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| |  | | --- | |  | | | **G.H. Raisoni College of Engineering and Management, Wagholi, Pune.** |
| **Department of Computer Engineering.**  **Class – T.E.** |
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**SUBJECT-Operating System and Design**

**UNIT-1**

**Q1.What is Kernel? Explain functions of kernel.**

**Q2. Explain types of Kernel?**

**Q3. Write a short note on operating system booting process.**

**Q4.What is difference between Grub-I and Grub-II?**

**Q5. Write a note on buffer cache.**

**Q6. Explain buffer header and buffer pool.**

**Q7. Explain different scenarios for buffer retrieval.**

**Q8. What is i-node? Explain with example.**

**Q9. Write a note on file access methods.**

**Q10. Write a note on system calls related to files.**

**Q11. Explain disc management in in UNIX.**

**Q12. Explain i-get and i-put algorithm.**

**Q13. Explain free space management in UNIX.**

**Q14.Write a note on directory structure in unix.**

**UNIT-2**

**Q1. What is process? Explain process control block with suitable diagram.**

**Q2. Explain Process states and transitions in UNIX with suitable diagram.**

**Q3.Write a note on process creation in Unix.**

**Q4. Which are different reasons for process termination?**

**Q5. Explain awaiting process termination.**

**Q6.What is difference between process termination and awaiting process termination?**

**Q7.Which are different signals in Unix? Explain.**

**Q8. Write a note on arithmetic operations in shell script.**

**Q9. Explain with example while loop, for loop and switch case in shell script.**

**Q10.Explain break statement in shell with syntax.**

**Q11. Explain boot sequence in Unix.**

**Q12. Write a note on init() process**

**Q13. Explain context switching with suitable diagram.**

**Q14. Write a note on scheduler and its types.**

**Q15.What is threads? Explain Thread Control Block.**

**Q15.What is difference between process and thread?**

**Q16. Write difference between user level kernel level and hybrid threads.**

**Q16.Which are difference multithreading models? Explain with diagrams**

**Q17. Write difference between multithreading models.**

**Q18. Write a note on thread libraries.**

**Q19. Explain threading issues related to fork () and exec ().**

**Q20.Which are different threading issues? Explain.**

**Q21.What is deadlock? Explain with suitable example.  
Q22.Which are necessary conditions for deadlock?**

**Q23. Write a note on deadlock prevention.**

**Q24. Explain banker’s algorithm with suitable example.**

**Q25. Write a note on deadlock detection.**

**Q26. Which are different recovery methods for deadlock?**

**Q27. Explain ostrich algorithm.**

**Q28. Write a note on init() process in android mobile.**

**Q29.What is process scheduling in UNIX.**

**Q30.Which are different system calls for time and clock?**

**UNIT-3**

**Q1. Write a note on memory management techniques.**

**Q2. What is difference between contiguous memory management and non-contiguous memory management?**

**Q3. What is paging? Explain with suitable diagram.**

**Q4. Explain paging model with diagram.**

**Q5. Write a difference between paging and segmentation.**

**Q6. Explain translation look-aside buffer with diagram.**

**Q7. Write a note on virtual memory.**

**Q8. Explain Swapping with suitable diagram.**

**Q9. Write a note on demand paging.**

**Q10.Write a note on Page replacement algorithms**

**Q11.Which algorithm among FIFO, LRU AND OPTIMAL is best for page replacement explain with example.**

**Q12. Write a note on Linux memory management.**

**Q13.Write a note on windows8 memory management.**

**Q14.Write a note on android memory management.**

**Q15.Write a note on logical to physical address conversion.**

**Q16. Which are advantages and disadvantages of demand paging?**

**Q17. Write a note on difference between fixed and dynamic partitioning.**