Introduction to Software Systems – Spring 2025
QUIZ – 1 – SET A

Total Marks: 30   **Duration: 45 Minutes**

Roll Number: _____   **Marks:**_____

Instructions: This is an in-class written quiz. Please do not forgot to write your roll-number, if the roll-number is empty, you will receive a zero. Please do not attempt the quiz using pencil, this will award you a zero. It is your responsibility to hand over the answer scripts to the invigilator. There are no negative marks for incorrect answers. We provided enough space to answer the questions. All the best!

Fill in the blanks. Each question carries 1 mark (20 Marks)

1. A programming language as semantic and _____syntactic_____ rules

2. _____man_____ command illustrates the documentation of a given command in SHELL

3. _____which_____ command locates the executable file path of other SHELL commands

4. ___interpreter_____ executes code line-by-line during runtime while __compiler_____ translates the entire code into machine code before execution.

5. If **depts** is an array in SHELL, _____ echo $depts _____ will return first value in array.

6. Write the output of `test 15 -ne 10 && echo Yes || echo No` _____15_____

7. ___echo $?_____ displays the exit status of the last executed command in the SHELL terminal

8. _____RAM_____ hardware device in a computer stores information temporarily while _____ROM_____ hardware device in a computer stores information permanently.

9. If `a=$( expr 43 - 5 )` then what does **echo $a** return _____38_____

10. ___bootstrap program_____ is a small initial program that loads and starts the operating system when a computer is turned on.

11. What does this command do? `grep -i "t" < labs.txt` ___search case insensitive 't" or "T" in lab.txt file_____

12. While Standard utility programs are executed in __user_____ mode, operating system is executed in ___kernel_____ mode

13. ___$2_____ represents second command line argument passed to a SHELL script.

14. Single dot souring a script.sh file in command line will convert its variables into session variables [True/False] _____False_____

15. _____$HOME__(any one from evn)_____ is an example of an environment variable in BASH

16. _____kill_____ SHELL command will stop the job when supplied with __jobid_____

Using the following SHELL Script, answer the following questions. Each question carries 2 marks. (10 Marks)

```
1. #!/bin/bash
2. clear
3. totalsize=0
4. currentsize=0
5. for currentfile in /home/sai11101989/*.sh
6. do
7. currentsize=`ls -l $currentfile | tr -s " " | cut -f5 d " "`
8. let totalsize=$totalsize+$currentsize
9. done
10.      echo
11.      echo "Total space used by Script files is:" $totalsize
```

a. What does Line 1 signify and why do we need to write for every SHELL Script?
b. What is happening in Line 5?
c. What is happening in Line 7?
d. Is there any syntax error in any part of this script? If yes, mention the correction. Else mention N/A.
e. If there are 5 files in /home/sai11101989/ folder directory with size 10 KB, 500KB, 75 KB, 900 MB, 0KB. What will be the output of this script?

Answer:

a. In Bash, the term "shebang" refers to the first line of a Bash script that specifies which interpreter will be used when executing the script
b. For every .sh file in the path /home/sai11101989/ is equated to currentfile variable in respective iteration of for loop
c. Overall size of the file read during the iteration of for loop is being calculated using combination of various commands. The command ls –l will be listed for the file passed as argument. The output of this command is fed as input to tr command which transforms and squeezes due –s with spaces. Later the entire output is cut the fifth field from the entire string separated by spaces.
d. -d
e. 944317440 (in bytes)