FOURTH SEMESTER B.Voc. DEGREE EXAMINATION, APRIL 2022

(Regular/Supplementary/Improvement)

CC18U GEC4 MC12 – MICRO CONTROLLERS AND APPLICATIONS

(B.Voc. – Information Technology)

(2018 Admission onwards)

Time: 3 Hours   Maximum: 80 Marks

PART A

Answer *all* questions. Each question carries 1 mark.

1. The ROM-less Version of the 8051 is -----------
2. True or False: A label is used to name a single line of code.
3. Bit addressable memory locations are -----------
4. ----------- Instruction will add the accumulator and register 3.
5. The I/O port that does not have a dual-purpose role is -----------
6. If we push data onto the stack then the stack pointer -----------
7. The SP is of ----------- wide register.
8. The 8051 microcontroller is of ----------- pin package.
9. Address range of SFR register bank is -----------
10. 8051 series has ----------- 16 bit registers.

(10 × 1 = 10 Marks)

PART B

Answer any *eight* questions. Each question carries 2 marks.

11. What are the uses of accumulator register?
12. What is stack pointer (SP)?
13. What is DAC?
14. Why oscillator circuit is used?
15. Enlist the various flags in the PSW register
16. Name three features of 8051.
17. What are the criteria for choosing a microcontroller?
18. How to switch register banks in 8051?
19. What is the function of IP register in 8051?
20. Draw the format of PCON register of 8051.
21. What is the function of C/T bit in TMOD register?
22. How many timers are in 8051? Specify their names.

(8 × 2 = 16 Marks)

PART C
Answer any *six* questions. Each question carries 4 marks.

23. What is microprocessor and microcontroller?

24. List all the registers used in 8051 microcontrollers in brief.

25. What is stack in the 8051?

26. What is data pointer and program counter?

27. Explain different addressing modes used in 8051 microcontrollers.

28. Explain the following instructions with examples 1) MOVC 2) SJMP 3) JB C 4) MUL

29. What is data transfer instructions? Explain.

30. What is the difference between serial and parallel communication?

31. What are the advantages of LCD over LED? Explain pin description for LCD.

(6 × 4 = 24 Marks)

PART D
Answer any *two* questions. Each question carries 15 marks.

32. Explain the Instruction set with examples.

33. List the interrupts available in the 8051 microcontrollers. Explain interrupt enable (IE) SFR and Interrupt priority (IP) SFR.

34. What is a Timer? Write a short note on Timer modes of operation.

35. Explain interfacing of ADC (Analog -to- Digital Converters) with microcontroller.

(2 × 15 = 30 Marks)

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