

1 SEC'94-PAPER 2A-Q4E (CONSULT CH 10)

(e) What is meant by software portability ? Why is machine code not portable but source code portable?

[4]

2 SEC'96-PAPER 1-Q7 (CONSULT CH 10)

Use **TEN** of the following terms to complete the passage below:

		program-counter	disk	-	
ALU	instruction	keyboard	execute	data	
A	ir	struction is made up	of an	speci-	
fying the	operation to be	performed by the		, followed by	
zero or more, specifying the data on which the operation is					
to be per	formed. At the	beginning of a		cycle, the CPU	
places the contents of the on the bus, and					
receives the next instruction over the bus. The instruction is					
	the	register	while it i	s being decoded and	[5]

3 SEC'96-PAPER 2A-Q5 I, II i. What is the difference between an interpreter and a compiler in [3] translating a high level language program into machine code? ii. Explain why it is often convenient for a program to be developed using [3] an interpreter rather than using a compiler.

4	SEC'98-PAPER 1-Q2						
	a.	Why must programs written in a high-level programming language be translated into machine code before they can be executed?	[2]				
	b.	Mention TWO types of translators which can be used to translate programs into machine code.	[2]				
	c.	What is SOURCE CODE?	[2]				

5 SEC'98-PAPER 2A-Q4BC

b.		r the following routine written in assembly language. A semicolon s a comment:	
	LDA 1	; load 1 into the accumulator	
	STA N	; store the contents of the accumulator in location N	
	LDA 5	; load 5 into the accumulator	
-	STA C	; store the contents of the accumulator in location C	
Loo	p:LDA N	; load the contents of location N into the accumulator	
	MUL C	; multiply the contents of the accumulator by the contents of location C	
	STA N	; store the contents of the accumulator in location N	
	LDAC	; load the contents of location C into the accumulator	
	DEC	; decrement the contents of the accumulator	
	STA C	; store the contents of the accumulator in location C	
	JNZ loop	• •	
	RET	zero	
	KL I	; stop	
i.		ne assembly language routine shown above, identify one label , one nic and one operand .	[3]

6 SEC'99-PAPER 1-Q3

Use *ten* of the following terms to complete the passage below:

Compiler <i>Middle</i> Source	debugger high assembler	executable instruction low	translated assembly machine	slower <i>CPU</i> portable	
Pascal is a _		level languag	e. The		
does not		directly understan	d Pascal, so a P	ascal program	
has to be _		into		code by a	
	The Pas	scal program as v	written by the p	programmer is	
called the		code, while the	translated versio	n is called the	
	code. U	nlike a	10	evel language	
such as _		language,	a Pascal	program is	[5]
	, which m	eans that it can be	e compiled to ru	n on a variety	[C]
of processors.					

7 SEC '00-PAPER 1-Q1 (CONSULT CH 10)

What is each of the following called?

(a) A CPU register in which the address of the instruction being executed is	[4]
held:	[1]
(b) Data on which an instruction is to operate:	[1]
(c) The amount of memory a CPU can access:	[1]
(d) The bus driver over which instructions are transferred from main memory to the CPU:	[1]
(e) The language understood by the CPU:	[1]

8 SEC '00-PAPER 1-Q4 (CONSULT CHs 4 & 7) Mention TWO differences between each pair of terms: MAIN and BACKING storage [2] HIGH-LEVEL and LOW-LEVEL programming languages. b. [2] OCR and OMR c. [2] [2] d. A BAR-CODE READER and LIGHT-PEN

9 SEC '01-PAPER 1-Q5

Insert the appropriate words from the list below to complete the passage. Each word may be used once, twice or not at all.

Logic numbers machine code		source Basic	assembler programmer		
macmine coae					
Computers ca	n only understa	nd	W	hen a programmer	
writes a prog	gram a		has to be us	ed to convert the	
	code	into		code. The type of	
translator us	ed depends o	n the pro	gramming langua	ge used by the	
	If the	e program w	as written in a low	level language an	
	may	be used. If it	t was written in a l	nigh level language	
such as		an		has to be used to	
convert high	level statements	into instruc	tions that can be ex	xecuted one by one	
by the central	l processing uni	t. On the ot	her hand, if it was	written by a high	
level languag	ge such as		a	is	[5
used.					L۰

10	SEC	C'01-PAPER 2A-Q2 I II		
	(i)	(a) Distinguish between high-level language and machine code.		
		(b) Mention ONE advanta	age and ONE disadvantage in using each of high	
		level language and ma	schine language in writing programs.	[2,2]
	(ii)	Consider the following	section of an assembly language program	
		MOV A, value 1	; copy value 1 to accumulator	
		CMP A, value 2	; compare the accumulator with value 2	
		JLE lab 1	; jump to lab 1 if accumulator is less than value 2	
		MOV max, A	; copy accumulator to max	
		JMP lab 2	; jump to lab2	
		Lab 1:MOV A, value 2	; copy value 2 to accumulator	
		MOV max, A	; copy accumulator to max	
		Lab 2: HLT	; stop.	
		(a) From the assembly	code routine shown above, identify one label, one	
		mnemonic and one	operand.	[3]
		(b) What is the function	of this section of the code?	[4]

Writing Space for Previous Question	

SEC '02-PAPER 1-Q8 (CONSULT CHs 9& 10) 11 Explain the difference between the following pairs of terms. High Level language and Low Level Language [2] Source Code and Executable Code [2] [2] Address bus and Data bus Data Encryption and Data Compression [2]

12 SEC '04-PAPER 1 Q4

	nslator
Programs using this type of translator run faster.	Compiler
Translates and executes the source code line by line.	
Produces executable code which is stored in a separate file.	
When using this translator the program is translated every time the program is run.	

13 SEC '04-PAPER 2A Q4C

1 2 3 4 5 6 7 8	LAB 1	MOV A,3 STO A,N MOV A,X MUL A,2 STO A,X MOV A,N DEC A STO A,N JNZ LAB1	;move the decimal number 3 to the accumulator ;store accumulator contents to memory location N ;move contents of memory location X to accumulate ;multiply the contents of the accumulator by 2 ;store accumulator contents to memory location N ;move contents of memory location N to accumulate ;decrement the accumulator contents by 1 ;store accumulator contents to memory location N	ator K ator
9 10		HLT	;jump to LAB1 if accumulator is not zero halt	
	(i) (ii) (iii)	Identify the line Suppose that in	ne number where a label is declared. ne number where an instruction refers to a label. nitially 1 is stored in location X. e contents of X and N as they change when this executed.	[1] [1]
			e the contents of X after execution?	[6]
	(iv)	What is the fun	ction of the above assembly program?	[2]
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SE	C '06-PAPER 2A Q3 (CONSULT CHs 5, 8 & 10)	
a)	What is the use of a <i>parity check</i> when transmitting data between two devices?	[2]
b)	Explain the Fetch-Execute cycle.	[4]
c)	Briefly explain the difference between low level languages and high level languages.	[4]
d)	What is the function of the Arithmetic Logic Unit?	[1]
e)	Explain why 'Numeric Overflow' might happen when adding the numeric values of two registers.	[2]
f)	What is the role of the Instruction Register within the Control Unit.	[2]
g)	Explain how a computer's processor speed is measured.	[2]

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