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SARDAR PATEL UNIVERSITY

T.Y.B.Sc. INSTRUMENTATION (VOC.) SEMESTER – VI

April 2016

8- Bit Microprocessor Programming

SUB CODE: US06CINV05

DATE: 6TH April 2016

DAY: Wednesday

TIME: 02:30 AM TO 5:30 PM

TOTAL MARKS: 70

Q. 1 Choose the correct answer.

[10]

- (1) Rotate accumulator right instruction is _____.
(A) RLC (C) RAR
(B) RRC (D) None of above
- (2) Maximum time delay using single register program is _____.
(A) 1 mili Sec (C) 1.8 mili Sec.
(B) 1.8 Sec (D) None of above
- (3) _____ is conditional instruction.
(A) PUSH B (C) RNZ
(B) POP PSW (D) None of above
- (4) _____ is one technique of dynamic debugging.
(A) Single step (C) Memory examine
(B) Multi step (D) None of above
- (5) A down counter counts in _____ order.
(A) Discrete (C) Ascending
(B) Descending (D) None of above
- (6) JNC is _____ instruction.
(A) Conditional (C) Rotational
(B) Unconditional (D) None of above
- (7) To design counter and time delay _____ and _____ techniques are used.
(A) Nesting, subroutine (C) Looping , counting
(B) Debugging , indexing (D) None of above
- (8) Counter program used to _____.
(A) Stacking (C) Generate delay
(B) Counting (D) None of above
- (9) RET is _____ byte instructions.
(A) One (C) Two
(B) Three (D) None of above
- (10) The decimal equivalent of FD H is _____.
(A) 255 (C) 253
(B) 155 (D) None of above

- Q.2 Answer the following.(attempt ten) [20]
- (1) State different techniques of dynamic debugging.
 - (2) Define counter and time delay.
 - (3) Define stack and subroutine.
 - (4) List the instruction related to stack.
 - (5) Which instruction are used to retrieve the data from the stack
 - (6) List the arithmetic instruction related to memory.
 - (7) Define- T state in microprocessor.
 - (8) What do you mean by debugging?
 - (9) Define RAR and RLC instruction.
 - (10) Briefly explain ASCII code.
 - (11) Draw the flow chart of counter and time delay using single register.
 - (12) Explain briefly EI and DI instruction.
- Q.3 (A) Discuss different arithmetic instruction related to memory with illustration. [06]
(B) Discuss different compare instruction with illustration. [04]
- OR
- Q.3 (A) Explain different techniques used for debugging a program. [06]
(B) Write a program to load 7A H in register A and rotate content of accumulator twice in right direction. Save the result in memory location 60XX H. [04]
- Q.4 (A) Explain STACK instruction with illustration. [05]
(B) Explain CALL and RET instruction. [05]
- OR
- Q.4 Write a program to count continuously in hexadecimal form CE H to 00 H in a system with 1 microsecond clock period. Setup time delay of 1.0 milli second between each count. Display the count at output port (take no of loop T-state = 14) [10]
- Q.5 Write a program to convert a BINARY number stored in memory to its equivalent BCD number and save answer in output buffer memory. [10]
- OR
- Q. 5 Write a program to convert a BCD number stored in memory to its equivalent BINARY number and save answer in output buffer memory. [10]
- Q. 6 What do you mean by interrupt? Draw interrupt vector diagram and discuss it in detail. [10]
- OR
- Q. 6 Explain following instruction [10]
LHLD, XTHL
ADC M, CMC
DAD Rp,