

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES**End Semester Examination, December 2017****Program: B Tech CSE –OSOS****Semester – VII****Subject (Course): Administrating Open Source System****Max. Marks : 100****Course Code : CSIB 222****Duration: 3 Hrs****No. of page/s:2**

**Note: All questions are compulsory.
Assume appropriate data as and where necessary**

SECTION - A**5*4=20 Marks**

1. Explain about the signals in Linux? How do we catch signals?
2. Explain the process states with diagram?
3. How does binary semaphore works? Explain wait and signal?
4. Describe system calls fork(),exec(),system(),ioctl)?
5. What are the general debugging techniques used in Linux programs?

SECTION B**4*10=40Marks**

6. Explain Pipes? Write a program for sending the output to an extern program using popen?
7. Write and explain all the system calls used in client and server programs (sockets)?
8. Describe the kernel subsystem with diagram?
9. Differentiate between Login Shell and Non Login Shells?

SECTION C**2*20=40 Marks**

10. Explain message queues? Write a program to send and receive the messages using msgrcv and msgsnd?

11. Why open source is so powerful? How researchers contributed to the Linux development?

OR

Write a complete semaphore program with a call is made to set_semvalue to initialize the semaphore and op_char is set to X?

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SECTION - A

5*4=20 Marks

1. Explain four Linux properties?
2. What is the difference between command line interfacing and graphical user interfacing?
3. Explain msgctl(),msgsnd().msgrcv(),msgget()?
4. What are the general debugging techniques used in Linux programs?
5. What is device driver? What is IOCTL does in device driver?

SECTION B

4*10=40Marks

6. Explain FIFO? Write a program to generate the signal when control C is pressed?
7. What is open source and how it evolved? Where does the open source stand now?
8. What is the difference between process and thread? Explain the zombie and orphan process?
9. Write a Linux program to print any shell command using system, system call?

SECTION C

2*20=40 Marks

- 10. What is meant by synchronization? Explain the synchronize with semaphore?**
- 11. Explain message queues? Write a program to send and receive the messages using msgrcv and msgsnd?**

OR

Explain in details about the Linux components with diagram? How kernel space is difference between user space?

