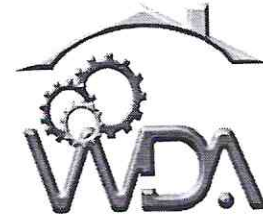


CSC - Operating Systems and
Maintenance

T037

Thursday, 22/11/2018

08:30 - 11:30 AM



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**ADVANCED LEVEL NATIONAL EXAMINATIONS, 2018,
TECHNICAL AND PROFESSIONAL STUDIES**

EXAM TITLE:

OPERATING SYSTEMS AND MAINTENANCE

OPTION: Computer Science (CSC)

DURATION: 3 hours

INSTRUCTIONS:

The paper is composed of **the following Sections:**

- | | |
|---|-----------------|
| Section I: Sixteen (16) compulsory questions. | 55 marks |
| Section II: Attempt any three (3) out of five questions. | 30 marks |
| Section III: Attempt any one (1) out of three questions. | 15 marks |

Note:

Every candidate is required to carefully comply with the above instructions. Penalty measures will be applied on their strict consideration.

Section I. Sixteen (16) Compulsory questions**55 marks**

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- 01.** What are the basic components of any standard operating system? **(3 marks)**
 - 02.** Why is interrupt vector used in operating systems? **(5 marks)**
 - 03.** Every file and directory in LINUX are assigned three types of owners namely 'User', 'Group', and 'Others'. Explain the three kinds of file permissions defined for all the three owners. **(3 marks)**
 - 04.** List the five (5) Linux Directory commands along with their description. **(5 marks)**
 - 05.** You are at a command prompt, and your current directory is C:\Windows\Temp\Files\Old. Which command will get you to the Root of D? **(2 marks)**
 - 06.** Which are the five (5) main different types of Operating Systems based on their areas of application? **(5 marks)**
 - 07.** What Roles does an Operating System play? **(5 marks)**
 - 08.** How can you classify the Server Systems? **(1 mark)**
 - 09.** What are the four (4) basic functions of file management in OS? **(2 marks)**
 - 10.** When designing the file structure for an operating system, what attributes are considered? **(2 marks)**
 - 11.** What are the different types of CPU registers in a typical operating system design? **(2 marks)**
 - 12.** How can the speed of interrupt driven input output systems be improved? **(5 marks)**
 - 13.** Describe the time slice. **(5 marks)**
 - 14.** Describe the context switching. **(5 marks)**
 - 15.** Explain briefly FCFS. **(2 marks)**
 - 16.** Give any three examples of a Process State. **(3 marks)**

Section II. Choose and answer any three (3) questions**30 marks**

17. A) One of the design decisions in OS memory management is the choice between swapping and paging. Define each of these terms, and clarify their respective roles in OS memory management.
B) Define the virtual memory and give four of its advantages. **(10 marks)**
18. A) What is fragmentation? Discuss about different types of fragmentation?
B) What are at least four different types of operating system. **(10 marks)**
19. A) What is pre-emptive and non-preemptive scheduling?
B) State and explain Storage management strategies. **(10 marks)**
20. Clearly describe step by step what would you check if there is no sound from your computer? **(10 marks)**
21. Differentiate the following:
A) A Toolbar from a Taskbar.
B) Intel Celeron from Pentium family of processors. **(10 marks)**

Section III. Choose and answer any one (1) question**15 marks**

22. A) Give one similarity and three differences between Serial and Parallel Ports.
B) Define a computer port, and then among all Computer Ports available explain at least 8 of them. **(15 marks)**
23. A) Complete the OUTPUT columns given Logic gates representation using the Truth table.

INPUTS		OUTPUTS			
A	B	AND	NAND	OR	NOR
0	0				
0	1				
1	0				
1	1				

- B) What is cache memory?
- C) What we need to consider before connecting a memory to a system.
- D) What are operating system services?

(15 marks)

24. Briefly explain the role of the following commands as used in MS-DOS:

Command	Explanation
1. ATTRIB	
2. CHDIR or CD	
3. CHKDSK	
4. CLS	
5. COPY	
6. DEL	
7. DIR	
8. ECHO	
9. EDIT	
10. FORMAT	
11. MEM	
12. MSD	
13. REN	
14. SCANDISK	
15. VER	

(15 marks)