

- Note : 1) Diagrams should be neat and labeled.
2) All questions are compulsory.
3) Figures to the right indicate marks.

ES-3

Q. 1 Answer the following : (Any two) :

10

- 1) Explain the difference between Big endian and Little endian ?
- 2) Write what is embedded system and give application areas of embedded system.
- 3) Explain USB as communication interface with diagram.
- 4) Explain serial peripheral interface in detail ?

Q. 2 Answer the following : (Any two) :

10

- 1) Explain any five characteristics of embedded system ?
- 2) Explain automobiles in details with its communication interface types ?
- 3) Write short note on washing machine.
- 4) Explain non-operational quality attributes ?

Q. 3 Answer the following : (Any two) :

10

- 1) Explain structure of embedded program ?
- 2) Write short note on compiling process.
- 3) Explain linking and locating process of embedded program in detail ?
- 4) Write a short note on infinite loop ?

Q. 4 Answer the following : (Any two) :

10

- 1) Use CRC algorithm for testing memory for sender and receiver side message, original message is 11010011101100 and generator polynomial is 1011.
- 2) Write a short note on address bus test.
- 3) Explain memory map and interrupt map ?
- 4) Explain RAM and ROM memory with their types ?

Q. 5 Answer the following : (Any two) :

- 1) Write short note on embedded operating system.
- 2) Explain watchdog timer in detail ?
- 3) Write short note on scheduling points.
- 4) Explain deadlock and priority inversion concept ?

Q. 6 Answer the following : (Any two) :

- 1) Explain types of file generated in cross-compilation process ?
- 2) Explain simulator and emulator in detail ?
- 3) Explain life cycle of embedded system development ?
- 4) Explain the concept of IDE in detail ?

Q. 7 Answer the following : (Any three) :

- 1) Write short note on COTS.
- 2) Explain any five operational quality attributes ?
- 3) Explain simulator, oscilloscope and logic analyzer ?
- 4) Write short note on CRC algorithm.
- 5) Explain task and multitask in detail ?
- 6) Define the following :
 - i) Sensor
 - ii) Actuator
 - iii) I2C
 - iv) NVRAM
 - v) PROM

— The End —