

Roll No: -----



## UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2017

<b>Program:</b> B.TECH (CSE with specialization in Mainframe Technology)	<b>Semester –</b>	<b>III</b>
<b>Subject (Course):</b> Mainframe operating systems	<b>Max. Marks</b>	<b>: 100</b>
<b>Course Code</b> : CSIB 247	<b>Duration</b>	<b>: 3 Hrs</b>
<b>No. of page/s:</b> 2		

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**Note: All Parts are compulsory.**

### (Part- A)

**Instructions: All questions are compulsory. (5\*4=20)**

- Q1. Discuss the role of Real Storage Manager (RSM) in mainframe operating system.
- Q2. Define the role of nucleus in mainframe operating system address space.
- Q3. Write the steps used to shut down mainframe operating systems.
- Q4. Describe any four guest virtual machines supported by z/VM hypervisor.
- Q5. Define the commands used to define a shared file pool and to create a directory within that file pool.

### (Part- B)

**Instructions: Question number 6, 7 and 8 are compulsory. Question number 9 and 10 has internal choice to attempt. (4\*10=40)**

- Q6. Describe the interrupt processing with its types. Explain the role of program status word (PSW) in interrupt processing.
- Q7. Elaborate z/OS system libraries used in mainframe environment with their significance in the system.
- Q8. Differentiate between CP and CMS in z/VM. Write the commands used to provide following information in CP/CMS:
  - a. Display CP version and its IPL time
  - b. Display the information of all users created in z/VM environment with their status.
  - c. To display the privilege class and directories information for currently logged in user.

Q9. Differentiate between BOTTOM and DOWN commands used in XEDIT with their syntax. Write the XEDIT commands to search a string in a file and to jump to line number 10 in XEDIT file.

OR

Q10. Describe the characteristics of a file with suitable example. Write the commands to update record length and record format for a XEDIT file.

**(Part- C)**

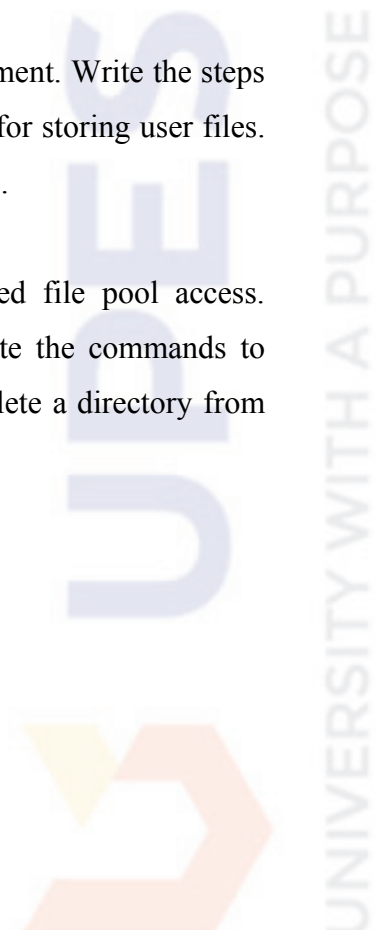
**Instructions: Question number 11 is compulsory. Question number- 12 and 13 has internal choice to attempt. (2\*20=40)**

Q11. Describe the structure of file name used in XEDIT. Elaborate the characteristics for file name, file type and file mode. Also demonstrate the modules/portions contained within a file layout.

Q12. Examine the importance of minidisk with its types in z/VM environment. Write the steps and commands used to create a virtual minidisk and make it usable for storing user files. Also write the commands used to send and receive a file in minidisks.

OR

Q13. Illustrate the importance of “File Pool Server Machine” in shared file pool access. Explain the types of file pool servers with their role in SFS. Write the commands to create a file in a directory, share a directory with other user and delete a directory from SFS.



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**Note: All Parts are compulsory.**

### (Part- A)

**Instructions: All questions are compulsory.**

**(5\*4=20)**

- Q1. Differentiate between a segment and region in z/OS.
- Q2. Define the role of virtual storage manager in mainframe operating system.
- Q3. Write the importance of modified link pack area in z/OS.
- Q4. Define the methods used to perform partitioning in mainframe storage devices.
- Q5. Define the commands used send a message and a file to other user.

### (Part- B)

**Instructions: Question number 6, 7 and 8 are compulsory. Question number 9 and 10 has internal choice to attempt.**

**(4\*10=40)**

- Q6. Draw and explain the Storage map for 64-bit address space. Discuss the technique to provide compatibility between 24-bit and 31-bit operating systems.
- Q7. Differentiate between SMP/E and SMS in mainframe environment. Examine the importance of customized data libraries in running of the system.
- Q8. Elaborate the history of z/VM evolution. Write the advantages of using virtualization in mainframe computers.
- Q9. Describe the role of CP in z/VM. Write the characteristics of CP and its limitations in implementing virtualization.

OR

Q10. Describe the modes of execution in z/VM system. Write any five CP commands used in z/VM with their significance.

**(Part- C)**

**Instructions: Question number 11 is compulsory. Question number- 12 and 13 has internal choice to attempt. (2\*20=40)**

Q11. Write the XEDIT commands to perform the following functions:

- a. To jump above the first line of the file.
- b. To jump to end of file.
- c. To jump to line number 5 in a file.
- d. To search a string in a file.
- e. To define color of prefix area to red.
- f. To set record length to 30 for a file.
- g. To disappear the scale from file area.
- h. To display line numbers in prefix area.

Q12. Distinguish among permanent minidisk, temporary minidisk and virtual minidisk in mainframe systems. Write the steps and commands used to release minidisk. Also write the fields in filelist with their description.

OR

Q13. Illustrate the types of data stored in SFS along with role of groups during storage. Discuss the role of DFSMS/VM in SFS system. Also describe the types of directories that can be created in SFS according to their permission level.