Q.P. Code: 27819

[Time: 3 Hours]

[Marks: 80]

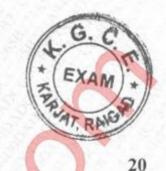
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Please check whether you have got the right question paper.

N.B:

- 1. Question No. 1 is compulsory.
- 2. Attempt any 3 questions out of remaining questions.
- 3. All questions carry equal marks.
- 4. Assume suitable data is necessary.



1. Attempt following.

- a) Define embedded systems. Explain types of embedded systems and give example.
- b) Explain function of following registers.
 - a) BSR
 - b) FST
 - c) W
 - d) PC
- c) Explain following PIC 18 instructions.
 - a) BTFSC
 - b) TBLRD*
- d) Draw and explain interfacing of serial EEPROM with PIC 18 in SPI mode.
- 2. a) Explain working of timer 1 of PIC 18 with prescaling feature in detail.
 - b) Write PIC 18 program to receive byte of data serially and put term on PORTB. Set the baud rate at 9600.
- 3. a) Explain external interrupts of PIC 18 in detail.
 - b) Explain ADC module of PIC 18 in detail.
 - Explain interfacing of DAC to PIC 18 and write a program to generate sawtooth 10
- 4. a) Explain interfacing of DAC to PIC 18 and write a program to generate sawtooth waveform.
 - b) Interface a seven segment LED to PIC 18 and write a program to display decimal counter (0 to 9) on it.
- 5. a) Interface D.C. motor to PIC 18. Write a program to rotate motor with 50% duty cycle using PWM mode of CCP module.
 - b) What is priority inversion? Explain with suitable example.
- 6. Write short notes on any 4
 - a) POPTB change interrupt
 - b) Interrupt latency
 - c) I² C module of PIC 18
 - d) Design challenges for embedded system
 - e) Memory organization of PIC 18