software product.
- ii. Define – SRS? Write down the benefits of using SRS.
- iii. What is Software Project Planning? Why is it required?
- iv. Write down the full-forms of : RAD, WBS, SQAP, SCM.

(Contd..) (14)

- v. Differentiate : Verification and Validation.
- vi. What do you mean by Testing? Why is it required?
- vii. Define the term 'Maintenance'. List down different types of software maintenance.
- viii. Define : Error and Fault.
- ix. What is Coding? Write down the purpose of coding.
- x. Differentiate : Black-box testing and White-box testing.

(6)

(6)

- Q-3 (a) What is Software Engineering? Explain waterfall model.
(b) Explain various components of an SRS.

(6)

OR

- (b) What is requirement? Explain common characteristics of an SRS.

(6)

- Q-4 (a) Explain ETVX approach and WBS.

(6)

- (b) Explain various challenges for Software Engineering.

(6)

OR

- (b) Write a note on Requirement Process.

(6)

- Q-5 (a) Write a note on Project Monitoring Plans.

(6)

- (b) Write a note on Defect Injection and Removal Cycle.

(6)

OR

- (b) Write down various UML diagrams and explain any two of them with an example.

(6)

- Q-6 (a) Define the term 'Modular system'. Explain the concept of Coupling with its type.

(6)

- (b) Explain in details about Regression Testing and Acceptance Testing.

(6)

OR

- (b) Explain – Software Reuse and Software Re-engineering.

(6)

SARDAR PATEL UNIVERSITY
MASTER OF COMPUTER APPLICATIONS
SEMESTER - IV
COURSE PS02/CMCA07 (THE LINUX OPERATING SYSTEM)
Monday April 3rd 2017

Time: 11:00 am to 2:00 pm

Max. Marks: 70

Q-1 Choose the most appropriate option for each question:

1. Which file editor is part of the vi/vim full screen editor? [8]
A) ex B) ext
C) ext3 D) ext4
2. Which of the following is *not* a valid I/O redirection operator?
A) << B) >>
C) 2<< D) 2>>
3. Which of the following is used in a case statement in the shell scripting language to prevent the flow of control from falling through the next case?
A) *) B) ;;
C) break D) break;
4. Which sed action inserts line(s) after the current line?
A) i B) a
C) s D) None of these
5. What is the value of the execute permission in the numeric syntax of the chmod command?
A) 1 B) 2
C) 3 D) 4
6. Which option of the grep command causes it to output those lines in the input that *do not* have a match of the pattern?
A) -v B) !
C) -V D) -n
7. What is the full form of the GPL?
A) GNU Public License B) Global Public License
C) General Public License D) None of these
8. What is the index into the table of open files (UFDT) called?
A) File Designator B) File Pointer
C) File Denoter D) File Descriptor

Q-2 Answer the following questions (Any Seven):

[14]

1. Define a shell. Which file contains information about the user's default shell?
2. Explain how different commands can be built from an operator like *d* or *y* in vi.
3. What does the shell variable \$? represent? Give a practical example of its use.
4. What do the ps and comm commands do?
5. Explain the use of the pushd and popd commands.
6. Explain the uses of the /dev/null and /dev/zero devices.

7. Describe the use of the -n option and the s command of sed with examples. [6]
8. Describe the use of the FS, NF, NR and \$0 variables in awk.
9. Explain the structure of the /etc/group file.

Q-3 Answer the following questions: [6]

A. Write a short note on the history of the Linux operating system.
B. Write a short note on proprietary and free software.

OR

- B. Write a short note on I/O redirection in UNIX. [6]

Q-4 Answer the following questions: [6]

- A. Write a short note on command line processing in the shell.
B. Explain the chmod command in detail with either numeric or symbolic syntax.

OR

- B. Assume an unordered CSV file emp.csv with the following fields:
empno,name,deptno,designation,salary
Write a shell script to print a department wise report. For each department; the department number should be in the header, followed by details of employees in that department with the total number of employees and total salary for that department as the footer.

Q-5 Answer the following questions: [6]

- A. Write a short note on regular expressions.
B. Describe in brief all the options of the grep command.

OR

- B. Explain any three UNIX system calls. [6]

Q-6 Answer the following questions: [6]

- A. Explain the syntax of awk scripts. Also explain the syntax for using awk arrays.
B. Explain the internals of the UNIX file subsystem.

OR

- B. Explain *any one* of the commands in detail: a) date b) find [6]

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7. Describe the use of the -n option and the s command of sed with examples. [6]
8. Describe the use of the FS, NF, NR and \$0 variables in awk. [6]
9. Explain the structure of the /etc/group file. [6]

Q-3 Answer the following questions:

- A. Write a short note on the history of the Linux operating system. [6]
B. Write a short note on proprietary and free software. [6]

OR

- B. Write a short note on I/O redirection in UNIX. [6]

Q-4 Answer the following questions:

- A. Write a short note on command line processing in the shell. [6]
B. Explain the chmod command in detail with either numeric or symbolic syntax. [6]

OR

- B. Assume an unordered CSV file emp.csv with the following fields: [6]

cnpno,name,deptno,designation,salary

Write a shell script to print a department wise report. For each department; the department number should be in the header, followed by details of employees in that department with the total number of employees and total salary for that department as the footer.

Q-5 Answer the following questions:

- A. Write a short note on regular expressions. [6]
B. Describe in brief all the options of the grep command. [6]

OR

- B. Explain any three UNIX system calls. [6]

Q-6 Answer the following questions:

- A. Explain the syntax of awk scripts. Also explain the syntax for using awk arrays. [6]
B. Explain the internals of the UNIX file subsystem. [6]

OR

- B. Explain *any one* of the commands in detail: a) date b) find [6]

RRR

Sardar Patel University
Master of Computer Application
SEMESTER – IV Examination
PS04CMCA04: Software Engineering
Monday, 10th April, 2017

Time: 11:00 AM to 02:00 PM

Max Marks: 70
[8]

Q.3 Answer the following questions (Any seven):

- Q.2** Answer the following questions:

 - i. Explain: Software does not wear out.
 - ii. List characteristics of good SRS.
 - iii. What is brook's law?
 - iv. What are possible team structures for software development?
 - v. What is corrective maintenance?
 - vi. What do you mean by software usability?
 - vii. What is work product?
 - viii. List various levels of testing.
 - ix. Differentiate: high level and low level design.

- W +
B B
FIB test
OR of sel
views to reduce the cost of software maintenance.
- WH of pr.
be a
of N
- [6]
[6]
- OR Test repl.
test cal al cl
sally
- [6]
- Q.3**
- A Explain waterfall model for software development. [6]
- B Define the term "Software Engineering". Explain different types of maintenance. Share your views to reduce the cost of software maintenance. [6]
- Q.4**
- A List characteristics of good quality SRS. Explain any two of them by giving suitable examples. [6]
- B Write use case narratives for a library management system. Consider the functionalities of (i) Issue a book and (ii) Return a book [6]
- OR
- B Explain different types of team structures for software development. [6]
- Q.5**
- A What is Cohesion? Explain different levels of cohesion. [6]
- B Explain the steps of methodology for producing Object Oriented Design. [6]
- OR
- B Draw use case diagrams for a library management system. Consider the functionalities of (i) Issue a book and (ii) Return a book [6]
- Q.6**
- A What is coding? Explain any five common coding errors. [6]
- B What is software testing? What is the importance of testing? Explain different levels of testing. [6]
- OR
- B Write fundamental theorem of testing. Explain the mechanism of test oracle. [6]

Seat No. _____

Total number of printed pages: 2

SARDAR PATEL UNIVERSITY
MASTER OF COMPUTER APPLICATIONS
SEMESTER - V
COURSE PS05EMCA03 (Application Development for the Android Platform)
Wednesday November 15th 2017

Time: 10:00 am to 1:00 pm

Max. Marks: 70

Q-1 Choose the most appropriate option for each question:

[8]

1. What does a .dex file contain?
A) Dalvik virtual machine
B) Dalvik bytecode
C) Dalvik source code
D) None of these.
2. Android applications have little control over their -
A) Code
B) Data
C) Life cycle
D) Foreground Activity.
3. Which of the following is *not* an Android layout?
A) Vertical layout.
B) Relative layout
C) Table layout
D) None of these
4. Which of the following usually represents an action to be performed?
A) Broadcast receiver
B) Content provider
C) Main activity
D) Intent.
5. Which of the following resource folder will be used on a tablet in landscape mode?
A) layout-land-large
B) large-land-layout
C) layout-large-land
D) land-large-layout
6. Which of the following corresponds to a where clause in a query?
A) Selection.
B) Projection
C) Protection
D) Cursor
7. Which of the following is *not* a built-in action in the Intent class?
A) ACTION_VIEW
B) ACTION_SHOW
C) ACTION_EDIT
D) ACTION_DIAL
8. Which of the following class is used to perform operations in the background?
A) HTTPRequest
B) HTTPGetRequest
C) AsyncGetTask.
D) AsyncTask.

[14]

Q-2 Answer the following questions (Any Seven):

1. Which two events are specifically designed for saving and restoring activity state?
2. Write the sequence of events that fire in the current activity when another full-screen activity comes in front of the current activity and then finishes (and the current activity is not killed).
3. What are the advantages of using resources?
4. Describe the Android permissions related to obtaining the current location of the device.
5. What are the two ways of capturing an image using the camera?
6. List the motion and orientation sensors commonly available in mobile devices.
7. List animation techniques in Android.

page 1 of 2

8. Write a short code snippet for sending a text message.
9. Give any two examples of using `getSystemService()`.

Q-3 Answer the following questions:

[6]

- A. Explain the Android activity life cycle with the help of a figure. [6]
B. Write the steps for creating a new Android Studio project. Write a skeleton program for an Android activity.

OR

- B. Write a short note on using menus in an Android application including necessary event handlers. [6]

Q-4 Answer the following questions:

[6]

- A. Explain different types of resources used in Android along with the advantages of their use. [6]
B. Write a short note on intents.

OR

[6]

- B. Write short notes on content providers and broadcast receivers.

Q-5 Answer the following questions:

[6]

- A. Explain database access in Android. [6]
B. Write the code snippets to play audio and video in an Android application.

OR

[6]

- B. Write a program to make a GET request to a web server in the background.

Q-6 Answer the following questions:

[6]

- A. List the common contents of the Android manifest file. [6]
B. Explain how to test camera access, location access, telephony applications and SMS sending in the emulator.

OR

[6]

- B. Explain the use of a ListView with the data stored in an ArrayList. Describe the resources that need to be created.

SARDAR PATEL UNIVERSITY
MASTER OF COMPUTER APPLICATIONS
SEMESTER - IV
COURSE PS04CMCA07 The Linux Operating System

Time: 11:00 am to 2:00 pm

Monday 9th April 2018

Max. Marks: 70

[8]

Q-1 Choose the most appropriate option for each question:

1. Which of the following is *not* a valid I/O redirection operator?
A) 1<<
C) >>
B) 1>>
D) <<
2. What is the full form of sed?
A) string editor
C) stream editor
B) spring editor
D) None of these
3. What should be the permission digits in the chmod command, if the owner is to be given all permissions, the group only read permission, and others no permission?
A) 610
C) 640
B) 740
D) 710
4. Which vi command can be used to delete 5 lines starting from the current line?
A) 5d
C) d5
B) dd5
D) 5dd
5. Who is the founder of the Free Software Foundation?
A) Ken Thompson
C) Richard Stallman
B) Andrew Tanenbaum
D) Linus Torvalds
6. Which command can be used to display the first line of a file?
A) cat file | head
C) cat file | head | tail -n 1
B) cat file | head -n 1
D) None of these
7. Which system call is used to create a child process?
A) fork
C) creat
B) create
D) cproc
8. Which file is used to store the encrypted password of a user on modern Linux systems?
A) /etc/passwd
C) /etc/password
B) /etc/sudo
D) /etc/shadow

[14]

Q-2 Answer the following questions (Any Seven):

1. Explain the -l and -h options of the ls command.
2. Describe the two uses of the mv command with one example each.
3. Write the full forms of GNU and Linux.
4. Which command is used to get information about the currently logged-in user? Which command is used to get a list of currently running processes?
5. Explain command substitution using '...' (backquotes) or \$(...) with an example.
6. Explain the use of the cut command with any two options.

7. What is a system call? What does the open() system call return? [6]
8. Describe the use of the NF and \$0 variables in awk. [6]
9. Explain in brief the syntax of the tr command. Show how it can be used to convert lower case input to upper case. [6]

Q-3

- A. Write a short note on important features of Unix and Linux.
B. Describe the standard file system hierarchy of the Unix-like systems. Explain important directories in it.

OR

- B. Explain the expr command in detail.

[6]
[6]

Q-4

- A. Explain the syntax of the for loop and the while loop with examples.
B. Write a short note on I/O redirection.

OR

- B. Write a short note on regular expressions.

[6]
[6]

Q-5

- A. Write important features of awk. Describe field separation in awk.
B. Write a short note on grep.

OR

- B. Describe the sed filter taking suitable examples.

[6]
[6]

Q-6

- A. Explain how various tests can be performed on strings and numeric values using the test command.
B. Write the full syntax of the if control structure. Give suitable examples.

OR

- B. Explain in brief any two system calls. Also explain any two configuration files in /etc.

[6]
[6]

ANSWER

106/A-20

SEAT No. _____

Total No. of pages : 2

SARDAR PATEL UNIVERSITY
M.C.A.(IV Semester) Examination
PS04CMCA07 The Linux Operating System
Thursday, 1st November, 2018

Total Marks : 70

Time : 2:00 PM to 5:00 PM

1. Select most appropriate option for each of the following questions : 8

- (i) Which vi command can be used to delete 7 lines starting from the current line ?
(A) 7d (B) 7dd (C) d7 (D) None of these.
- (ii) Which of the following is not a valid I/O redirection operator ?
(A) 1<< (B) !>> (C) >> (D) None of these.
- (iii) Which system call is used to create a child process ?
(A) create (B) crprocess (C) fork (D) None of these.
- (iv) Which command can be used to display the last line of a file ?
(A) cat file | tail (B) cat file | tail -n 1 (C) cat file | tail | tail -1
(D) None of these.
- (v) Which of the following is used in a case statement in the shell scripting language to define the default case ?
(A) *) (B) default (C) default : (D) None of these.
- (vi) The system variable that shows the sequence in which various directories will be searched to locate a command is _____
(A) PWD (B) PATH (C) HOME (D) None of these.
- (vii) Which file is used to store the encrypted password of a user on modern Linux systems ?
(A) /etc/password (B) /etc/shadow (C) /etc/passwd
(D) None of these.
- (viii) What is the full form of sed ?
(A) stream editor (B) spring editor (C) string editor
(D) None of these.

2. Answer the following questions in brief (ANY SEVEN) : 14

- (i) Define a shell. List any two examples of shells.
- (ii) Define a filter. Give at least two examples of filters.
- (iii) Explain the -l option of the ls command.
- (iv) Which commands are used to copy and delete a file ?
- (v) What is a system call ? What does the open() system call return ?
- (vi) Explain the use of the wc command with any two options.

1

(P.T.O.)

- (vii) What is the use of the /etc and /dev directories in the standard UNIX file system hierarchy ?
(viii) Which command is used to get information about the currently logged-in users ? Which command is used to get information about the currently running processes ?
(ix) Which vi command can be used to yank 5 lines from the current line and paste them at a different place in the same file ?

3.(A) Write a short note on the **history of the Linux operating system.**

6

(B) Write a short note on the **if statement** taking suitable examples.

6

OR

(B) Write a short note on **I/O redirection.**

6

4.(A) Explain the syntax of the **for loop** and **while loop** with examples.

6

(B) Explain the **test command** with appropriate examples.

6

OR

(B) Explain the **expr command** in detail.

6

5.(A) Write a short note on various file permissions.

6

(B) Write a short note on **grep.**

6

OR

(B) Explain the following commands:

6

(i) sort (ii) cut

6.(A) Explain any two **system calls**. List any two **configuration files** in the /etc directory.

6

(B) Write the important features of the **awk command.**

6

OR

(B) Write the important features of the **sed command.**

6

— X —

(2)

Time : 11:00 AM to 02:00 PM

8

1. Select most appropriate option for each of the following questions :

- (i) Which of the following is a bottom-up parser ?
 (A) Shift-Reduce (B) Predictive parser (C) Recursive-Descent
 (D) None of these.
- (ii) If S is a start symbol, FOLLOW(S) always contains a/an
 (A) % (B) empty string (C) \$ (D) None of these.
- (iii) CFG stands for
 (A) Context Free Grammar (B) Context Free Game
 (C) Context File Grammar (D) None of these.
- (iv) Parsing table of which parser has two parts called *action* and *goto* ?
 (A) LR (B) Predictive (C) Operator precedence
 (D) None of these.
- (v) A sequence of characters having some collective meaning is called a
 (A) token (B) lexeme (C) pattern (D) None of these.
- (vi) A production of a grammar G with a dot at some position on right side is called
 (A) LR(0) item (B) sentential form (C) sentinel (D) None of these.
- (vii) Which of the following is not a cousin of a compiler ?
 (A) preprocessor (B) assembler (C) loader (D) None of these.
- (viii) The Thompson's algorithm is used to obtain an NFA from
 (A) a regular expression (B) a DFA (C) a CFG
 (D) None of these.
 The Thompson's algorithm is used to obtain an NFA from

14

2. Answer the following questions in brief :

- (i) Define a *DFA*.
- (ii) What are the main advantages of intermediate code generation ?
- (iii) Which functions are performed by a *syntax analyzer* ?
- (iv) Which phases are included in the *front-end and back-end* of a compiler ?
- (v) What is an *ambiguous grammar* ? Give an example.
- (vi) Define a *CFG*.

- (vii) What is *left factoring*? Give an illustration. 6
(viii) Which functions are performed by a *lexical analyzer*?
(ix) What is a left recursive grammar? Give an example.
- 3.(A) Draw a schematic diagram showing various *phases of a compiler*.
Briefly describe the functions performed by each phase of a compiler. 6
- OR
- (B) Explain the technique used for *left factoring*. 6
- 4.(A) Write a note on the *shift-reduce parsing technique*. 6
- (B) Construct an NFA for the following regular expression using the *Thompson's construction* method.
$$(bcc \mid a)^* cb$$
- OR
- (B) Distinguish between DFA and NFA taking suitable examples. 6
- 5.(A) Write a short note on usefulness of a *symbol table* in a compiler. 6
- (B) Show the model of a non-recursive *predictive parser*. Write the algorithm for non-recursive predictive parsing. 6
- OR
- (B) Explain the Thompson's method to obtain an NFA from a given regular expression. 6
- 6.(A) Explain how quadruples are useful for intermediate code generation. 6
- (B) Describe any two *loop optimization techniques*.
OR
(B) Write the *code generation* algorithm. 6

SARDAR PATEL UNIVERSITY
 M.C.A.(IV Semester) Examination
 PS04CMCA02 Compiler Design
 18th April, 2017.

Time : 11:00 AM to 2:00 PM

Total Marks : 70

1. Select most appropriate option for each of the following questions : 8

- (i) The subset construction method is used to obtain a DFA from
 - (A) a regular expression (B) an NFA (C) a CFG
 - (D) None of these.
- (ii) Dead code elimination technique is used in the _____ phase of a compiler.
 - (A) Lexical Analysis (B) Syntax Analysis
 - (C) Intermediate Code Generation (D) Code Optimization.
- (iii) Which of the following is a top-down parser ?
 - (A) LR parser (B) Operator precedence parser
 - (C) Recursive-Descent parser (D) None of these.
- (iv) Parsing table of which parser requires computation of the FIRST and FOLLOW functions ?
 - (A) LR (B) Predictive (C) Operator precedence
 - (D) None of these.
- (v) A rule describing a set of lexemes is called a
 - (A) token (B) sentential form (C) pattern (D) None of these.
- (vi) A language denoted by a regular expression is known as a
 - (A) regular set (B) regular definition
 - (C) regular equation (D) None of these.
- (vii) Epsilon-transitions are permitted in
 - (A) a DFA (B) an SFA (C) an NFA (D) None of these.
- (viii) Which of the following is used as a kind of intermediate representation?
 - (A) regular expression (B) infix notation
 - (C) three-address code (D) None of these.

2. Answer the following questions in brief (ANY SEVEN) : 14

- (i) Distinguish between a sentence and a sentential form.
- (ii) What are the main advantages of intermediate code generation ?
- (iii) What is the meaning of a token ? List different types of tokens.
- (iv) What is an operator grammar ? Give an example.
- (v) What is an ambiguous grammar ? Give an example.

- (vi) Explain the meaning of a *rightmost derivation* taking an example.
 (vii) What is *left factoring*? Give an illustration.
 (viii) Write the meaning of each symbol in LR(k).
 (ix) Distinguish between a pass and a phase of a compiler.

- 3.(A) What is a compiler? Draw the schematic diagram showing various phases of a compiler. Briefly describe the functions performed by each phase of a compiler. 6
- (B) Distinguish between a DFA and an NFA. 6
 OR
 (B) Describe the *two-buffer technique* for input buffering. Write the algorithm for advancing a forward pointer using sentinels. 6
- 4.(A) Construct an NFA for the following regular expression using the *Thompson's construction* method. 6

$$(a \mid bac)^* abc$$
- (B) Explain the technique to eliminate left recursion in a given grammar. 6
 OR
 (B) Write a short note on Shift-Reduce Parsers. 6
- 5.(A) Show the model of a non-recursive *predictive parser*. Write the algorithm for non-recursive predictive parsing. 6
- (B) Which information is entered into a *symbol table*? List the required capabilities of a symbol table. Explain how a symbol table can be implemented using a hash table. 6
 OR
 (B) Explain the *operator-precedence parsing* technique in brief, describing the method to delimit a handle of a right-sentential form. 6
- 6.(A) What is a *three-address code*? What are the different ways of implementing three-address statements? Explain any one in detail. 6
- (B) List the principal sources of optimization. Describe *any two code optimization techniques*. 6
 OR
 (B) Write the *code generation* algorithm. 6

50/16

SARDAR PATEL UNIVERSITY
 Master of Computer Applications (MCA)
 Semester – IV External Examinations
 PS04CMCA02 (Compiler Design)
 11th April, 2018 (Wednesday)

Max. Marks: 70

Time: 11:00 AM to 02:00 PM

[08]

Q-1 Choose most appropriate option for the following:

1. A _____ is a special character that cannot be part of the source program.
 - A. lexeme
 - B. sentinel
 - C. A and B both
 - D. None of these
2. _____ is the string obtained by removing zero or more leading symbols of string s.
 - A. Prefix of s
 - B. Suffix of s
 - C. Substring of s
 - D. None of these
3. A language denoted by a regular expression is known as a _____.
 - A. regular expression
 - B. regular set
 - C. regular equation
 - D. None of these
4. A grammar that produces more than one parse tree for some sentence is said to be _____.
 - A. non-ambiguous grammar
 - B. language grammar
 - C. ambiguous grammar
 - D. None of these
5. _____ is a grammar transformation that is useful for producing a grammar suitable for predictive parsing.
 - A. Left factoring
 - B. Right factoring
 - C. A and B both
 - D. None of these
6. Which of the following parsers is most powerful in performance?
 - A. SLR
 - B. Canonical LR
 - C. LALR
 - D. None of these
7. _____ productions are difficult to be handled by a top-down parser.
 - A. Left recursive
 - B. Right recursive
 - C. Non-recursive
 - D. None of these
8. _____ is the sign that indicates string with length zero.
 - A. \$
 - B. #
 - C. @
 - D. None of these

[14]

- Q-2 Write answers in short: (ANY SEVEN)
- a. What is compiler? Discuss all its possible outcomes.
 - b. Define: Regular Definition. Give an example.
 - c. Define: NFA.
 - d. Discuss role of a parser.
 - e. Define the functions FIRST and FOLLOW.
 - f. Differentiate between a sentence and a sentential form.
 - g. Define: Context-Free Grammar.
 - h. Define: Operator Grammar. Give an example.
 - i. What is Three-address code? Explain it with an example.

Q-3 A) List various phases of a compiler. Explain ANY FIVE of them in brief. [06]
B) List and explain various cousins of a compiler. [06]

OR

- B) List and explain symbol table management techniques. [06]

Q-4 A) Construct an NFA for the following regular expression using the [06]
Thompson's construction method:
 $(ab \mid bc \mid cd)^* abcd$

- B) Explain how lexical analysis can be performed using a buffer pair. [06]
Write an algorithm for advancing a forward pointer in this scheme.

OR

- B) Define: DFA. Discuss benefits of implementation of it over [06]
implementation of an NFA taking suitable example.

Q-5 A) Explain how to eliminate left recursion taking a suitable example. [06]
B) Define: Handle. What is handle pruning? Explain it taking suitable [06]
examples.

OR

- B) Write and explain an algorithm of operator precedence parsing. [06]

Q-6 A) Distinguish between *Quadruples*, *Triples* and *Indirect Triples* [06]
implementation schemes of three-address statements.
B) List various principal sources of code optimization. Explain ANY TWO [06]
of them in brief.

OR

- B) List various issues in the design of a code generator. Explain each of [06]
them in brief.

→ input to CG G XXXXX
→ target prog
→ M.M
→ Register allocation
→ Instruction selection
→ Evolution choice accordingly → loop optimizer
→ approach to C.G
→ copy propagation
→ dead code elimination
→ common subexpression
→ constant folding

SEAT No. _____

SARDAR PATEL UNIVERSITY
Master of Computer Applications (MCA)
Semester - IV External Examinations
PS04CMCA02 (Compiler Design)
22nd October, 2018 (Monday)

Time: 02:00 PM to 05:00 PM

Max. Marks: 70

Q-1 Choose most appropriate option for the following: [08]

1. _____ is a program that reads a program written in the source language and translates it into an equivalent target language.
 - A. interpreter
 - B. compiler
 - C. A and B both
 - D. None of these
2. _____ is the string obtained by deleting zero or more trailing symbols of string s.
 - A. Prefix of s
 - B. Suffix of s
 - C. Substring of s
 - D. None of these
3. A language denoted by a regular expression is known as a _____.
 - A. regular expression
 - B. regular definition
 - C. regular equation
 - D. None of these
4. A _____ that produces more than one parse tree for the same sentence is said to be ambiguous.
 - A. sentence
 - B. statement
 - C. grammar
 - D. None of these
5. _____ is a grammar transformation that is useful for producing a grammar suitable for predictive parsing.
 - A. Left factoring
 - B. Right factoring
 - C. A and B both
 - D. None of these
6. _____ is the sign that indicates string with length zero.
 - A. \$
 - B. €
 - C. @
 - D. None of these
7. _____ productions are difficult to be handled by a top-down parser.
 - A. Non-recursive
 - B. Right recursive
 - C. A and B both
 - D. None of these
8. _____ can be defined as sequence of characters in the source program.
 - A. Token
 - B. Pattern
 - C. Lexeme
 - D. None of these

(1)

(P.T.O.)

Q-2 Write answers in short: (ANY SEVEN)

- a. Discuss role of a lexical analyser.
- b. Define: Token. Give an example.
- c. Explain regular definition in brief.
- d. Discuss role of a parser.
- e. What is sentinel? Give an example.
- f. Define: sentence and sentential form
- g. Define: Operator Grammar. Give an example.
- h. What is handle pruning?
- i. What is Three-address code? Explain it with an example.

[1]

Q-3 A) List various phases of a compiler. Explain ANY FIVE of them in brief. [06]

B) Write a short note on compiler construction tools.

OR

[06]

B) List and explain various cousins of a compiler.

[06]

Q-4 A) Construct an NFA for the following regular expression using the Thompson's construction method:

$$ab (ab \mid bc)^* bc$$

[06]

B) Distinguish between NFA and DFA.

OR

[06]

B) Write and explain an algorithm for advancing a forward pointer in a buffer pair.

[06]

Q-5 A) Write and explain an algorithm of operator precedence parsing.

[06]

B) Write and explain an algorithm for elimination left recursion.

[06]

OR

[06]

B) Discuss model of nonrecursive predictive parser in detail.

[06]

Q-6 A) List various issues in the design of a code generator. Explain each of them in brief.

[06]

B) List various principal sources of code optimization. Explain ANY TWO of them in brief.

[06]

OR

[06]

B) Explain following implementation schemes of three-address statements: (i) Triples and (ii) Indirect Triples

—X—
②

Total No. of pages : 2

SARDAR PATEL UNIVERSITY
M.C.A.(IV Semester) Examination
PS04CMCA02 Compiler Design
21st November, 2015.

Total Marks : 70

Time : 11:00 AM to 2:00 PM

1. Select most appropriate option for each of the following questions : 8

- (i) The subset construction algorithm is used to obtain a DFA from
(A) a regular expression (B) an NFA (C) a CFG
(D) None of these.
- (ii) A sentence is a string of terminals derived from a
(A) start symbol (B) epsilon (C) \$ (D) None of these.
- (iii) Which of the following is a top-down parser ?
(A) Shift-Reduce (B) Predictive parser (C) LALR
(D) None of these.
- (iv) Parsing table of which parser has two parts called *action* and *goto* ?
(A) LR (B) Predictive (C) Operator precedence
(D) None of these.
- (v) A sequence of characters having a collective meaning is called a
(A) token (B) sentential form (C) pattern (D) None of these.
- (vi) CFG stands for
(A) Context Free Grammar (B) Context Free Graph
(C) Context File Grammar (D) None of these.
- (vii) Which of the following functions are not performed by preprocessors ?
(A) macro processing (B) file inclusion (C) Language extension
(D) None of these.
- (viii) Which of the following phases is optional in a compiler ?
(A) lexical analysis (B) syntax analysis (C) code optimization
(D) None of these.

2. Answer the following questions in brief (ANY SEVEN) : 14

- (i) List the *cousins of a compiler*.
- (ii) What are the main advantages of intermediate code generation ?
- (iii) What is the meaning of a *lexeme* ? Give examples.
- (iv) Which functions are performed by a *lexical analyzer* ?
- (v) What is an *ambiguous grammar* ? Give an example.
- (vi) Define a *regular expression*.
- (vii) What is *left factoring* ? Give an illustration.

- (viii) What is **left recursion**? Why should it be eliminated? 6
- (ix) Distinguish between a pass and a phase of a compiler.
- 3.(A) What is a **compiler**? Draw the schematic diagram showing various *phases of a compiler*. Briefly describe the functions performed by each phase of a compiler. 6
- (B) Define an **NFA**. Give any two examples of an **NFA**. Differentiate it from a **DFA**.
- OR
- (B) Describe the *new-buffer technique* for input buffering. Write the algorithm for advancing a forward pointer using sentinels. 6
- 4.(A) Construct an **NFA** for the following regular expression using the *Thompson's construction* method.
- $$(ab \mid bb)^* a$$
- (B) Write a short note on operator precedence parsing technique. 6
- OR
- (B) Describe the role of a lexical analyzer in a compiler. 6
- 5.(A) Show the model of a non-recursive *predictive parser*. Write the algorithm for non-recursive predictive parsing. 6
- (B) What is a *symbol table*? Which information is generally stored in a symbol table? Explain the *hashing scheme* for symbol table management. 6
- OR
- (B) Write a note on shift-reduce parsing technique. 6
- 6.(A) What is a *three-address code*? Distinguish between *quadruples* and *triples* taking a suitable example. 6
- (B) What is the advantage of *code optimization*? Describe any two code optimization techniques.
- OR
- (B) Write the *code generation* algorithm.
-

[62/63/A-56/A-57]

Seat No. _____

Total number of printed pages: 2

SARDAR PATEL UNIVERSITY
MASTER OF COMPUTER APPLICATIONS
SEMESTER - IV
COURSE PS04CMCA21 (The Linux Operating System)
PS04CMCA21 Thursday 4th April 2019

Time: 2:00 pm to 5:00 pm

Max. Marks: 70

[8]

Q-1 Choose the most appropriate option for each question:

1. _____ is the pioneer of Linux operating system.
A) Linus Tanenbaum B) Dennis Ritchie
C) Linus Torvalds D) Ken Thompson
2. Ubuntu Linux releases _____ new version(s) each year.
A) One B) Two
C) Three D) Four
3. _____ is home directory for root user.
A) /root B) /home
C) /etc D) /
4. _____ Directory is used to mount files on permanent basis at boot time.
A) /mount B) /drive
C) /conf D) /mnt
5. Which of the following can be used to access the value of the variable *count*?
A) \${count} B) \$(count)
C) count D) \${[count]}
6. Which options of the shell can be used to turn debugging off?
A) -xv B) -xd
C) +xd D) +xv
7. Which system call is commonly used to open a file in write mode?
A) open B) fopen
C) creat D) create
8. Which *awk* variable represents the total number of lines in the input?
A) NF B) NR
C) TNF D) TNR

Q-2 Answer the following questions (Any Seven):

[14]

1. List any four advantages of the Unix operating system.
2. List any four categories of free software.
3. Mention any two reasons for commercial organizations to take part in free software development.
4. Explain the syntax of the original *for* statement in the shell with an example.
5. Give an example of using *printf* in a shell script. What is the difference between the outputs of
echo "Hello World!" and *printf "Hello World!"*?
6. Explain any two options of the *tr* command.
7. Explain the syntax of the *read* command. Explain at least one option of *read*.

(5)

(FTG)

page 1 of 2

8. List any two commands that use the `-R` option to indicate recursive processing of the argument, including sub-directories, sub-sub-directories, etc.
 9. What is the use of the `/etc/fstab` file?

Q-3

- Q-3**

 - A. Discuss the pros and cons of the Linux operating system in detail.
 - B. Explain the vim editor in detail with its major commands and uses.

OR

- B** Write a detailed note on history of Linux operating system.

Q-4

- Q-4**

 - A. Explain with figures any three forms of I/O redirection.
 - B. Explain with examples the three ways of performing integer arithmetic in the shell.

OR

- B. Write a short note on the *expr* command.

0-5

- Q-5**

 - A. Describe any six options of the *grep* command.
 - B. Write a short note on the *sed* command.

OR

- B Explain the Linux system calls with at least three examples.

06

- Q-6**

 - Explain in detail the structure and architecture of the Linux operating system.
 - Write a detailed note on user management in Linux.

OR

- B.** Write a detailed note on user management OR
B. List and explain any three system configuration file of Linux with its structure and application.

—

- B.** List and explain any three system configuration file of Linux with its structure and application. [6]

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(G4/A-82)

UAT

Total No. of pages : 2

SARDAR PATEL UNIVERSITY
M.C.A.(IV Semester) Examination
PS04CMCA22 Compiler Design
8th April, 2019. Monday

Time : 2:00 PM to 5:00 PM

Total Marks : 70

1. Select most appropriate option for each of the following questions : 8

- (i) Epsilon-transitions are permitted in
(A) a DFA (B) a TFA (C) an NFA (D) None of these.
- (ii) A grammar that produces more than one parse trees for the same sentence is said to be _____.
(A) an ambiguous grammar (B) a left factored grammar
(C) a left recursive grammar (D) None of these.
- (iii) Which of the following is a top-down parser ?
(A) Handle pruning parser (B) Predictive parser
(C) Operator precedence parser (D) None of these.
- (iv) Parsing table of which parser contains two parts called Action and Goto ?
(A) LR (B) Predictive (C) Operator precedence (D) None of these.
- (v) If S is a start symbol of the given grammar, FOLLOW(S) always contains
(A) # (B) \$ (C) epsilon (D) None of these.
- (vi) A language denoted by a regular expression is known as a
(A) regular set (B) regular definition
(C) regular equation (D) None of these.
- (vii) Dead code elimination technique is used in the _____ phase of a compiler.
(A) Lexical Analysis (B) Syntax Analysis
(C) Intermediate Code Generation (D) Code Optimization.
- (viii) Which of the following is used as a kind of intermediate representation?
(A) regular expression (B) infix notation
(C) three-address code (D) None of these.

2. Answer the following questions in brief (ANY SEVEN) :

14

- (i) Define : a Context Free Grammar.
- (ii) What are the main advantages of intermediate code generation ?
- (iii) What is *left factoring* ? Give an illustration.
- (iv) List the cousins of a compiler.
- (v) Explain the role of a syntax analyzer.

(P.T.O.)

Page 1 of 2

- (vi) Explain the meaning of a *leftmost derivation* taking an example. 6
 (vii) Define a *regular expression*. Give at least two examples. 6
 (viii) Write the meaning of each symbol in LR(k). 6
 (ix) Distinguish between a *pass* and a *phase* of a compiler. 6
- 3.(A) What is a *compiler*? Draw a diagram showing various *phases of a compiler*. Explain the significance and the functions performed by each phase of a compiler in brief. 6
- (B) What is the role of a *lexical analyzer*? Describe the *two-buffer technique* for input buffering. Write the algorithm for advancing a forward pointer using sentinels. OR 6
- (B) Explain the technique to eliminate left recursion in a given grammar. 6
- 4.(A) Construct an NFA for the following regular expression using the *Thompson's construction* method. 6

$$(a \mid bb)^* ccc$$
- (B) Distinguish between a DFA and an NFA. 6
 OR
 (B) Explain : stack implementation of Shift-Reduce Parsers. 6
- 5.(A) Show the model of a non-recursive *predictive parser*. Write the algorithm for non-recursive predictive parsing. 6
- (B) Which information is entered into a *symbol table*? List the required capabilities of a symbol table. Explain how a symbol table can be implemented using a hash table. OR 6
- (B) Explain the *operator-precedence parsing* technique in brief, describing the method to delimit a handle of a right-sentential form. 6
- 6.(A) What is a *three-address code*? What are the different ways of implementing three-address statements? Explain any one in detail. 6
- (B) List the principal sources of optimization. Describe the *loop optimization technique* taking a suitable example. OR 6
- (B) List the *major issues* in the design of a *code generator*. Write the *code generation* algorithm. 6

[53/A-58] SEAT No. _____

No. of Printed Pages : 02

Sardar Patel University
Master of Computer Application
SEMESTER - IV Examination
PS04CMCA23: Software Engineering
Wednesday, 10th April, 2019

Time: 02:00 PM to 05:00 PM

Max Marks: 70

Q.1 Select the most appropriate answer for the following questions:

[8]

- i. The most important feature of spiral model is ____.
A) requirement analysis B) risk management
C) quality management D) None of these
- ii. Which of the following is NOT a component of ETVX?
A) Exit Criteria B) Test
C) Task D) Entry Criteria
- iii. ____ section of SRS is most useful for developers.
A) Introduction B) Overall Description
C) Specific Requirements D) External Interfaces
- iv. In COCOMO, projects are categorized into ____.
A) 5 types B) 4 types
C) 3 types D) 2 types
- v. ____ abstraction forms the basis for OOD.
A) Functional B) Data
C) Requirement D) Class
- vi. A ____ is a systematic approach to creating a design by applying a set of techniques and guidelines.
A) Design Methodology B) Design Model
C) Design Implementation D) None of these
- vii. Which of the following type of testing is impractical?
A) Alpha B) Beta
C) Exhaustive D) All of these
- viii. The type of software testing in which each module is tested along in an attempt to discover any errors in its code, is known as ____.
A) Integration testing B) Acceptance testing
C) Mutation testing D) Unit testing

[14]

Q.2 Answer the following questions (Any seven):

- i. Define the term 'Software Engineering' and state the goal of SE.
- ii. Define the term 'Software'. List out general characteristics of a software.
- iii. List characteristics of web applications.
- iv. List out various quality attributes of a software.
- v. Write the full-form of: OOA, WBS, UML, COCOMO.
- vi. What is state diagram? Give an example.
- vii. What is regression testing? Why is it required?
- viii. Differentiate: Black-box testing and White-box testing.

Page 1 of 2

(1)

(P.T.O.)

ix. What do you mean by 'Software Reuse'? Why is it useful?

Q.3

- A Explain prototyping model for software development with merits and demerits. [6]
B List desired characteristics of software process. Explain any two of them. [6]

OR

- B Explain - various challenges for Software Engineering. [6]

Q.4

- A Explain the desirable characteristics of an SRS. [6]
B Discuss Risk Management of a software project planning. [6]

OR

- B Explain (i) Q&P and (ii) V&V [6]

Q.5

- A Discuss the meaning of coupling with its types and factors affecting coupling. [6]
B Explain the steps of methodology for producing structured design. [6]

OR

- B What is UML? Explain (i) class diagram and (ii) sequence diagram by giving suitable examples. [6]

Q.6

- A What is coding process? Explain TDD [6]
B Explain the terms (i) Error (ii) Fault and (iii) Failure by giving suitable examples of each. [6]

OR

- B What do you mean by "Test Case"? Explain levels of testing. [6]

Page No. _____ Date _____



(2)

42/A-33

SEAT No. _____

No. of Printed Pages : 02

NO. OF PAGES : 2

SARDAR PATEL UNIVERSITY

MASTER OF COMPUTER APPLICATIONS (MCA)

SEMESTER - IV

PS04CMCA24 (WEB APPLICATION DEVELOPMENT TECHNOLOGY)

12TH APRIL, 2019, Friday

Time : 2:00 p.m. to 5:00 p.m.

Marks : 70

Note : Answers of all the questions (including multiple choice questions) should be written in the provided answer book only.

Q-1 Pick up the most appropriate answer from the given alternatives and write (8) in your answer book.

- (i) Which property of Page object's, determines if a Web page is being requested without data being submitted to server?
[A] IsCallback [B] IsReusable [C] IsValid [D] IsPostBack
- (ii) In ASP.NET, which one of the followings is a client-side statement management technique?
[A] Hidden Field [B] Session [C] Application [D] Profile
- (iii) Read the following two statements and then select most appropriate option from the given alternatives:
 - I. HotSpotMode is a valid method name in ASP.NET.
 - II. Execute is a valid method name in ASP.NET.
[A] Statement (I) is correct [B] Both statements are not correct
[C] Statement (II) is correct [D] Both statements are correct.
- (iv) You want to make a configuration setting change that will affect only the current Web application. Which file will you change?
[A] Global.asax [B] Web.config (root level)
[C] Both A and B [D] None of these.
- (v) _____ is a kind of looping structure in PHP used to access array elements only.
[A] for() [B] do...while() [C] while() [D] None of these
- (vi) _____ function in PHP used to define array variable in PHP.
[A] array() [B] file() [C] print_r() [D] None of these
- (vii) _____ is a PHP function used to encrypt data.
[A] sha1() [B] md5() [C] Both A and B [D] None of these
- (viii) _____ is a server-side scripting language.
[A] JavaScript [B] PHP [C] Both A and B [D] None of these

Q-2 Attempt the following: (ANY SEVEN) (14)

- i. What is ASP.NET? List down any four ASP.NET directives.
- ii. Differentiate : Authentication and Authorization.
- iii. Define the term 'Session' in the context of ASP.NET and state various Session state modes.

(1)

(P.T.O.)
(Contd..1/2)

- iv. What is jQuery? Give an example of jQuery.
- v. Write down the full-form of : CSS, IIS, ASP, XML.
- vi. List various types of operators in PHP. Explain each one in brief.
- vii. Distinguish between echo and die().
- viii. Explain about blogs in brief.
- ix. Explain PHP functions: (i) md5() and (ii) file()
- x. Write JavaScript code for validating input sequence of characters.

Q-3 (a) Explain ASP.NET page life cycle in detail. (6)
(b) Explain ImageMap, Radio Button and Check box controls with an example. (6)

OR

(b) Explain Wizard and Panel controls of ASP.NET. (6)

Q-4 (a) Discuss in detail use of ADO.NET in ASP.NET with example. (6)
(b) List names of ASP.NET validation controls along with their purpose and explain any two of them with an example. (6)

OR

(b) Explain Query string and Application state techniques of ASP.NET with an example. (6)

Q-5 (a) Define: Array in PHP. Discuss various types of array in PHP. (6)
(b) List and explain any three PHP file handling functions taking suitable examples. (6)

OR

(b) Explain following functions taking suitable examples: (6)
(i) mysqli_connect() and (ii) mysqli_query()

Q-6 (a) Explain sessions in PHP taking suitable examples. (6)
(b) Write a short note on cookies in PHP. (6)

OR

(b) Discuss JavaScript DOM taking suitable examples. (6)

—X—
②

SARDAR PATEL UNIVERSITY
Master of Computer Application
Semester – IV External Examinations
PS04EMCA21 – Advanced Java Programming
15th April, 2019, Monday

Max Marks: 70

Time: 02:00 p.m. to 05:00 p.m.

[8]

Q1. Choose the most appropriate option for each question.

- i. _____ method can be used to get complete list of all parameters in the current request.
 A) request.getParameter() B) request.getParameterNames()
 C) request.getParameterValues() D) None of these
- ii. _____ returns the port number on which the request was received.
 A) request.getServerPort() B) response.getServerPort()
 C) Header.getServerPort() D) None of these
- iii. _____ is used to forward to a servlet, JSP, HTML page, and so on, on the server.
 A) RequestDispatcher.send() B) ResponseDispatcher.forward()
 C) RequestDispatcher.redirect() D) RequestDispatcher.forward()
- iv. The dispatcher result type which is used if no other result type is specified is _____
 A) error B) input
 C) default D) success
- v. _____ object is used to create SessionFactory object in hibernate.
 A) Configuration B) Session
 C) Sessionfactory D) Transaction
- vi. _____ creates a new instance of Query for the given SQL query string.
 A) request.createSQLQuery B) response.createSQLQuery
 C) Session.createSQLQuery D) Session.createQuery
- vii. Which of the following bean stores data of a particular user for a single session?
 A) Stateful B) Stateless
 C) Message-driven beans D) None of these
- viii. Which of the following bean represents persistent data storage?
 A) Session beans B) Entity beans
 C) Message-driven beans D) None of these

[14]

Q2. Answer the following questions (Any Seven):

- a. Define the following: 1)JSP Scriptlet tags 2)JSP declaration tags
- b. List any four advantages of Servlet.
- c. List all the four possible values of scope attribute on JSP page.
- d. Explain struts.xml configuration file used in Struts 2.
- e. Explain Struts 2 validation framework.
- f. Write the example of delete clause of HQL for Hibernate 3.
- g. Explain component tag of Hibernate 3.
- h. Draw the life cycle of message-driven beans.
- i. Explain the decorator pattern in J2EE design pattern.

(P.T.O)

(1)

Page 1 of 2

- Q3. Answer the following questions:**
- How is exceptional handling managed in servlets? List and explain of request attributes that that an error-handling servlet can access to analyse the nature of error/exception. [6]
 - Explain different methods to set HTTP Status Code. Explain general structure of it. [6]
- OR
- Draw and explain MVC Framework in detail. [6]
- Q4. Answer the following questions:**
- Discuss different control tags available in Struts 2 framework. [6]
 - List different types of cookies. Explain cookies handling mechanism in servlets. [6]
- OR
- Explain Struts 2 <result> tags. Write the code snippet for explaining different values return as "result" in action classes. [6]
- Q5. Answer the following questions:**
- List and discuss the components of JPA architecture. [6]
 - Explain different components of Persistence Layer of Hibernate 3. [6]
- OR
- What is session bean? Discuss different types of session beans in detail by taking a suitable example of your choice. [6]
- Q6. Answer the following questions:**
- Explain any two Hibernate 3 objects in detail. [6]
 - create table ADDRESS (
 ADD_id INT NOT NULL auto_increment,
 HOUSE_NAME VARCHAR(20) default NULL,
 STREET_NAME VARCHAR(20) default NULL,
 CITY_NAME VARCHAR(20) default NULL,
 STATE_NAME VARCHAR(20) default NULL,
 COUNTRY_NAME VARCHAR(20) default NULL,
 PRIMARY KEY (ADD_id)
);
The above table is created in mysql database. Write the code snippet for the pojo object and hibernate mapping tag for the above table.
- OR
- What is a j2EE design pattern? Discuss composite entity pattern in detail. [6]

— X —
②

[37/A-19]
Seat No.

Total number of printed pages: 2

SARDAR PATEL UNIVERSITY
MASTER OF COMPUTER APPLICATIONS
SEMESTER - IV

PS04EMCA22 - Application Development for the Android Platform
Monday 15th April 2019

Time: 2:00 pm to 5:00 pm

Max. Marks: 70

Q-1 Choose the most appropriate option for each question:

[8]

1. Which of the following java packages is not available in the Android SDK?
A) javax.swing B) java.util
C) java.net D) javax.xml
2. Which of the following is an example of a ViewGroup?
A) TextView B) Button
C) Layout D) None of these
3. Which of the following can be used to send data from one app to another?
A) Database B) Broadcast receiver
C) Adapter D) Intent
4. Which of the following cannot be used as part of intent filters?
A) Category B) LAUNCHER_MAIN
C) URI D) MIME type
5. Which of the following is a method of the SQLiteOpenHelper class?
A) onWrite() B) onInsert()
C) onUpgrade() D) onRead()
6. Which of the following is used by content providers to identify resources?
A) Id B) Primary key
C) WHERE clause D) URI
7. Which command is used to debug Android applications?
A) adb B) abd
C) dba D) bda
8. Which permission is required to access the network from an Android app?
A) NETWORK B) INTERNET
C) ACCESS_NETWORK D) CONNECT_INTERNET

[14]

Q-2 Answer the following questions (Any Seven):

1. Name the two runtimes used for executing Android code.
2. List the drawable subfolders of the resource folder.
3. What is the full form of APK? What does an APK file contain?
4. Explain the LinearLayout in brief.
5. Which class in an Android app holds the ids defined in the app? Write a code statement showing how we can obtain a reference to a view using its id.
6. List the abstract methods in the LoaderCallbacks interface.
7. Differentiate between implicit and explicit intents.
8. List the types of animations in Android.
9. List the classes used to play audio and video under Android.

(1)

CPTO

page 1 of 2

Q-3

- A. Write a short note on the use of resources in Android.
B. Explain how to use Toast, AlertDialog and Log.

[6]

[6]

OR

- B. Explain the following concepts in Android development in brief: AVD, Activity, Service, Broadcast Receiver, Context, the UI thread

Q-4

[6]

- A. Explain any three Android activity lifecycle events.
B. Assuming there is a TextView, an EditText and a Button with ids tvMessage, etName and btClick respectively, write the onCreate() handler so that when the user presses the button, the contents of the EditText are transferred to the TextView.

OR

- B. Describe the class in the Android SDK used for performing operations in the background.

[6]

Q-5

[6]

- A. Describe the use of adapters and ListView in Android.
B. Explain notifications in Android with an overview of the code to generate them.

[6]

OR

- B. Write a short note on the SQLite database. Explain the characteristics in which it differs from typical RDBMS systems.

[6]

Q-6

[6]

- A. Write a short note on location access and its applications in Android.
B. List the contents of the Android manifest file.

[6]

OR

- B. Write a short note on content providers. Also explain the use of different standard storage directories used by Android apps.

— X —
②

G. H. Patel P. G. Department of Computer Science and Technology
Master of Computer Applications
MCA - IV Internal Examinations
PS04CMCA21 The Linux Operating System
Wednesday, 6th March, 2019

Max. Marks: 30

Time: 11:00 am to 12:30 pm

[4]

Q-1 Choose the most appropriate option for each question:

1. The Unix file system is an example of _____.
 A) forest B) tree
 C) disconnected graph D) river
2. The system wide configuration files are present in ____ directory.
 A) /conf B) /configuration
 C) /etc D) /home
3. Long options to commands start with _____.
 A) -(hyphen hyphen) B) -(hyphen)
 C) ~(tilde) D) '(backquote)
4. Which of the following shell variable returns the command as entered by the user on the command line?
 A) \$? B) \$#
 C) \$0 D) None of these

[6]

Q-2 Answer the following questions (ANY THREE):

1. Write the commands for following operations :
 - 1) To list all files and directories inside home directory.
 - 2) To rename file abc.txt to xyz.txt inside /home/test directory from home directory.
2. List types of VI buffer. Also write command to (a) copy first five line of text and put it inside buffer m (b) paste copied contents in same text file.
3. List at least one situation each for where spaces must be used as separator on the command line and where spaces must not be used as separator.
4. Write the syntax for comments in a shell script. Also explain the shebang line.

Q-3 Answer the following questions:

- A. Explain Linux OS structure and architecture with appropriate diagram. [5]
 B. Mention different modes of VIM editor in details. [5]

OR

- B. Discuss user management of Linux OS in detail. [5]

Q-4 Answer the following questions:

- A. Explain input redirection, output redirection and command substitution in detail. [5]
 B. Describe in brief the tests that can be performed by the test command. [5]
- OR** Vi rom LS
- B. Assume a CSV file error-log containing the fields line-number, column-number and error-message separated by , (comma). Write a shell script that reads the file line-by-line and displays all the error messages between line-number 23 and line-number 34. [5]

Time: 11:00 am to 12:30 pm

[05]

1. Choose the most appropriate option for each of the following questions :

- (i) Which of the following is a top-down parser ?

(A) Recursive Descent Parser (B) shift-reduce parser
(C) Operator Precedence Parser (D) None of these.

- 5 (ii) A grammar that produces more than one parse trees for the same sentence is known as _____.

(A) Non-left-recursive (B) ambiguous (C) CFG (D) None of these

- (iii) A _____ is a sentential form with no non-terminals.

(A) sentinel (B) regular set (C) sentence (D) None of these

- (iv) If S is a start symbol of the given grammar, FOLLOW(S) always contains _____.

(A) \$ (B) epsilon (C) # (D) None of these

- (v) A _____ is a sequence of characters in the source program matched by the pattern for a token.

(A) token (B) sentinel (C) lexeme (D) None of these.

[10]

2. Answer the following questions (ANY FIVE):

- ✓ (i) List the cousins of a compiler..
✓ (ii) Explain role of lexical analyzer.
✓ (iii) Differentiate between NFA and DFA.
✓ (iv) Define: Context-Free Grammar.
✓ (v) What is left recursion? Give an example.
✓ (vi) What is left factoring? Discuss its importance in brief.

[10]

3. Answer the following questions (ANY THREE):

- ✓ (A) Describe the *two-buffer technique* for input buffering. Write the algorithm for advancing a forward pointer using sentinels.

8 (B) Explain the model of a *predictive parser* giving its algorithm.

- ✓ (C) Draw an NFA for the following *regular expression* using the Thompson's construction method.

$(a|b)^*aabb$

- (D) Explain the *subset construction method* with an example.

G. H. Patel P. G. Department of Computer Science and Technology
Master of Computer Applications (MCA)
MCA-IV Internal Examinations
PS04EMCA22 Application Development for the Android Platform
Tuesday, 5th March, 2019

Time: 11:00 am to 12:30 pm

Max. Marks: 30

Q-1 Answer the following questions:

- ✓ 1. What is the full form of ART? [4]
- ✓ 2. Why is SQLite preferred for database management under Android?
- ✓ 3. What is the API level of the latest version of Android?
- ✓ 4. After which events in the Android activity lifecycle is the activity killable?

Q-2 Answer the following questions (ANY THREE):

- ✓ 1. What is the full form of dp? Why is it the preferred unit of dimensions with Android? [6]
- ✓ 2. Explain the TableLayout in brief.
- ✓ 3. List all intent filter criteria.
- 4. List the methods that must be implemented by a class implementing the interface LoaderCallbacks.

Q-3 Answer the following questions:

- ✓ A. List and explain in brief resource types typically used in an Android project. [5]
- B. Write code snippets for creating and invoking implicit intents and explicit intents. Also write code snippets for adding data to an intent and retrieving data from an intent. [5]
- ✓ B. Write a short note on the SQLite database. Explain the characteristics in which it differs from typical RDBMS systems. [5]

OR

- ✓ A. Explain the use of adapters and ListView in Android. [5]
- B. Explain the AsyncTask class and its use. [5]
- ✓ B. Write a short note on content providers. Also explain the use of different standard storage directories by Android apps. [5]

G H PATEL P G DEPARTMENT OF COMPUTER SCIENCE AND TECHNOLOGY
SARDAR PATEL UNIVERSITY
MASTER OF COMPUTER APPLICATIONS (MCA)
PS04CMCA23 (SOFTWARE ENGINEERING)
INTERNAL EXAMINATIONS (SEMESTER - IV) 8TH MARCH, 2019

Marks : 30

Time : 1½ Hour

Q-1 Pick up the most appropriate answer from the given alternatives and write (4)

- (i) _____ is an extremely critical and time-consuming activity.
[A] Requirement Analysis [B] Coding
[C] Software Design [D] Software Testing
- (ii) Which one of the following software development process model uses the Project Control List?
[A] Waterfall Model [B] Timeboxing Model
[C] Spiral Model [D] Iterative Development Model
- (iii) _____ is defined as an exposure to the chance of injury or loss.
[A] Error [B] Bug [C] Risk [D] none of these
- (iv) A _____ is a systematic approach to creating a design by applying of a set of techniques and guidelines.
[A] Design Methodology [B] Design Model
[C] Coupling [D] none of these

Q-2 Do as directed (Any Three): (6)

- i. Define the term 'Software'. List out general characteristics of a software.
ii. List out various quality attributes of a software.
iii. What is SRS? Why is it required?
iv. Differentiate between: Verification and Validation.
v. Write the full-form of: KLOC, WBS, COCOMO, EAF.

✓ **Q-3[a]** Explain Prototyping model with its advantages and disadvantages. (5)

✓ **[b]** Define 'Software Process'. Explain ETVX approach for process specification. (5)

OR

✓ **[b]** Explain - software reuse with its advantages and disadvantages. (5)

✓ **Q-4[a]** Explain general structure of an SRS. (5)

✓ **[b]** Explain 'Risk Management in Software Project'. (5)

OR

✓ **[b]** Explain the concept of coupling. (5)

*** The End ***

SARDAR PATEL P G DEPARTMENT OF COMPUTER SCIENCE AND TECHNOLOGY
SARDAR PATEL UNIVERSITY
MASTER OF COMPUTER APPLICATIONS (MCA)
PS04CMCA24 (WEB APPLICATION DEVELOPMENT TECHNOLOGY)
INTERNAL EXAMINATIONS (SEMESTER – IV) 9TH MARCH, 2019

Time : 1½ Hour

Marks : 30

Q-1 Pick up the most appropriate answer from the given alternatives and write (4) in your answer book.

- (i) _____ is a PHP function used to define constant variable.
[A] constant() [B] define() [C] A and B both [D] None of these
- (ii) _____ is a PHP function returns internal structure of an array with type of data elements.
[A] array() [B] print_r()
[C] phpinfo() [D] None of these
- (iii) Read the following two statements and then select most appropriate option from the given alternatives:
I. jQuery is a Javascript library.
II. The \$ sign is used to write jQuery
[A] Statement (I) is correct [B] Both statements are not correct
[C] Statement (II) is correct [D] Both statements are correct.
- (iv) HotSpots and HotSpotMode properties are supported by _____ control.
[A] ImageButton [B] Image
[C] ImageMap [D] Literal

Q-2 Do as directed (Any Three):

(6)

- i. List various benefits of PHP.
ii. Differentiate between GET and POST method.
iii. What is CSS? Give an example of CSS.
iv. Write the full-form of : DHTML, CSS, W3C, DOM

✓ Q-3 [a] Discuss associative array in PHP taking suitable examples. (5)

[b] List and explain different types of operators in PHP. (5)

OR

[b] Write PHP script to validate an input E-mail Id, where E-mail Id is actual user input. (5)

✓ Q-4 [a] What is ASP.NET? List any Eight ASP.NET standard controls and explain any one of them. (5)

[b] What is 'Cookie'? Explain various ways to create it in ASP.NET with an example. (5)
Write advantages and disadvantages using cookie.

OR

✓ [b] List names of ASP.NET validation controls and explain any two of them. (5)

* * * The End * * *

SARDAR PATEL UNIVERSITY
MASTER OF COMPUTER APPLICATIONS (MCA)
MCA-IV SEMESTER
PS04CMCA25 (PRACTICAL)
28TH MARCH, 2019

Marks : 70

Time : 3 Hours

- Q-1 ✓ Design a registration page to insert different field values (like salesperson_id, [20] salesperson_name, salesperson_address, salesperson_city, salesperson_pincode, salesperson_email, salesperson_mob_no) in salesperson.dat for Salesperson Management System.

- ✓ a. Save project as sms_seatno.
- ✓ b. Create file salesperson.dat in sms_seatno.
- ✓ c. Also write PHP code to delete record from a file. You should ask user to enter record number for this operation.

You can add additional PHP (if required).

- Q-2 The file /etc/passwd is a system file that contains information about users of the [20] system having the following fields separated by the : (colon) character:
username, encrypted_password, user_id, primary_group, description, home_directory, default_shell

Write a SINGLE Linux shell script annnn.sh (where nnnn is your four-digit Exam Seat No) to perform the following operations. Use echo "---- a1 ----", echo "---- a2 ----", etc. before each command to separate subquestions.

- a1. Count the number of users whose default shell is /bin/false.
- a2. Display the user id and home directory of the user named backup.
- a3. List all the usernames and user id for those users whose user id is same as primary group.
- a4. Output all the lines of the file with false replaced by true.
- a5. Output the number of users, sum of their user ids and the average user id.

- Q-3 Create a new blank Web Application (q3nnnn, [20] (where nnnn indicate your seat no.) using ASP.NET (Visual C#) to perform the following:

- ✓ Add new master page (ABCD.master) to your application and assign the title of your application as STUDENT INFORMATION SYSTEM.
- ✓ Add three web pages to your application viz. [1] frmInformation.aspx [2] frmRegistration.aspx (default page) and [3] frmDataSuccess.aspx
- ✓ Add menu control in Master Page and provide appropriate menu items (for information and registration).
- ✓ Add SQL database and create REG table to store registration details (refer Resources).
 - Design appropriate well-designed interface for student registration (refer Resources). Using frmRegistration.aspx page, insert student registration data into REG table. When a button is clicked to insert data, after inserting data, frmDataSuccess.aspx should be navigated.
 - You may choose your own ideas to design an interface and it should be user-friendly. Wherever, names are not specified, you can choose your own names.

- Q-4 Viva-Voce

[10]

*** THE END ***

G.H. Patel P.G. Department of Computer Science & Technology
SARDAR PATEL UNIVERSITY
MCA - IV Internal Practical Examinations
PS04CMCA06 - Practical
8th March, 2016

Time: 3 1/2 Hours

Max. Marks: 60

- Q-1(a) Write a shell script that performs the following operations. Save the script as [08] q1aPID.sh (where PID is your Permanent ID).

The shell script should accept three 3-digit integers as command line arguments and check that there are three 3-digit integer arguments. It should output the numbers formed by taking the first digits from each command line argument, the second digits from each command line argument and the third digits from each command line argument.

For example: If the command line is

q1aM15111 si 123 456 789 001 020 001

Output:

147

258

369

- [b] Create the following CSV file with fields product, company, brand ambassador and market share in percentage. [12]

Refrigerator,Whirlpool,Kajol,10
Washing Machine,Whirlpool,Kajol,15
AC,Whirlpool,Kajol,20
Refrigerator,LG,Amir Khan,20
AC,LG,Amir Khan,30
Refrigerator,Samsung,Saurav Ganguli,27

- Write a shell script that performs the following operations. Save the script as q1bPID.sh (where PID is your Permanent ID).

The script should output the following:

1. The name of the company with the highest market share in refrigerators and its market share in refrigerators.
2. The name of the brand ambassador who has achieved the highest market share (average of all products promoted by that brand ambassador). The names of brand ambassadors may be fixed in the script.

- Q-2 Develop a database-driven web based application to make registration of the user. [Save as Q2_R_NN / Q2_L_NN, where NN is for last two digits of your P_Id] [20]

1. Create database user_Reg_db. Create table user_Reg_tbl (with fields user_id, user_nm, user_contact, user_email). Make auto increment for the field user_id.
2. Design registration page to accept and submit input values for the fields as in user_Reg_tbl except user_id.

3. Validate user's name , user's contact number, user's e-mail id using PHP scripts.
4. Insert valid record into the table and give confirmation to user.

Q-3 [a] Create an HTML page that uses JavaScript and has interface as follows:-

[16]

*PP/CS/T3
93/CB*

TOGGLE IMAGE BETWEEN CELLS IN A TABLE	
TOGGLE IMAGE BUTTON	
TOGGLE IMAGE BUTTON	

- Create the table with suitable attributes
- On click of TOGGLE IMAGE BUTTON the image should be brought down in lower cell and vice-versa should continue on click of the TOGGLE IMAGE BUTTON

TOGGLE IMAGE BETWEEN CELLS IN A TABLE	
TOGGLE IMAGE BUTTON	
TOGGLE IMAGE BUTTON	

[b] Create a web service called as MyCalculator which has functions for addition, subtraction, division and multiplication. Create a client web application called as UseCalculator that refers the web service MyCalculator and create a web form as display below:

Number 1	<input type="text" value="25"/>		
Number 2	<input type="text" value="25"/>		
Add	Multiply	Subtract	Divide

Result is 50

- The web form should have two textboxes, four buttons and a label to display the result.
- On click of appropriate button appropriate web method from web service MyCalculator is called. For example on click of Add button add method of web service MyCalculator is called and page displays addition of result.

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Page 2 of 2

3

G H PATEL P G DEPARTMENT OF COMPUTER SCIENCE & TECHNOLOGY
MASTER OF COMPUTER APPLICATIONS (MCA)
SEMESTER – IV
PS04CMCA06 (PRACTICAL EXAMINATION) Internal Test
6th March, 2017

Time: 3 Hours

Marks: 60

- Q-1 Design a registration page to accept and validate different fields (like [20] student_name, student_address, student_city, student_pincode, student_email_id, student_mobile_no) for Student Information Management System.
- Name, address and city of the student must be sequence of letters.
 - Pincode (length exactly 6) and mobile number (length exactly 10) of the student must be sequence of digits.
 - Validate an e-mail id as per universal standards.
- Q-2 Write a shell script that performs the following operations. Save the script as [20] q2PID.sh (where PID is your Permanent ID). Create the data file named as "emp.txt" containing minimum 10 employees records with following fields: **Note:** use ":" (colon) as delimiter
- Emp No : Name : Designation : Basic Pay : Department No
- The script should produce the output for the following queries:
1. Display the employee(s) having "Sharma" as the surname.
 2. List the employee(s) whose name start and end with same alphabet.
 3. Count the no. of employees working in department no. 10.
 4. Show the employee(s) having highest basic pay in department no. 20.
 5. List record of "clerk" of each department.
 6. Display all the distinct designations.
 7. Calculate and display the Dearness Allowance (DA), Basic Pay and Gross Pay for each employee using the following criteria.
 - DA for employees working in department no 10 is 30% of basic pay
 - DA for employees working in department no 20 is 40% of basic pay
 - DA for employees working in department no 30 is 50% of basic pay
 - Gross Pay = Basic Pay + Dearness Allowance
- Q-3 Develop a Web Site using ASP.NET (Visual C#) as per the following guidelines : [20]
- Create a folder q3PID (where PID indicate your full PID) in the local working directory to store Web Site resources.
 - Design a Web form to collect the leave details of a student, which includes Permanent ID, Name of the student, Name of the programme (MCA-Regular, MCA-Lateral MSc-IT and PGDCA), Semester, leave start date, leave end date, Mobile number and email address.
 - While collecting the details the following facilities are required:
 - Provide appropriate possible validations to each input field.
 - For each text input field, appropriate background colors should be when it get focus and reset the background color once it lost focus.
 - Provide submit (to submit the data on a next page [i.e. frmDisplay.aspx]) and reset button (to reset the input fields).
 - In frmDisplay.aspx, display all the data from previous page using appropriate mechanism.

XXXXX

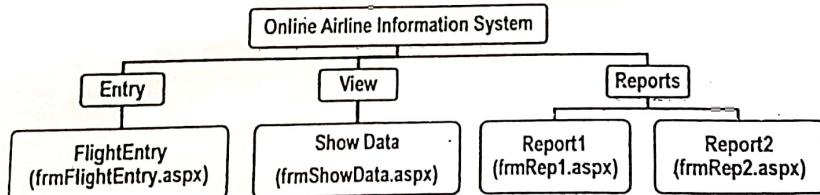
SARDAR PATEL UNIVERSITY
G H PATEL P G DEPARTMENT OF COMPUTER SCIENCE & TECHNOLOGY
MASTER OF COMPUTER APPLICATIONS (MCA)
SEMESTER – IV
PS04CMCA06 (Practical Examination) Internal Test

12th March, 2018

Time: 3 Hours

Marks: 60

- Q-1 ✓ Design a registration page to accept and validate different fields (like first_name, last_name, address, city, pincode, email_id, contact_no) for Employee Information Management System. [20]
- Q1 a. First Name and Last Name must be sequence of letters with maximum length 15 for each one.
b. Address must be sequence of letters with maximum length 40.
c. City must be sequence of letters with maximum length 15.
d. Pincode and contact number must be sequence of digits.
e. Validate an e-mail id as per universal standards.
- Q-2 [a] Input an integer n ($1 \leq n \leq 15$). Output n rows of numbers in the following format: [10]
- 5 4 3 2 1
5 4 3 2
5 4 3
5 4
5
- [b] Input a three-digit positive integer and find the sum of all digits from the given number. For example, if the input number is 345, then the sum will be 12 (i. e. $3+4+5$). [10]
- Q-3 Create a Website using ASP.NET to perform the following operations: [20]
- You are given SQL Server Database (EXAM.MDF). Add this database to your application and create the following table:
Table : Flight (FlightNo, FromPlace, ToPlace, Distance, TravelCost)
Sample row : (101, Bombay, Delhi, 1148, 6750)
 - Add the following WebPages (using the existing master page) to the application:
- frmFlightEntry.aspx - frmShowData.aspx - frmRep1.aspx - frmRep2.aspx
 - In Master page, do the following:
- Set Web Site title to "ONLINE AIRLINE INFORMATION SYSTEM".
- Modify master menu using the following hierarchy :



- Try to follow the following requirements in your application:
 - All textbox controls should have dotted border.
 - All textbox controls should manage focus in and out events.
- Using frmFlightEntry.aspx, design data entry screen to add record into Flight table. All values are required prior to add a record into Flight table. Use appropriate validation controls. Try to provide mechanism in this webpage for displaying data entered so far using frmShowData.aspx. You are required to display all records from the Flight table when frmShowData.aspx page is loaded.

SARDAR PATEL UNIVERSITY
MASTER OF COMPUTER APPLICATIONS (MCA)
MCA-IV SEMESTER
PS04CMCA25 (PRACTICAL)
28TH MARCH, 2019

Time : 3 Hours

Marks : 70

- Q-1** Design a registration page to insert different field values (like salesperson_id, salesperson_name, salesperson_address, salesperson_city, salesperson_pincode, salesperson_email, salesperson_mob_no) in salesperson.dat for Salesperson Management System. [20]

- a. Save project as sms_seatno.
- b. Create file salesperson.dat in sms_seatno.
- c. Also write PHP code to delete record from a file. You should ask user to enter record number for this operation.

You can add additional PHP (if required).

- Q-2** The file /etc/passwd is a system file that contains information about users of the system having the following fields separated by the : (colon) character: username, encrypted_password, user_id, primary_group, description, home_directory, default_shell [20]

Write a SINGLE Linux shell script annnn.sh (where nnnn is your four-digit Exam Seat No) to perform the following operations. Use echo "---- a1 ----", echo "---- a2 ----", etc. before each command to separate subquestions.

- a1. Count the number of users whose default shell is /bin/false.
- a2. Display the user id and home directory of the user named backup.
- a3. List all the usernames and user id for those users whose user id is same as primary group.
- a4. Output all the lines of the file with false replaced by true.
- a5. Output the number of users, sum of their user ids and the average user id.

- Q-3** Create a new blank Web Application (q3nnnn, (where nnnn indicate your seat no.) using ASP.NET (Visual C#) to perform the following: [20]

- Add new master page (ABCD.master) to your application and assign the title of your application as STUDENT INFORMATION SYSTEM.
- Add three web pages to your application viz. [1] frmInformation.aspx [2] frmRegistration.aspx (default page) and [3] frmDataSuccess.aspx
- Add menu control in Master Page and provide appropriate menu items (for information and registration).
- Add SQL database and create REG table to store registration details (refer Resources).
- Design appropriate well-designed interface for student registration (refer Resources). Using frmRegistration.aspx page, insert student registration data into REG table. When a button is clicked to insert data, after inserting data, frmDataSuccess.aspx should be navigated.
- You may choose your own ideas to design an interface and it should be user-friendly. Wherever, names are not specified, you can choose your own names.

- Q-4** Viva-Voce [10]

*** THE END ***

G. H. Patel P. G. Department of Computer Science and Technology
Master of Computer Applications (MCA)

MCA-V Internal Examinations

PS05EMCA03 Application Development for the Android Platform
Tuesday, 10th September, 2013

Time: 11:00 am to 12:30 pm

Max. Marks: 30
[10]

- Q-1 Answer the following questions in one sentence each [10]
- Android is a product of which alliance?
 - Which virtual machine is used by Android?
 - Which database management system is used by Android?
 - Which graphics library is used by Android?
 - Which is the SDK level of the latest released version of Android?
 - What is the full form of DDMS?
 - What is an activity?
 - What is the process of generating views at runtime from an XML layout file called?
 - What are floating messages that appear on the mobile screen for a brief duration called?
 - Which Android class is used for populating a ListView dynamically using data from a data model?
- Q-2 a. Explain the concept and use of intents in Android with sample code. Also give code example of passing data via an intent and retrieving the same in the receiving activity. [4]
- b. Answer ANY TWO from the following: [6]
- Write a note on the Activity Lifecycle in Android.
 - Explain in brief what services, content providers and broadcast receivers are.
 - Give an outline of how to run code asynchronously using AsyncTask. Why should anyone want to do that?
- Q-3 Answer the following questions in brief (ANY FIVE): [10]
- What is a POJO class? What should it contain?
 - How do we obtain a reference to an EditText declared in a layout? How do we assign its text contents to a string variable?
 - Which method is called when a menu item is selected? Write a short sample of it.
 - How do we use a context menu in our activity?
 - List the main contents of an SQLiteOpenHelper class.
 - What are the advantages of using LoaderManager and CursorLoader?
 - What are the reasons for the use of resources in Android?

OHA = Open Handset Alliance

AOSP = Android open source project

SDK = Software Development Kit

ART = Android Run Time

PIM = Personal Information management

AOT = Ahead-of-Time

APK = Android package

ADT = Android Development Tool

AVD = Android Virtual Device

DDMS = Dalvik Debug Monitoring Service

ADB = Android Debug Bridge

CSS = Cascading stylesheets

MIME = multimedia Internet mail extensions

EDT = Event Dispatch Thread

ANR = Application Not Responding

Version	Code name	API
8.0	Oreo	26
8.1	Oreo	27
9.0	Pie	28

Dutik ~~Dutik~~

G. H. Patel P. G. Department of Computer Science and Technology
Master of Computer Applications (MCA)
MCA-V Internal Examinations (Retest).
PS05EMCA03 Application Development for the Android Platform
Friday, 11th October, 2013

Time: 12:15 pm to 1:45 pm

Max. Marks: 30

- Q-1** a. Write key characteristics of the Android platform. [4]
b. Write a note on the Android development platform. [3]
c. Discuss the different components used in developing an [3]
Android application using Eclipse.
- Q-2** a. Write sample code for invoking one activity from another [4]
passing some data:
b. Write a note on the Activity Lifecycle in Android. [3]
c. Explain different types of resources in Android. [3]
- Q-3 Answer the following questions in brief (ANY FIVE):** [10]
- What is an adapter? What does it do?
 - Where do we declare the permissions needed by our application? Give an example of a permission.
 - How do we use a context menu in our activity?
 - Which three methods must be implemented for implementing the LoaderCallbacks interface?
 - What is AsyncTask? What is its use?
 - Which classes from the Android SDK do we use for making HTTP requests?

Q=2

- c → res/values
1. menu
2. values
3. layout

MICH - YTM

2017

Internet

Exam. 2017

G. H. Patel P. G. Department of Computer Science and Technology
Master of Computer Applications
MCA-IV Internal Examinations
PS04CMCA07 - The Linux Operating System
27th February, 2017

Time: 11:00 am to 12:30 pm

Max. Marks: 30

Q-1 Choose the most appropriate option for each question: [4]

- ✓ 1. Which of the following command is available on Linux only to get the detailed on line manual?
A) info B) try C) apropos D) none of these
- ✓ 2. The option _____ is used with the ls command to display the size in human readable format.
A) -l B) -h C) -a D) -d
- ✓ 3. Which of the following is a valid Linux command to set the last modification time stamp of the argument file to current date and time without opening it?
A) vi B) stamp C) touch D) none of these
- ✓ 4. Which of the following shell variable represents the exit status of last executed command?
A) \$? B) \$\$ C) \$# D) \$\$%

Q-2 Answer the following questions (ANY THREE): [6]

1. Specify the vi editor command to paste the copied lines from buffer name 'b'.
2. Write down a vi editor command to open the file named as "temp.doc" with the cursor at line no. 35.
3. Describe any four operators used in IO redirection in brief.
4. Discuss the use of uniq command.

Q-3 Answer the following questions: [5]

- A. Compare Windows and Linux OS. Also list the features of Linux OS.
- B. Explain various ways of handling command line arguments in Linux OS.

OR

- B. Discuss the use of /etc, /dev and /home directories. Also explain the use of pwd and rm commands. [5]

Q-4 Answer the following questions: [5]

- A. Explain the following commands with example and at least with one option each.
i. tr ii. mv iii. tail
- B. Discuss grep command in detail with examples. [5]

OR

- B. Discuss sort command in detail with examples. [5]

நவா

NATO = North Atlantic Treaty Organization

KLOC = Thousands(k) of Line Of Code

LOC = Line of code

XP = Extreme Programming

ASD = Adaptive Software Development

DSDM = Dynamic System Development method

FDP = Feature Driven Development

AM = Agile modeling.

WBS = Work breakdown structure

~~SSRS~~ = ^{Req.} system software specification

SRS = software requirement specification

IEEE - Institute of Electrical and Electronics Engineering

ETVx = entry criteria, Test, verification

COCOMO = Constructive Cost Model

S&AP = Software Quality Assurance Plans

DOD = Delivered Defect Density

QC = quality control

SPC = Statistical Process Control

MCA - 4th Sem. Internal (2018) - April
G. H. Patel P. G. Department of Computer Science and Technology
Master of Computer Applications (MCA)
MCA-V Internal Examinations
PS04CMCA07 The Linux Operating System
Monday, 5th March, 2018

Time: 11:00 am to 12:30 pm

Max. Marks: 30

Q-1 Choose the most appropriate option for each question: [4]

1. Which of the following vi command will close a modified file without saving?
 A) q B) q!
 C) :q! D) X
2. Which of the following is used in a case statement in the shell scripting language to define the default case?
 A) *) B) default)
 C) default: D) **)
3. The system variable that shows the sequence in which various directories will be searched to locate a command is _____.
 A) HOME B) PWD
 C) PATH D) SHELL
4. Which of the following is a valid Linux command to read a user input and extract first three characters of the line from it?
 A) echo | cut -c 1-3 B) cut -c 1-3 < file.txt
 C) cat | cut -c 1-3 D) None of these

Q-2 Answer the following questions (ANY THREE): [6]

1. Write the commands for creating a directory and deleting a directory.
2. Define a filter. Give at least two examples of filters.
3. Describe the use of the /etc and /dev directories in the standard UNIX file system hierarchy.
4. Define shell. List various shells available.

Q-3 Answer the following questions:

- A. Write a short note on the history of the Linux operating system. [5]
- B. Explain the tests that can be performed with the test command in brief. [5]

OR

- B. Explain redirection of standard input and standard output in different ways. [5]

Q-4 Answer the following questions:

- A. Write the syntax of the control structures in bash scripting. [5]
- B. Discuss the grep command in detail with at least four options of the command. [5]

OR

- B. Explain the commands in brief: i) sort ii) expr iii) wc. [5]

Science and Technology

SARDAR PATEL PG DEPARTMENT OF COMPUTER SCIENCE AND TECHNOLOGY
SARDAR PATEL UNIVERSITY
MASTER OF COMPUTER APPLICATIONS (MCA)
PS04CMCA04 (SOFTWARE ENGINEERING)
INTERNAL EXAMINATIONS (SEMESTER - IV) 8TH MARCH, 2018

Time : 1½ Hour

Marks : 30

Q-1 Pick up the most appropriate answer from the given alternatives and write (4) in your answer book.

- (i) Which one of the followings process model generally involves least cost of development?
[A] Spiral [B] Prototyping [C] Time-boxing [D] Waterfall
- (ii) _____ describes how the proposed software system will satisfy functionalities.
[A] Design Document [B] Test Plan
[C] SRS [D] none of these
- (iii) _____ is defined as an exposure to the chance of injury or loss.
[A] Error [B] Bug [C] Risk [D] none of these
- (iv) A _____ is a systematic approach to creating a design by applying of a set of techniques and guidelines.
[A] Design Methodology [B] Design Model
[C] Coupling [D] none of these

(6)

Q-2 Do as directed (Any Three):

- i. Define the term 'Software'. List out general characteristics of a software.
- ii. List out various quality attributes of a software.
- iii. With an example explain the meaning of Use Case.
- iv. Differentiate between: coupling and cohesion.
- v. Write the full-form of: WBS, COCOMO, EAF, UML.

Q-3 [a] Explain 'Time-boxing model with its advantages and disadvantages'.

(5)

[b] Explain 'Software Engineering challenges.'

(5)

OR

[b] Explain 'Software reuse with its advantages and disadvantages.'

(5)

Q-4 [a] List and explain various components of an SRS.

(5)

[b] Explain 'Risk Management in Software Project'.

(5)

OR

[b] Explain the concept of coupling.

(5)

*** The End ***

G. H. Patel P. G. Department of Computer Science and Technology
Master of Computer Applications (MCA)
MCA-IV Internal Examinations
PS04EMCA22 Application Development for the Android Platform
Tuesday, 5th March, 2019

Time: 11:00 am to 12:30 pm

Max. Marks: 30

Q-1 Answer the following questions:

[4]

1. What is the full form of ART?
2. Why is SQLite preferred for database management under Android?
3. What is the API level of the latest version of Android?
4. After which events in the Android activity lifecycle is the activity killable?

Q-2 Answer the following questions (ANY THREE):

[6]

1. What is the full form of dp? Why is it the preferred unit of dimensions with Android?
2. Explain the TableLayout in brief.
3. List all intent filter criteria.
4. List the methods that must be implemented by a class implementing the interface LoaderCallbacks.

Q-3 Answer the following questions:

[5]

- A. List and explain in brief resource types typically used in an Android project.

- B. Write code snippets for creating and invoking implicit intents and explicit intents. Also write code snippets for adding data to an intent and retrieving data from an intent.

OR

- B. Write a short note on the SQLite database. Explain the characteristics in which it differs from typical RDBMS systems.

Q-4 Answer the following questions:

[5]

- A. Explain the use of adapters and ListView in Android.

[5]

- B. Explain the AsyncTask class and its use.

OR

- B. Write a short note on content providers. Also explain the use of different standard storage directories by Android apps.

G. H. Patel P. G. Department of Computer Science and Technology
Master of Computer Applications
MCA - IV Internal Examinations
PS04CMCA21 The Linux Operating System
Wednesday, 6th March, 2019

Time: 11:00 am to 12:30 pm

Max. Marks: 30

Q-1 Choose the most appropriate option for each question:

[4]

1. The Unix file system is an example of _____.
 A) forest B) tree
 C) disconnected graph D) river
2. The system wide configuration files are present in ____ directory.
 A) /conf B) /configuration
 C) /etc D) /home
3. Long options to commands start with _____.
 A) - (hyphen hyphen) B) -(hyphen)
 C) ~ (tilde) D) ` (backquote)
4. Which of the following shell variable returns the command as entered by the user on the command line?
 A) \$? B) \$#
 C) \$0 D) None of these

[6]

Q-2 Answer the following questions (ANY THREE):

1. Write the commands for following operations :
 - 1) To list all files and directories inside home directory.
 - 2) To rename file abc.txt to pqr.txt inside /home/test directory from home directory.
2. List types of VI buffer. Also write command to (a) copy first five line of text and put it inside buffer m (b) paste copied contents in same text file.
3. List at least one situation each for where spaces must be used as separator on the command line and where spaces must not be used as separator.
4. Write the syntax for comments in a shell script. Also explain the shebang line.

Q-3 Answer the following questions:

[5]

- A. Explain Linux OS structure and architecture with appropriate diagram.
- B. Mention different modes of VIM editor in details.

[5]

OR

- B. Discuss user management of Linux OS in detail.

[5]

Q-4 Answer the following questions:

[5]

- A. Explain input redirection, output redirection and command substitution in detail.
- B. Describe in brief the tests that can be performed by the test command.

OR

[5]

- B. Assume a CSV file error-log containing the fields line-number, column-number and error-message separated by , (comma). Write a shell script that reads the file line-by-line and displays all the error messages between line-number 23 and line-number 34.

Sardar Patel University
ATEL P G DEPARTMENT OF COMPUTER SCIENCE AND TECHNOLOGY
SARDAR PATEL UNIVERSITY
MCA - IV Semester Internal Examination
PS04CMCA22 Compiler Design
Tuesday, 07th March, 2019

Time: 11:00 am to 12:30 pm

Max. Marks: 30

1. Choose the most appropriate option for each of the following questions : [05]

(i) Which of the following is a top-down parser?

- (A) Recursive Descent Parser (B) shift-reduce parser
(C) Operator Precedence Parser (D) None of these.

(ii) A grammar that produces more than one parse trees for the same sentence is known as _____.

- (A) Non-left-recursive (B) ambiguous (C) CFG (D) None of these

(iii) A _____ is a sentential form with no non-terminals.

- (A) sentinel (B) regular set (C) sentence (D) None of these

(iv) If S is a start symbol of the given grammar, FOLLOW(S) always contains _____.

- (A) \$ (B) ϵ (C) # (D) None of these

(v) A _____ is a sequence of characters in the source program matched by the pattern for a token.

- (A) token (B) sentinel (C) lexeme (D) None of these.

2. Answer the following questions (ANY FIVE): [10]

- (i) List the cousins of a compiler.
(ii) Explain role of lexical analyzer.
(iii) Differentiate between NFA and DFA.
(iv) Define: Context-Free Grammar.
(v) What is left recursion? Give an example.
(vi) What is left factoring? Discuss its importance in brief.

3. Answer the following questions (ANY THREE): [15]

(A) Describe the *two-buffer technique* for input buffering. Write the algorithm for advancing a forward pointer using sentinels.

(B) Explain the model of a *predictive parser* giving its algorithm.

(C) Draw an NFA for the following *regular expression* using the Thompson's construction method.

$(a|b)^*aabb$

(D) Explain the *subset construction method* with an example.

PATEL P G DEPARTMENT OF COMPUTER SCIENCE AND TECHNOLOGY
SARDAR PATEL UNIVERSITY
MASTER OF COMPUTER APPLICATIONS (MCA)
PS04CMCA24 (WEB APPLICATION DEVELOPMENT TECHNOLOGY)
INTERNAL EXAMINATIONS (SEMESTER - IV) 9TH MARCH, 2019

Time : 1½ Hour

Marks : 30

Q-1 Pick up the most appropriate answer from the given alternatives and write (4) in your answer book.

- (i) _____ is a PHP function used to define constant variable.
[A] constant() [B] define() [C] A and B both [D] None of these
- (ii) _____ is a PHP function returns internal structure of an array with type of data elements.
[A] array() [B] print_r()
[C] phpinfo() [D] None of these
- (iii) Read the following two statements and then select most appropriate option from the given alternatives:
I. jQuery is a Javascript library.
II. The \$ sign is used to write jQuery
[A] Statement (I) is correct [B] Both statements are not correct
[C] Statement (II) is correct [D] Both statements are correct.
- (iv) HotSpots and HotSpotMode properties are supported by _____ control.
[A] ImageButton [B] Image
[C] ImageMap [D] Literal

Q-2 Do as directed (Any Three): (6)

- i. List various benefits of PHP.
- ii. Differentiate between GET and POST method.
- iii. What is CSS? Give an example of CSS.
- iv. Write the full form of : DHTML, CSS, W3C, DOM

Q-3 [a] Discuss associative array in PHP taking suitable examples. (5)

[b] List and explain different types of operators in PHP. (5)

OR

[b] Write PHP script to validate an input E-mail Id, where E-mail Id is actual user input. (5)

Q-4 [a] What is ASP.NET? List any Eight ASP.NET standard controls and explain any one of them. (5)

[b] What is 'Cookie'? Explain various ways to create it in ASP.NET with an example. (5)
Write advantages and disadvantages using cookie.

OR

[b] List names of ASP.NET validation controls and explain any two of them. (5)

*** The End ***

unit = 1

- introduction to the Android platform.
- Android system architecture
- Android application development environment, working with the IDE
- the Android application life cycle.
- Key Android concepts - AVDs, activities, views, adapters, intents, broadcast receivers, services, content providers, layouts and their inflation, different types of resources, notification, widgets.
- The Android activity.
- creating the first application, anatomy of the project.
- using menu and context menus.
- Handling events.

Unit = 2 Application Development - II

- using different layouts
- using different UI components
- Intent
- lists
- Adapters
- Notification

Unit = 3 Data Access

Introduction to the SQLite database

- Creating and managing the SQLite database
- using the database in application
- using different type of content providers.

- Accessing contacts
- file system access

Unit = 4 multimedia and system service

- using images, audio, video
- Accessing the camera using intent
- Introduction to Animation in Android
- Broadcast Receivers
- services
- using text messages (SMS)
- Accessing the network
- Accessing files and data from a SD card
- Introduction to Reallocation and location aware application

Patel P. G. Department of Computer Science and Technology
Master of Computer Applications (MCA)
MCA-V Internal Examinations

EMCA03 Application Development for the Android Platform
Monday, 22nd September, 2014

Time: 2:00 pm to 3:30 pm

Max. Marks: 30

Q-1 Choose the most appropriate option for each question: [4]

1. Which of the following events cannot immediately follow the onPause event in the lifecycle of an activity?
A) onStart B) onResume
C) onCreate D) onStop
2. Which graphics library is used by Android?
A) AWT B) DirectX
C) Swing D) OpenGL
3. Which of the following classes allows data to be accessed through URIs?
A) SqliteDatabaseHelper B) Content Provider
C) LoaderManager D) CursorLoader
4. Which of the following classes has a method called setPositiveButton()?
A) Dialog B) Dialog.Builder
C) AlertDialog D) AlertDialog.Builder

Q-2 Answer the following questions (Any Three): [6]

1. Write a code snippet showing how to use an ArrayAdapter with a ListView.
2. List the main criteria on which an intent filter usually filters intents.
3. Write a code snippet for setting a label in a TextView at run time.
4. Write code snippets to show and hide a TextView.

Q-3 Answer the following questions:

- A. Write sample code for converting a string into an array of JSON objects.
- B. Explain the use of the AsyncTask class in Android. Explain its methods.

OR

- B. Write sample code for generating notification with buttons.

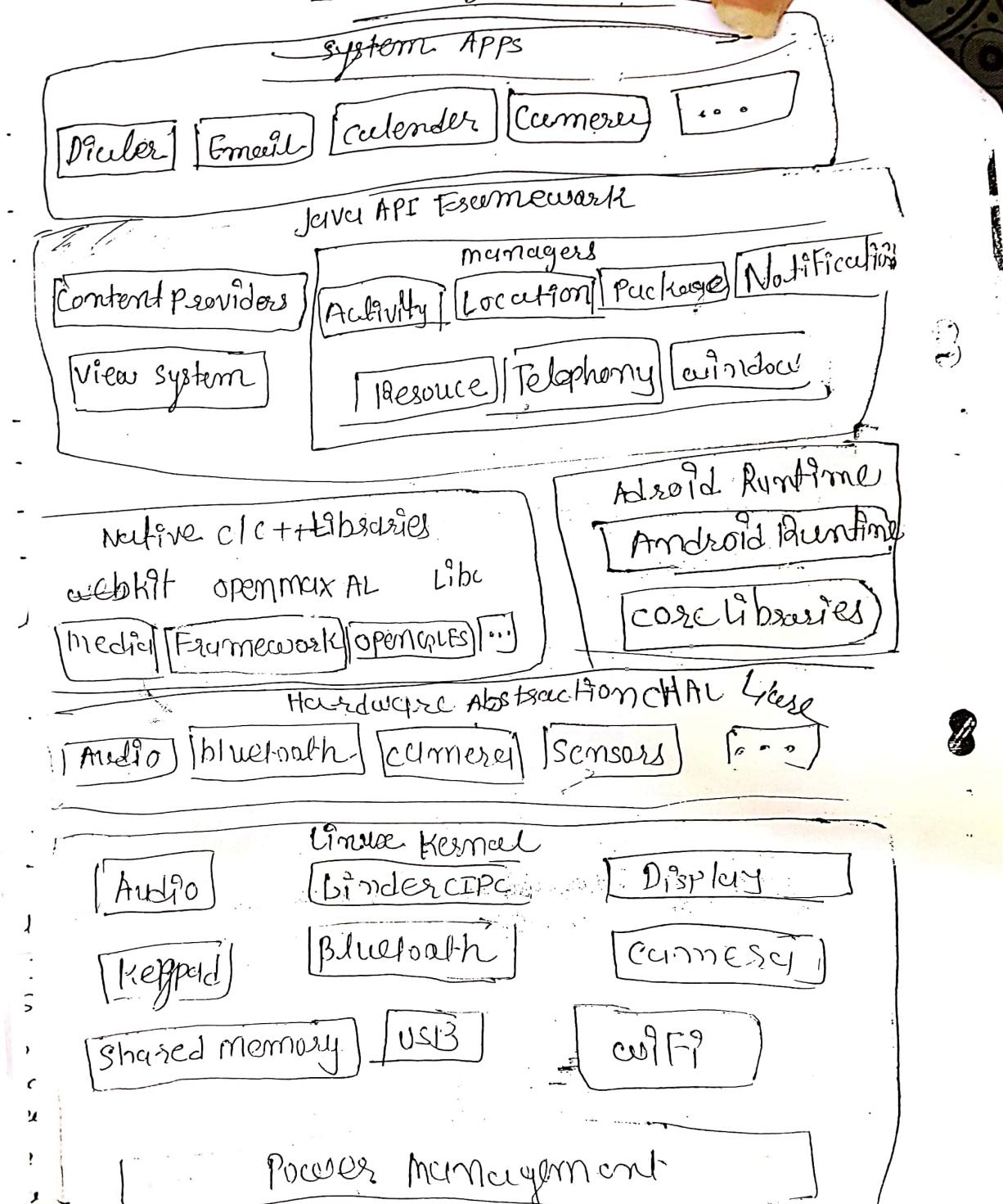
Q-4 Answer the following questions:

- A. Explain in a step-by-step manner how Android apps developed in Java are built, installed and executed. Describe the use of XML files in Android.
- B. Describe the process of developing apps that adapt to different screen sizes and locales.

OR

- B. List the contents of the AndroidManifest.xml file.

Android System Architecture



G. H. Patel P. G. Department of Computer Science and Technology
Master of Computer Applications
MCA-IV Internal Examinations
PS04CMCA01 - The Linux Operating System
29th February, 2016

Time: 11:00 am to 12:30 pm

Max. Marks: 30

(W)

Q-1 Choose the most appropriate option for each question: [4]

1. Which of the following is *not* a valid Linux command to get help?
A) info B) try C) apropos D) none of these
2. The option _____ is used with the read command to do not display the characters as they are read.
A) -f B) -n C) ... D) ...
3. Which of the following is a valid Linux command to read a user input and extract first three characters from it?
A) echo | cut -c 1-3 B) cut -c 1-3 < file.txt
C) cat | cut -c 1-3 D) none of these
4. Which of the following is a valid combination of keys to terminate the user input?
A) ctrl + d B) ctrl + k C) ctrl + e D) ctrl + q

[6]

Q-2 Answer the following questions (ANY THREE):

1. Explain the use of named and numbered buffer in vi editor by taking suitable example.
2. Define shell. Also write a full form of BASH.
3. Specify the use of following system variables: \$HOME, \$PATH
4. Write down a command that can replace all the uppercase letters in file content with the lowercase letters.

Q-3 Answer the following questions:

- A. List and explain various features of Linux OS. Also discuss the licensing for free and open source softwares. [5]
- B. Explain various ways of performing input-output redirection in Linux OS. [5]
OR
- B. Discuss the hierarchical file system structure of Linux OS. Also give a proper example of at least three file system navigation commands. [5]

Q-4 Answer the following questions:

- A. Explain the following commands with example and at least with one option each.
i. wc ii. bc iii. expr [5]
- B. Discuss sort and sed command in brief with examples.
OR
- B. Explain the grep command in brief. Also write a shell script that accepts three command line arguments in the form of *number1 operator number2*. The output should be the result of the specified arithmetic operation. The possible operators are +, -, * or /.
For example: math.sh 123 + 234 where math.sh is the script name. [5]

G H Patel Post Graduate Department of Computer Science and Technology
Master of Computer Applications
SEMESTER - IV Internal Examination
PS04CMCA04: Software Engineering
Thursday, 3rd March, 2016

Time: 11:00 AM to 12:30 PM

Max Marks: 30
[8]

Q.1 Answer the following questions (Any Four)

- (a) List challenges to software engineering.
- (b) What do you mean by agile process? List any two agile process models.
- (c) List components of SRS.
- (d) Define milestones and deliverables.
- (e) Briefly explain the terms: "Most Abstract input" and "Most Abstract Output".
- (f) List the types of errors found in SRS.

Q.2 Answer the following questions (Any Three)

[12]

- (a) List desired characteristics of software process and explain any three in brief.
- (b) Write a use-case(textual) for "Cash withdrawal from ATM by a user"
- (c) Write a note on project scheduling.
- (d) What is coupling? Explain factors affecting coupling.

Q.3 Do as directed (Any Two)

[10]

- (a) Write a note on Time-boxing process model.
- (b) What do you mean by UML? List any four popular UML diagrams, and explain any two of them by giving suitable example.
- (c) Write a note on COCOMO.