



B.TECH DEGREE EXAMINATIONS: MAY 2015

(Regulation 2013)

Fourth Semester

TEXTILE TECHNOLOGY

U13TXT401 : Automation in Textile Industry

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. Automation normally used to _____ quality.
2. What key hardware item ties a CAD/ CAM system together?
 - a) Mouse
 - b) Digitizer
 - c) Graphics workstation
 - d) Plotter
3. Which of the following is a graphical input device?
 - a) Light pen
 - b) Mouse
 - c) Keyboard
 - d) Track ball
4. Which of the following symbol modes are used to input of graphics to General CAD system?
 - a) Arc and circle mode
 - b) Dimension and alphanumeric mode
 - c) Line and rectangular mode
 - d) Point and square mode
5. PLC means _____
6. What is the difference between integral and derivative control?
 - a) Derivative control does not eliminate offset error
 - b) Derivative control responds to a change in the rate of change in the error signal
 - c) Integral control has slower response to an error signal
 - d) Integral control the data acquisition and not derivative control
7. In an open loop control system output is _____ of input.
8. Digital signals have _____ shape.
9. Which device does the general population associate most with automation?
 - a) Flexible manufacturing
 - b) Numerical control machine
 - c) Robotics
 - d) Computer graphics workstation
10. CAD means_____.

PART B (10 x 2 = 20 Marks)

(Not more than 40 words)

11. Write the necessity of industrial automation in textile industry.
12. Highlight the importance of material handling system in apparel industry.
13. What is the function of remote terminal unit in automation system?
14. List out any two uses of interfacial graphics in process control.
15. Write the principle of auto leveler used in spinning machinery.
16. Categorize the automation system adopted in rotor spinning machine.
17. State the principle of yarn cleaner control in winding machines.
18. Write the scope of automation in humidification system in textile industry.
19. Compare the applications of CAD and CAM in textile industry.
20. Prioritize the scope of robotics applications in textile industry.

PART C (5 x 14 = 70 Marks)

Not more than 400 words)

Q.No. 21 is Compulsory

21. a) With a neat sketch explain the working principle and implementation of material handling system in textile or apparel industry and also state their features.

22. a) (i) With neat sketches explain the application and working concept of SCADA automation system and brief their features in automation of textile industry. (8)
(ii) Brief the features and concept of data acquisition system in automation system. (6)

(OR)
- b) (i) Explain the computer graphic generation and interfacing graphics used in the apparel industry. (8)
(ii) Give an account on reliable system in auto leveler and their development strategy in draw frame machine. (6)

23. a) (i) With neat flow chart explain the scope and existing automation system in spinning industry and also brief their features. (10)
(ii) Brief the various models of safety switch used in spinning machinery. (4)

(OR)
- b) (i) Explain the control system and automation in ring spinning machinery with necessary sketches. (10)

(ii) Give an account on automation and their features in spinning preparatory machineries with neat sketches. (4)

24. a) (i) Enumerate various control system and automation in weaving machinery with neat sketches and also brief their salient features. (10)

(ii) Write control system and monitoring system in warping machines. (4)

(OR)

b) (i) With neat sketch explain the data acquisition system in weaving preparatory and loom shed and also brief their importance in improving productivity and minimizing manual errors in weaving. (10)

(ii) Give an account on automation and control system in sizing machine. (4)

25. a) (i) Explain the need and applications of CAD and CIM in weaving process. (7)

(ii) Correlate the working system of CAD and CAM in apparel industry. (7)

(OR)

b) (i) Explain the applications of CAD, CAM and CIM in textile dyeing and printing units and also brief their importances. (10)

(ii) Give an account on applications of E-commerce and Robotics in textile industries with neat sketches. (4)
