SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI
Hanuman Vyayam Prasarak Mandals's
College of Engineering & Technology, Amravati
Course: Information Technology
BE Four Year Semester (Information Technology) Summer 2020 Exam
Subject: 5IT01 Operating System
<u>Assignment for ONLY BACKLOG STUDENTS</u>

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Instructions

1) **Solve ANY TWO Questions**
2) **Each Question Carries 10 marks**

QI) Solve the following

1) Define each of the following terms:
   a) Process
   b) Thread   [2M]
2) Define Interrupts? Explain in Detail   [1M]
3) Describe various methods for free space management   [2M]
4) What is buffer cache? Explain its structure in detail.   [1M]
5) What are necessary conditions for a deadlock to occur? Describe how Deadlock can be avoided   [2M]
6) Differentiate between paging and segmentation in detail   [2M]

Q II) Solve the following

1) Describe briefly the Following system components of an O.S
   a) Process management
   b) Main memory Management,   [2M]
2) What is critical region? How is it used in solving critical section problem? Explain with suitable example   [2M]

3) What is segmentation? Give the hardware support needed. Explain how protection and sharing is achieved.   [2M]
4) Explain directory structure in detail   [2M]

5) Compare and contrast the seven RAID levels.   [1M]

6) Explain memory management in Linux   [1M]

QIII) Solve the following

1) What is operating system? Explain the services of operating system in Detail.   [2M]
2) Explain necessary conditions for occurrence of deadlock.   [2M]
3) Explain the principle of demand paging in detail [2M]
4) Explain in brief the following allocation methods
   (i) Linked allocation.
   (ii) Indexed allocation. [2M]
5) What are the services provided by kernel I/O subsystem [1M]
6) Explain process management in Linux. [1M]

QIV) Solve the following

1) What is thread? What are the benefits of multi threaded programming?   [2M]
2) How free disk space is managed?   [2M]
3) What is need of free -space management? Explain   [1M]
4) What is thrashing? What are the causes of Thrashing? How can the effects of thrashing
   be limited?   [2M]
5) What are the components of Linux system   [1M]
6) Differentiate between preemptive scheduling and non-preemptive scheduling algorithm
   [2M]