



# ARMY BURN HALL COLLEGE FOR BOYS

## Model Paper – Class AS Level

### SUBJECT: COMPUTER SCIENCE

**Time allowed: 30 Minutes**

**Maximum Marks: 25**

### INSTRUCTIONS

- Write your Roll Number only on the top right corner.
- Do not write your name or any other information.
- Do not use lead pencil.
- Avoid erasing, cutting, overwriting, etc.
- Any sign, mark, name, etc written on Answer Script to disclose your identity will disqualify you for admission to the College.

### SECTION A

**Attempt all questions.**

**Q. 1** A procedure twelve () reads an integer number from the text file number.txt. It then outputs the 12 times table for that number. Write the procedure twelve (). **[3]**

**Q. 2** Five storage devices are described in the table below.  
In column 2, name the storage device being described.  
In columns 3, 4, or 5, tick (✓) to show the appropriate category of storage **[3]**

1	2	3	4	5
Description of storage device	Name of storage device	Category of storage		
		Primary	Secondary	Off-line
non-volatile memory chip; contents of the chip cannot be altered; it is often used to store the startup routines in a computer (e.g. the BIOS)				
optical media which use concentric tracks to store the data; this allows read and write operations to be carried out at the same time				
non-volatile memory device which uses NAND flash memories (which consist of millions of transistors wired in series on single circuit boards)				

- Q.3** Calculate the size of an audio track which is 3 minutes and 30 seconds (210 seconds in total) in length, recorded in stereo, samples at 44kHz (44000Hz) with a sample depth of 16 bits. **[3]**
- Q.4** A teacher wants to work out the average test score for a class. They want to count and total the number of marks they enter to calculate the average. **[2]**
- (a) Explain how they would do this.
- (b) The teacher wants to enter marks till they have no more marks to enter. They do not currently know how many marks they will need to enter. Which loop structure would they use to repeat the process of entering marks and why? **[2]**
- Q.5** When the user starts a new game, they have to input a name that is made of at least 8 letters. This is validated using a length check. Write, using pseudocode, the length check validation for the name. **[4]**
- Q.6** A student has a computer that has a Von Neumann architecture. The CPU in the computer performs the fetch-decode-execute cycle to process data and instructions.
- (a) Identify the name of the component where an instruction is stored immediately before it is fetched into the CPU. **[1]**
- (b) Describe what happens at the decode stage of the cycle. **[3]**
- Q.7** The string operation SUBSTRING(Quote, Start, Number) returns a string from Quote beginning at position Start that is Number characters long. The first character in Quote is in position 1.
- Write pseudocode statements to:
- a) store the string "Learning Never Exhausts The Mind" in Quote
- b) extract and display the words "The Mind" from the string
- c) output the original string in lower case. **[4]**