

**UPES**  
**End Semester Examination, May 2023**

**Semester:**  
**Time : 03 hrs.**  
**Max. Marks: 100**

**Course:**  
**Program:**  
**Course Code:**

**Instructions:**

**SECTION A**  
**(5Qx4M=20Marks)**

S. No.		Marks	CO
Q 1	Explain RAD and how does it help in software development?	4	CO1
Q 2	Explain some scenarios where automation can save time and effort in software development?	4	
Q 3	What is the role of user groups in Linux file system and how do permissions help in controlling access to files and directories?	4	CO2
Q 4	Define package management systems. What is the motivation for building package management software? Provide a clear example with some package management commands in the context of Linux(Ubuntu).	4	CO3
Q 5	Please list and describe atleast 3 third party linux (Ubuntu) monitoring tools. Describe their differences from native linux (Ubuntu) monitoring tools.	4	Co4

**SECTION B**  
**(4Qx10M= 40 Marks)**

Q 6	Explain the key components of a development delivery pipeline and the benefits of automating the build pipeline. Also, discuss how Model-Driven Architecture/Development (MDA/MDD) and code generation can help in improving the efficiency of software development.	10	CO1
Q 7	Explain the Linux file system and how it works. Describe user groups and permissions in Linux and how they can be managed. Also, discuss how Bash scripting can be used to automate tasks in Linux and provide an example script.	10	CO2
Q 8	How do monitor the performance of a linux(Ubuntu) machine? What are the commands related to monitoring different hardware and software parameters for linux? Please explain how CPU, Memory and Disk space is montioered. Provide atleast 3 names of third part Linux monitoring tools and how they are different than native linux monitoring tools.	10	C04
Q 9	Write a make file to build the calculator with simple math operations such as addition, Subtraction multiplication and division or Write a makefile for daily medicine reminder for 9pm. It should also calculate the dose of medicine should be number of grams time date of the month.	10	C03

**SECTION-C**  
**(2Qx20M=40 Marks)**

Q 10	Explain the process of writing automation scripts and discuss the best practices for scripting in software development. Also, explain the purpose/motivation and usage of Make and Makefiles, and provide examples of how they can be used to automate the build process in a software project. Additionally, discuss some of the potential challenges and drawbacks of using Make and Makefiles, and suggest alternative tools or approaches for automation if necessary.	<b>20</b>	<b>CO3</b>
Q 11	Write a pseudo code for a bash script which will list all the process for the user. Further it will sort them based on their PID and then finally cut the PID column from the output.  or Provide an automation script using cron tab for fetching cryptocurrency value equal to INR for every five minutes from a particular website. After every fifty samples calculate their average and variance.	<b>20</b>	<b>C04</b>