

12/06/2015

QP Code : 3483

(3 Hours)

[ Total Marks :80

- N.B. : (1) Questions No. 1 is compulsory.  
 (2) Attempt **any three** out of remaining questions.  
 (3) Figure to right indicates full marks.  
 (3) Assume suitable data if necessary.

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| 1. Solve any five  | 20 |
| (a) Draw and explain labelled V-I Characteristics of Zener diode   |    |
| (b) Classify single phase controlled rectifier.  |    |
| (c) State important features of op-amp   |    |
| (d) Realize basic gates using NAND gate  |    |
| (e) Explain back EMF in DC motor.  |    |
| (f) Draw generalized architecture of microcontroller   |    |
| 2. (a) Draw and explain single phase full bridge controlled rectifier with the help of waveforms for R-load, Derive the output voltage equation. | 7  |
| (b) Explain architecture of MSP430   | 7  |
| (c) Compare R & R C triggering methods of SCR.   | 6  |
| 3 (a) Explain IC555 as monostable multivibrator.   | 7  |
| (b) Compare CMOS and TTL logic family  | 7  |
| (c) Draw and explain torque-speed characteristics of DC series and DC shunt motor, Also state application of each.                               | 6  |
| 4 (a) Explain first order filter circuit.  | 7  |
| (b) Explain various registers used for digital I/O of MSP430   | 7  |
| (c) Analyse torque-speed characteristics of induction motor. State various methods of speed control of induction motor.                          | 6  |
| 5 (a) What is commutation of SCR? Explain any one method in detail   | 7  |
| (b) Explain closed loop speed control of DC motor, What is the necessity of inner current loop   | 7  |
| (c) What is decoder, Demultiplexer and flip-flop   | 6  |
| 6 (a) Explain suitability of different electric motors for various industrial applications.  | 7  |
| (b) Explain with appropriate waveforms the operation of single phase bridge inverter circuit.  | 7  |
| (c) Explain different peripherals of MSP430, Why is it called as mixed signal processor?   | 6  |

Corrections  
Attached ✓

Course: S.E.(SEM. IV)(CBSGS)(MECHANICAL) CW  
(AUTOMOBILE)(PROG 791 TO 805)

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Correction:

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Q. No.(3)(a)

Read AS:

monostable

Instead of:

Monaostable

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Query Update time: 12/06/2015 02:50 PM