Subject: Application of Computer in Wet Processing (Code: WPE 347)

Time: 2.00 Hrs.   Full Marks: 70

(Use separate answer script for Part: A and Part: B)
(All parts of a question must be answered consecutively)

Part: A
(Answer any two questions)

1. (a) Define system development life cycle (SDLC). Illustrate the different phases and mention what happens in each phases of SDLC.
   (b) What is system analysis? Describe how the system analyst's can solve a problem in SDLC.
   (c) Distinguish between system analysis and system design.

[9.5+4+4=17.5]

(a) State and explain the net-benefit analysis method of cost-benefit evaluation.
(b) Draw a physical data flow diagram of university undergraduate admission.
(c) "Project management objectives are defined in terms of expectations of time, cost and quality"- Explain the statement with example.

[5+6+6.5=17.5]

(a) What is software testing? Define white box testing and integration testing.
(b) What are the differences between software validation and software verification?
(c) Write short note on CAD/ CAM.
(d) Define the automation terminologies: Robot, Sensor and Simulation.

[5+3.5+6+3=17.5]

Part: B
(Answer any two questions)

(a) Define database management system (DBMS) with examples.
(b) Explain the limitations of a DBMS.
(c) With example differentiate between instance and schema.
(d) What is transaction management? What are roles of a database administrator?

[3+6+3.5+5=17.5]

(a) Write short note on application of CAD/ CAM in Textile Engineering.
(b) What is software? Differentiate between software validation and verification.
(c) Write an application program for partial fulfillment of adding new recipe by interacting method to show multiple menu is listed as-
   (i) Add recipe;
   (ii) Review or change existing recipe;
   (iii) List all recipes and
   (iv) Reuse dying or exit.

[6+4+7.5=17.5]

Consider the following project activity table:

Activity	Predecessor	Mean Duration
A	-	5
B	-	4
C	A	6
D	B	3
E	A, C	8
F	D	9
G	C, E	4
H	E, F	7
I	E, F	2
J	D, H	5
K	I, G	4

Now for the above table answer question (a), (b) and (c).

(a) Construct the project network.
(b) Tabulate the total float (TF) and free float (FF) of each activity in detail.
(c) A company makes two kinds of leather belts. Belt A is a high quality belt, and belt B is of lower quality. The respective profits are Tk. 0.40 and Tk. 0.30 per belt. Each belt of type A requires twice as much time as a belt of type B, and if all belts were of type B, the company could make 1,000 per day. The supply of leather is sufficient for only 800 belts per day (both A and B combined). Belt A requires a fancy buckle, and only 400 per day are available. There are only 700 buckles a day available for belt B. What should be the daily production of each type of belt? Formulate the linear programming problem.

[7+5.5+5=17.5]

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BANGLADESH UNIVERSITY OF TEXTILES

B.Sc. in Textile Engineering
Level-3 Term-II, Final Examination-2014

Subject : Application of Computer in Wet Processing (Code: WPE 347)

Time: 2.00 Hrs.

Full Marks: 70

(Use separate answer script for part: A and Part: B)
(All parts of a question must be answered consecutively)

Part-A
(Answer any two questions)

1. (a) In the processing line from fibre to fashion, what are the softwares you would recommend for higher production and accuracy? Briefly describe the functions of those softwares.

   (b) Describe with suitable example the economic viability of latest textile softwares in the production line.

   (c) Mention the essential hardware and software for LECTRA Apparel CAD. Give short notes on their functionality.

   [8.5+5+4.5=17.5]

2. (a) List out the consecutive tasks under SKETCH level of Modaris with their purpose.

   (b) Why is SIZE TABLE important to you? Explain the rules for NUMERIC SIZE TABLE with suitable example and show the procedure of attaching it with Modaris.

   (c) Why do you need to define ACCESS PATH? How will you define ACCESS PATH in Modaris?

   [9+6+2.5=17.5]

3. (a) What is VARIANT in Modaris? Explain its importance and procedure of creating a VARIANT.

   (b) Describe the procedure of generating automatic marker in Diamino.

   (c) Compare the benefits of automatic marker generation and manual marker generation.

   [8+4.5+5=17.5]

Part-B
(Answer any two questions)

4. (a) Define database management system (DBMS) with examples.

   (b) Explain the levels of abstraction of a database.

   (c) Which data model is used in physical database design? Explain with examples.

   (d) What is transaction management? What are roles of a database administrator?

   [4+4+3.5+6=17.5]

5. (a) What do you mean by "Recipe by Recal" and "Recipe by Measure"? Show the procedure of generating "Recipe by Recall" in ProPalette Textiles.

   (b) What is "Substrate"? Explain the jobs associated with "Substrate"

   (c) Explain the procedure of assessing shades by "Recall".

   [6+7+4.5=17.5]

6. (a) Describe the check list for configuring a new spectrophotometer under standard laboratory practice.

   (b) Describe the weak points in maintaining a spectrophotometer that may lead to incorrect recipe formulation.

   (c) Explain the usefulness of Spectrophotometer in a dyeing industry.

   [8+7+2.5=17.5]

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BANGLADESH UNIVERSITY OF TEXTILES

B. Sc. in Textile Engineering
Level-3 Term-II, Final Examination-2015

Subject: Application of Computer in Wet Processing (Code: WPE 347)

Time: 2.00 Hrs.   Full Marks: 7[

(Use separate answer script for Part: A and Part: B)
(All parts of a question must be answered consecutively)

Part: A
(Answer any two questions)

1. (a) Define system, system analysis and system design.
   (b) What are the different phases of the system development life cycle? Briefly describe them.
   (c) Describe the guidelines for system development life cycle.
   (d) What is system analyst? Describe the project management software.

   [3+5+5+4.5=17.5]

2. (a) What is automation? Distinguish between automation and robotics.
   (b) Briefly describe the applications of automation.
   (c) Describe the basic components of modern automation system.
   (d) Design the automation process in dyeing industry.

   [3.5+4+5+5=17.5]

3. (a) How can you define the production system?
   (b) Write down the cycle of production system facilities for manufacturing industry.
   (c) Define relational database management system (RDBMS). Explain essential features of it.
   (d) What do you mean by schema and instances?

   [2.5+6+7+2=17.5]

Part: B
(Answer any two questions)

4. (a) What are the software you would suggest for wet processing industry? What are their benefits?
   (b) As a CEO you are going to set up a fashion development studio in your factory. Briefly describe the scope of specialized software you would recommend.
   (c) How can virtualization minimize costing in product development?

   [7+7+3.5=17.5]

5. (a) What are the primary modules in spectrophotometer? What are their functions?
   (b) Describe the weak points in maintaining a spectrophotometer that may lead to incorrect recipe formulation.
   (c) A factory is facing problem with their spectro recipe and you have been hired as expert to find out the solution. Explain the points you would address.

   [6+6+5.5=17.5]

6. (a) What is "Substrate"? Explain the jobs associated with "Substrate".
   (b) What is Recipe by Recall? How will you formulate a Recipe by Recall in spectro?
   (c) Identify the possible weak point in substrate handling in spectro and explain their consequence.

   [5+7.5+5=17.5]

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B. Sc. in Textile Engineering
Level-3 Term-II, Final Examination-2016

Subject: Application of Computer in Wet Processing (Code: WPE 347)

Time: 2.0 Hrs. Full Marks: 70

(Use separate answer script for Part: A and Part: B)
(All parts of a question must be answered consecutively)

Part: A
(Answer any two questions)

1. (a) As an executive director you are going to set up automation process in a dye house. Briefly describe how the specialized system you will implement?
   (b) What is PLC? Briefly explain the operational sequence of PLC.
   (c) Distinguish between PLC and SCADA system.
   (d) Why Enterprise Resource Planning (ERP) system is most essential in the modern factory?

   [5+4+3.5+5=17.5]

2. (a) Describe the basic principles of CAD and CAM software.
   (b) "System Analyst is a business problem solver" Explain it.
   (c) Draw the system development life cycle and briefly mention every stages.
   (d) Suppose you want to set up a textile factory, so what are the methods you will choose for costs/benefits evaluation.

   [5+3+6+3.5=17.5]

3. (a) What is a spectrophotometer? How it works?
   (b) Discuss the general principle and method of operation of a spectrophotometer by your own word.
   (c) What is SDLC? How SDLC relates with feasibility cost and benefits projects?

   [3.5+8+6=17.5]

Part: B
(Answer any two questions)

4. (a) What is SQL?
   (b) Using SQL how can you do program in a FONG's dyeing machine involving the semibleach process. Give proper dyeing curve for the operation and also use the icon involved in the operation for this programming process. Also mention the after wash operation after the process.

   [2+15.5=17.5]

5. (a) What is database and data management?
   (b) What is data redundancy? How many types of database are there? Which one do you think is better for textile?
   (c) What is a data flow? What are the data security technologies? Discuss with your own words.
   (d) Write down the algorithm used in data science.

   [2.5+6+7+2=17.5]

6. (a) Describe the application of computer control in the Batch dyeing industry.
   (b) How color fastness assessing can be controlled by computer technology?
   (c) Distinguish between software validation and software verification.
   (d) What are the advantages of programmable Automation Process?

   [5+4.5+3+5=17.5]

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Subject: Application of Computer in Wet Processing (Code: WPE 303)

Time: 3.0 Hrs.   Full Marks: 72

(Use separate answer script for Part: A and Part: B)
(All parts of a question must be answered consecutively)

Part: A
(Answer any three questions)

1. (a) What kind of computer aided process machineries are used in wet processing industry?
   (b) Why ERP systems are essential in modern dye house?
   (c) How can we apply the computer technology in printing industry?
   (d) Describe the applications of computer in testing equipment for coloration industry.

   [3+3+3+3=12]

2. (a) Why Data color machines are mostly popular in dye house?
   (b) Illustrate a schematic diagram of modern data color machines.
   (c) What is calibration? What kinds of accessories are used for data color calibration?
   (d) Describe the different aperture used for data color machines.

   [3+3+3+3=12]

3. (a) What is Expert system? Describe the development of an expert system.
   (b) Why artificial intelligence is used in dye house?
   (c) Describe the advantages and disadvantages of an expert system.
   (d) Mention the applications of artificial neural networks.

   [3+3+3+3=12]

4. (a) What is PLC?
   (b) Describe the use of PLC in soft flow winch dyeing machine.
   (c) What do you know about auto dispensing system? Discuss the application and its procedure.

   [2+5+5=12]

Part : B
(Answer any three questions)

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5. (a) Define CAD and CAM.
   (b) Describe the needs and benefit of CAD and CAM.
   (c) Write down the scope of CAD and CAM.
   (d) Define process optimization. What are the areas of it?

   [2+3+2+5=12]

6. (a) Define the cycle time for winch dyeing machine.
   (b) Write the programming procedures for the semi-bleach process with dyeing curve for FONG'S dyeing machine.

   [2+10=12]

7. (a) What is data management?
   (b) Write down the data security technologies used for saving data from corruption.
   (c) Write down the international laws and standards associated for data management.

   [2+5+5=12]

8. (a) Differentiate between logical DFD and physical DFD.
   (b) Briefly describe the project management basics.
   (c) Draw the symbols of different DFDs.

   [4+4+4=12]

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BANGLADESH UNIVERSITY OF TEXTILES
B. Sc. in Textile Engineering
Level-3 Term-I, Final Examination-2019

Subject: Application of Computer in Wet Processing (Code: WPE 303)

Time: 3.0 Hrs.   Full Marks: 72

(Use separate answer script for Part: A and Part: B)

(All parts of a question must be answered consecutively)

Part: A
(Answer any three questions)

1.
(a) Illustrate the single beam high accuracy spectrophotometer.
(b) Distinguish between single and double beam spectrophotometer.
(c) Briefly mention the system to check the accuracy of the photometric reading in data color machine. $P \times \beta - (A + \beta)$
(d) Describe the color measurement techniques for considering the sample thickness and sample positioning of dyed fabrics.

[2+3+4+3=12]

2.
(a) Define PLC. What are the basic components of PLC?
(b) Write short note on PLC operation sequence.
(c) What is ladder logic? Give an example of ladder logic.
(d) Write down the applications of PLC.

[4+4+3+1=12]

3.
(a) Define artificial intelligence. State the timeline of modern history of artificial intelligence.
(b) How expert systems used in textile coloration?
(c) Explain the strength and weakness of artificial neural networks.
(d) State the applications of an expert system.

[4+3+3+2=12]

4.
(a) Design the structure of future dye house and explain it briefly.
(b) Mention the structure of an adaptive controller system for dyeing process.
(c) Draw a schematic diagram of automated package dyeing machine and explain it.
(d) What are the factors influence the outcome of the dyeing process? circulation

[4+3+3+2=12]

Part: B
(Answer any three questions)

5.
(a) What is relational data model? Write down the advantages and disadvantages of relational data model.
(b) What are the differences between TFBS and DBMS?
(c) Suppose you are the GM of a textile industry, what factors will you consider for selecting a suitable DBMS?
(d) Define database architecture. Explain the types of database architecture.

[3+3+3+3=12]

6.
(a) Justify the statement "ERP is the latest high-end solution for textile manufacturing industry".
(b) Why fuzzy logic controller is essential for dyeing process?
(c) What do you mean by process optimization? What are the stages of new product development?

[4+4+4=12]

7.
(a) Define CAD and CAM. What are the components of a CAD/CAM system?
(b) Write short note on different software used in textile industry.
(c) Suppose you recently implemented CAD/CAM in your industry, how will you be benefited from it?
(d) What do you mean by calibration?

[4+4+2+2=12]

8.
(a) Define SQL. What are the characteristics of SQL?
(b) What are the data types in SQL? Explain.
(c) Define encryption. What are the types of encryption?
(d) Write short note on DFD.

[3+4+3+2=12]

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