

M.E. (Computer Engineering)
FAULT TOLERANT SYSTEMS
(2017 Pattern) (610101) (Semester-III)

Time : 3 Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) Attempt Q.No.1 or Q.No.2, Q.No.3 or Q.No.4, Q.No.5 or Q.No.6, Q.No.7 or Q.No.8, Q.No.9 or Q.No.10, Q.No.11 or Q.No.12.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Assume suitable data if necessary.

Define Fault, Error and Failure. List different phases for system development and explain with an example how fault may occur and propagate in these phases. [8]

OR

Enlist and explain different Analytical Techniques available for computing the reliability of the system? [8]

List different Fault Simulation Algorithms. Explain any two fault simulation algorithms in detail. [8]

OR

Explain combinational and sequential fault diagnosis techniques. [8]

Define an n-dimensional Hypercube. Explain how Hamming difference between two addresses is calculated. Draw 4-cube architecture. [9]

OR

Explain Depth-first Search Approach for Fault-Tolerant Routing Algorithms in Hypercube. [9]

Describe general architecture of the Hyper Torus Network with diagram. Describe how fault coverage percentage is calculated. [8]

OR

P.T.O.

05-0-2018

Q8) What is Block Shift Network? Explain the following connection methods for the connections on dimensions in Block Shift Network. [8]

- a) Concurrent connection.
- b) Sequential connection.
- c) Parallel connection.

Q9) Write and explain reliability expression of [8]

- a) Token ring network.
- b) By-pass switch network.

OR

Q10) Explain Daisy chain and Double loop architecture with diagram. [8]

Q11) List types of failures. Describe each of type of failure with an example. [9]

OR

Q12) Explain Byzantine Agreement Problem with suitable example. [9]

