

University of Mumbai

Examination June 2021

Examinations Commencing from 1st June 2021

Program: **Electronics and Telecommunication Engineering**

Curriculum Scheme: Rev2016

Examination: BE Semester VI

Course Code: ECC601 and Course Name: Microcontroller and Applications

Time: 2 hours

Max. Marks: 80

Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	8051 series has how many 16 bit registers?
Option A:	2
Option B:	3
Option C:	1
Option D:	0
2.	When 8051 wakes up then 0x00 is loaded to which register?
Option A:	DPTR
Option B:	SP
Option C:	PC
Option D:	PSW
3.	How are the bits of the register PSW affected if we select Bank2 of 8051?
Option A:	PSW.5=0 and PSW.4=1
Option B:	PSW.2=0 and PSW.3=1
Option C:	PSW.3=1 and PSW.4=1
Option D:	PSW.3=0 and PSW.4=1
4.	If we push data onto the stack then the stack pointer
Option A:	increases with every push
Option B:	decreases with every push
Option C:	increases & decreases with every push
Option D:	none of the mentioned
5.	How many bytes of bit addressable memory is present in 8051 based microcontrollers?
Option A:	8 bytes
Option B:	32 bytes
Option C:	16 bytes
Option D:	128 bytes
6.	DAA command adds 6 to the nibble if:
Option A:	CY and AC are necessarily 1
Option B:	Either CY or AC is 1
Option C:	no relation with CY or AC
Option D:	CY is 1

7.	A valid division instruction always makes:
Option A:	CY=0,AC=1
Option B:	CY=1,AC=1
Option C:	CY=0,AC=0
Option D:	no relation with AC and CY
8.	Which instructions have no effect on the flags of PSW?
Option A:	ANL
Option B:	ORL
Option C:	XRL
Option D:	All of the mentioned
9.	DJNZ R0, label is how many bit instructions?
Option A:	2
Option B:	3
Option C:	1
Option D:	Can't be determined
10.	What is the difference between UART and USART communication?
Option A:	they are the names of the same particular thing, just the difference of A and S is there in it
Option B:	one uses asynchronous means of communication and the other uses synchronous means of communication
Option C:	one uses asynchronous means of communication and the other uses asynchronous and synchronous means of communication
Option D:	one uses angular means of the communication and the other uses linear means of communication
11.	What are t, d, m, I stands for in ARM7TDMI?
Option A:	Timer, Debug, Multiplex, ICE
Option B:	Thumb, Debug, Multiplier, ICE
Option C:	Timer, Debug, Modulation, IS
Option D:	Thumb, Debug, Multiplier, IS
12.	ARM stands for
Option A:	Advanced RISC Machine
Option B:	Advanced RISC Methodology
Option C:	Advanced Reduced Machine
Option D:	Advanced Reduced Methodology
13.	ARM7DI operates in which mode?
Option A:	Big Endian
Option B:	Little Endian
Option C:	Both Big and Little Endian
Option D:	Neither big nor little Endian
14.	The ARM7TDMI-S uses which pipelining?
Option A:	2-Stage
Option B:	3-Stage

Option C:	4-Stage
Option D:	5-Stage
15.	What is the processor used by ARM7?
Option A:	8-bit CISC
Option B:	8-bit RISC
Option C:	32-bit CISC
Option D:	32-bit RISC
16.	What is the instruction set used by ARM7?
Option A:	16-bit instruction set
Option B:	32-bit instruction set
Option C:	64-bit instruction set
Option D:	8-bit instruction set
17.	How many registers are there in ARM7?
Option A:	35 register(28 GPR and 7 SPR)
Option B:	37 registers(28 GPR and 9 SPR)
Option C:	37 registers(31 GPR and 6 SPR)
Option D:	35 register(30 GPR and 5 SPR)
18.	LPC 2148 pro development board has _____ on chip memory.
Option A:	500k
Option B:	625k
Option C:	512k
Option D:	425k
19.	The USB controller provides high speed interface to laptop/PC with a speed of _____
Option A:	On-chip USB with 12Mb/s
Option B:	On-chip USB with 15Mb/s
Option C:	Peripheral USB with 12Mb/s
Option D:	Peripheral USB with 15Mb/s
20.	Which LCD display is present in LPC 2148 Development Board?
Option A:	8*8 LED
Option B:	2*32 LCD
Option C:	2*16 LCD connected peripherally
Option D:	2*16 LCD onchip

Q2	
A	Solve any Two 5 marks each
i.	List the features of ARM7
ii.	Explain 8051 assembler directives.
iii.	Differentiate between ARM and THUMB state.
B	Solve any One 10 marks each

i.	Explain LCD interfacing with 8051 and write assembly language program to display “HI” on it. Draw the connection diagram of 8051 with LCD.
ii.	Explain serial communication of 8051 with the help of SCON register.

Q3	
A	Solve any Two 5 marks each
i.	Draw and explain Program Status Word register of 8051.
ii.	Write a short note on CPSR of ARM7.
iii.	Explain any five addressing modes of 8051 with one example each.
B	Solve any One 10 marks each
i.	Draw and explain data flow model of ARM7.
ii.	Explain Interrupts in 8051 with Interrupt vector table.