Total No. of Questions : 5]
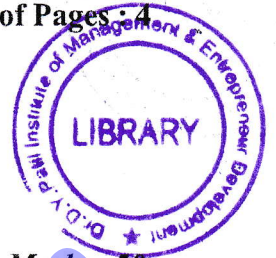
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SEAT No. :

[Total No. of Pages : 4

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M.C.A. (Management)
IT 14 : OPERATING SYSTEM CONCEPTS
(2020 Pattern) (Semester - I)

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates:
1) *All Questions are compulsory.*
2) *Draw neat diagrams wherever necessary.*

Q1) Attempt the following Multiple Choice Questions. Select one best option from the choices given. **[20×½=10]**

i) CPU fetches the instruction from memory according to the value of ____.

   a) Program status word   b) Status register

   c) Instruction register   d) Program counter

ii) Which one of the following is a synchronization tool?

   a) Thread   b) Pipe

   c) Semaphore   d) Socket

iii) A single machine instruction can control the simultaneous execution of a number of processes on _____.

   a) Lockstep Basis   b) Openstep Basis

   c) Early Basis   d) Deadlock Basis

iv) For real time operating systems, interupt latency should be _____.

   a) Minimal   b) Maximum

   c) Zero   d) Dependent on the schedule.

v) Which of the following is not an operating system?

   a) Windows   b) Linux

   c) Oracle   d) Dos

vi) The shell script is _____.

   a) File containing a series of commands

   b) File containing special symbols

   c) Group of commands

   d) Group of Functions

P.T.O.

vii) Memory management technique in which system stores and retrieves data from secondary storage for use in main memory is called _____.

a) Paying

b) Fragmentation

c) Mapping

d) None of the mentioned

viii) Which of the following cannot be scheduled by the Kernel?

a) Process   b) User-level thread

c) Kernel-level thread   d) None of the mentioned

ix) Asymmetric multiprocessing systems of the computer system use _____.

a) Master relationship

b) Slave relationship

c) Master Slave relationship

d) Serial processing

x) Which one of the following is a real time operating system?

a) RT Linux   b) VxWorks

c) Windows CE   d) All of the above

xi) _____ is a windows utility program that locates and eliminates unnecessary fragments and rearranges files and unused disk space to optimize operations.

a) Disk defragmenter   b) Restore

c) Disk cleanup   d) Backup

xii) What will be the output of following command.

$echo "The process id is" $$$$

a) The process id is $$

b) The process id is <pid> <pid>

c) The process id is $<pid> $<pid>

d) The process id is $$$$

xiii) Which of the following algorithm minimizes the process flow time?

a) First come First Served   b) Shortest Job First

c) Earliest Deadline First   d) Longest Job First

xiv) Virtual memory in memory hierarchy consists of

a) RAM and hard disk   b) Cache and hard disk

c) Cache and RAM   d) All of the above

xv) Software can be removed and installed through.

    a)   Installer   b)   Control panel

    c)   Debugger   d)   Linker

xvi) After running this program, if you enter 1010, then what will be the output of the program?

```
#1/bin/bash
echo "please enter a number"
read a
if [$a −lt 100]; then
echo "it is less than 100";
elif [$a −lt 1000]; then
echo "it is less than 1000"
else
echo "it is greater than 1000"
fi
exit 0
```

    a)   It is greater than 1000

    b)   It is less than 1000

    c)   It is equal to 1000

    d)   None of the above

xvii) Which option is suitable when a process is executing in its critical section, then no other processes can be executing in their critical section.

    a)   asynchronous exclusion

    b)   synchronous exclusion

    c)   mutual exclusion

    d)   critical exclusion

xviii) In message passing a process receives information by executing the _____.

    a)   Send   b)   Send primitive

    c)   Receive   d)   Receive primitive

xix) In Linum OS _____ command is used to know which directory you are in

    a)   chkdir   b)   cd

    c)   pwd   d)   None of the above

xx) Which command is used to remove the files.

    a)   delete   b)   rm

    c)   dm   d)   erase

Q2) a) What is operating system? Explain characteristics of OS.   **[6]**

    b) Explain PCB in brief.   **[4]**

OR

    a) Explain logical and physical memory conversion.   **[6]**

    b) Write a short note of synchronization.   **[4]**

Q3) a) What is deadlock? Explain how deadlock can be avoided.   **[6]**

    b) Describe types of multiprocessors.   **[4]**

OR

    a) Explain any two CPU scheduling algorithms   **[6]**

    b) What is Mobile operating system? Explain types of Mobile OS.   **[4]**

Q4) a) Describe components of RTOS.   **[6]**

    b) Explain any 2 features of windows operating system control panel.   **[4]**

OR

    a) Explain applications of RTOS in detail.   **[6]**

    b) Describe any 4 commands of Linux.   **[4]**

Q5) a) Write a shell script for reverse order number.   **[6]**

    b) Write a short note on Kernel.   **[4]**

OR

    a) Explain loops in Linux shell scripting with examples.   **[6]**

    b) Write a shell script to print the contents of the following file.   **[4]**

       File name : 'myfile.txt'

       this is my text file

       Ubuntu is Linux operating system

       VI is the editor in Linux

       I know Linux operating system

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