Code No. 14784/CBCS

FACULTY OF ENGINEERING

B.E. (Civil) VIII-Semester (CBCS) (Main & Backlog) Examination, July 2021

Subject: Retrofitting and Rehabilitation of Structures (E-III)

Time: 2 hours **Max. Marks: 70**

Note: Missing data, if any, may be suitably assumed.

PART – A

Answer any Five questions. **(5x2 = 10 Marks)**

1 Distinguish between the terms preservation and renovation of structures.
2 What is distress in structures?
3 What are the types of defects in structures during construction stage of a building?
4 What are the types of deterioration in steel structures?
5 What are causes of cracks in structures?
6 What is need of maintenance of a building?
7 Name any two non-destructive testing methods for strength estimation of concrete.
8 What are the stages of conditional assessment of structures?
9 What are the test methods used for testing the chemical attacks on concrete?
10 Differentiate between Routing and Sealing types of crack repair techniques.

PART – B

Answer any Four questions. **(4x15 = 60 Marks)**

11 Write short notes on the mechanism of deterioration caused in concrete structures due to
   (a) Alkali Silica Reaction (ASR)
   (b) Acid Attack

12 What are the types, causes and characteristics of cracks in buildings?

13 What are the aspects considered while conducting the visual inspection of a deteriorated G+5 reinforced concrete framed building?

14 Write in detail the description, application, advantage and limitation of Half-Cell Electrical Potential Method to assess the corrosion potential of concrete.

15 Write about repair techniques for structural retrofitting using
   (a) Mortars
   (b) Gunite or shotcrete
   (c) Epoxy

16 Write short notes on the following methods:
   (a) Test for carbonation of concrete for testing the chemical attack on concrete.
   (b) Rebound hammer test for strength estimation of concrete.

17 Write in detail about the various techniques for strengthening of columns
   (a) Flexural strengthening of beams.
   (b) Shear strengthening of beams.

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Code No. 14786/CBCS

FACULTY OF ENGINEERING

B.E. (Civil) VIII-Semester (CBCS) (Main & Backlog) Examination, July 2021

Subject: Applied Hydrology (E-III)

Time: 2 hours **Max. Marks: 70**

Note: Missing data, if any, may be suitably assumed.

PART – A

Answer any Five questions. **(5x2 = 10 Marks)**

1 How flood stage is measured and what is its importance in flood studies?
2 Define the term standard project flood and where it is used.
3 What do you mean by short range flood forecasting?
4 What is hydraulic routing and what are the basic equations used in this method?
5 What do you mean by flood routing with regulated outflow?
6 What is a detention reservoir?
7 How do you estimate the benefits of flood mitigation?
8 What do you understand by spectral analysis in floods?
9 Define the term time series.
10 What is correlogram?

PART – B

Answer any Four questions. **(4x15 = 60 Marks)**

11 (a) Explain any two measurable features of flood.
(b) Explain flood forecasting by Unit hydrograph method.

12 Explain Muskingum method for flood routing.

13 Explain ISD method of flood routing.

14 (a) Explain flood mitigation by reservoirs.
(b) Explain flood control economies.

15 (a) Explain the possible adjustments to be made in flood plain lands.
(b) Explain the various types of river training works.

16 (a) Explain the various components of hydrologic time series.
(b) Explain serial correlation coefficient and correlogram.

17 Write short notes on:
(a) Modified Puls method
(b) Gyrones

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Code No. 14787/CBCS

FACULTY OF ENGINEERING

B.E. (Civil) VIII-Semester (CBCS) (Main & Backlog) Examination, July 2021

Subject: Introduction to Climate Change (Elective – III)

Time: 2 hours **Max. Marks: 70**

Note: Missing data, if any, may be suitably assumed.

PART – A

Answer any Five questions. **(5x2 = 10 Marks)**

1 Define Humidity and Vapour pressure.
2 Write the effects of Climate change on Earth.
3 What is Heat balance of Earth Atmosphere?
4 Enlist causes of instability of atmosphere.
5 List out types of clouds.
6 Write about different Drought indicators.
7 Explain the process of modelling of Climate change.
8 Write a short note on IPCC Assessment Report.
9 Write the about Regional climate models.
10 State the applications of Regression models.

PART – B

Answer any Four questions. **(4x15 = 60 Marks)**

11 (a) Explain in detail the effects of Radiation and temperature on Climate.
(b) Write about Vertical structure of atmosphere with a neat sketch.

12 (a) Describe with a neat flow diagram cycling of water on land.
(b) Explain vapour pressure and atmospheric stability.

13 What is ISMR? Discuss the characteristics of ISMR.

14 What are the causes of Climate change? Briefly discuss Coupled Model inter-comparison project.

15 Define downscaling. Describe in detail concepts of statistical downscaling.

16 (a) Describe in detail about the Reanalysis data products.
(b) Write in detail about the data reduction techniques.

17 Write short notes on any **two** of the following:
(a) Laws of Radiation
(b) Floods
(c) Bias correction methods

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Code No: 14822/CBCS

FACULTY OF ENGINEERING

BE VIII-Semester (CBCS) (ECE) (Main & Backlog) Examination, July 2021

Subject: Internet of Things (Elective-III)

Time: 2 Hours **Max marks: 70**

Missing data, if any, may be suitably assumed

PART – A

Note: **Answer any Five questions**. **(5x2=10 Marks)**

1. Define IOT and List out the characteristics of IOT
2. Explain IOT with an example
3. Explain four pillars of IOT and how they are interconnected with each other.
4. What are different challenges if IOT?
5. What effect will the IOT have on our daily lives? Explain with example of smart device
6. Explain different networking and communication model in IOT
7. What is the relation between WSN and IOT explain
8. What are different business and research opportunities for IOT
9. Explain TCPIP Vs IOT protocol stack
10. What is the role of cloud computing and big data in IOT

PART - B

Note: Answer any Four questions. **(4x15=60 Marks)**

11. a) Explain the detail IOT Architecture with neat diagram.
    b) Write in detail applications of internet of things
12. a) Describe application protocols for IOT
    b) What are the techniques used in prototyping the physical design of the arduino
13. a) Explain the case study on IOT system for weather monitoring
    b) Explain detail design guidelines of Internet of things
14. a) Write note on control flow and functions
    b) Explain about different data types of python and what are different packages for IOT
15. a) Write in detail business model scenario for IOT
    b) Discuss in detail business innovation in IOT product manufacturing
16. Write note on
    a) Weather monitoring b) Smart agriculture
17. a) Discuss in detail about different functional blocks of IOT with neat diagram
    b) Discuss about IOT enabling technologies.

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Code No.14823/CBCS

FACULTY OF ENGINEERING

B.E. VIII-Semester (ECE) (CBCS) (Main & Backlog) Examination, July 2021

Subject: Neural Networks (Elective-III)

Time: 2 Hours **Max.Marks: 70**

Note: Missing data, if any, may be suitably assumed

PART – A

Answer any Five questions **(5x2=10 Marks)**

1 State the functionalities of perception.
2 List out the classification of Neural Networks.
3 What are the requirements of learning laws.
4 Explain unsupervised leaving.
5 What do you understand by associative networks?
6 What is back propagation algorithm for a multi-layer network will do?
7 State convergence theorem.
8 Draw a suitable diagram of a simple artificial neuron.
9 How a Boltzmann machine will work?
10 Write the applications of Hopfield network.

PART – B

Answer any Four questions **(4x15=60 Marks)**

11 a) List any four neuronal signal function used in ANN.
b) Explain the learning algorithm in neural network.

12 a) What is neural learning? Draw and explain the general neuron mode.
b) Distinguish between activation and synaptic dynamics mode.

13 a) Explain how bidirectional associate memory used as a Hetro associative memory.
b) Discuss about auto associate memory.

14 a) Discuss pattern mode training and batch mode training in back propagation algorithm.
b) Explain the architecture of full counter propagation neural network with a neat diagram.

15 a) Draw the architecture of hop field auto-associative memory. Also explain electronic circuit interpretation of additive dynamic structure.
b) Write difference between Boltzmann machine and Hopfield network.

16 a) Discuss briefly the two networks used for prediction problem.
b) Deceive expression for Boltzmann learning rule.

17 Write short notes on:
a) Supervised learning
b) Kohen self-organizing networks.

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Code No. 14824/CBCS

FACULTY OF ENGINEERING

B.E. (ECE) VIII-Semester (CBCS) (Main & Backlog) Examination, July 2021

Subject: Satellite Communications (E-III)

Time: 2 hours **Max. Marks: 70**

Note: Missing data, if any, may be suitably assumed.

PART – A

Answer any Five questions. **(5x2 = 10 Marks)**

1 Define the substatellite point.
2 Write an expression for apogee and perigee heights.
3 What is cross polarization discrimination?
4 Explain briefly about the sun transit outage.
5 Draw the diagram of Wide Band Receiver.
6 Explain the concept of frequency reuse.
7 Describe briefly about system noise.
8 What is an EIRP?
9 List out the applications of Radarsat.
10 Draw the block diagram of DBS-TV uplink earth station.

PART – B

Answer any Four questions. **(4x15 = 60 Marks)**

11 (a) Define six Orbital elements of satellite.
(b) State Kepler's laws of planetary motion with a neat sketch.

12 (a) Deduce an expression for look angles of a geostationary satellite.
(b) Explain the working of double reflector antennas.

13 (a) Describe how attitude control is established through various stabilization techniques.
(b) Explain the working of outdoor unit and indoor unit for a DBS home receiver with a neat block diagram.

14 (a) Deduce the Link Power Budget Equation.
(b) Explain the TDMA burst and frame structure of satellite system. Draw the necessary diagrams.

15 Illustrate with necessary equations why a minimum of four satellite must be visible at an earth location utilizing the GPS system for position determination.

16 (a) Write a short note on Rain depolarization.
(b) Explain the working of Satellite TWTA.

17 (a) Write a short note on orbital perturbations.
(b) Describe the operation of typical VSAT system.

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Code No. 14837/CBCS

FACULTY OF ENGINEERING

B.E. (Mech.) VIII-Semester (CBCS) (Main & Backlog) Examination, July 2021

Subject: Power Plant Engg. (Elective – III)

Time: 2 hours **Max. Marks: 70**

Note: Missing data, if any, may be suitably assumed.

PART – A

Note: Answer any Five questions. **(5x2 = 10 Marks)**

1 Explain the requirement of good coal handling plant.
2 List out various steps involved in coal handling equipments.
3 List out the advantages for dewatering or cleaning of coal.
4 Sketch the general layout of ash handling and dust collection system.
5 What is a flow duration curve? Explain.
6 Explain hydrological cycle.
7 Explain the function of a moderator.
8 On what factor does the nuclear reaction rate depends?
9 Define utility factor and plant operating factor.
10 Define average load, load factor and delivery factor.

PART – B

Note: Answer any Four questions. **(4x15 = 60 Marks)**

11 With a help of neat sketch, explain belt conveyor and screw conveyor systems.

12 What do you understand by Overfeed and Underfeed fuel beds? What are the different types of Stokers for fuel burning systems? Explain any two in detail.

13 Draw a neat diagram of storage type hydroelectric power plant and describe the function of each component used in the plant.

14 Explain the construction and working of boiler water and fast breeder reactors with a neat sketch.

15 The maximum (peak) load on a thermal power plant of 60 MW capacity is 50 MW at an annual load factor of 50%. The loads having maximum demands of 25 MW, 20 MW, 8 MW and, 5 MW are connected to the power station.
Determine: (a) Average load on power station (b) Energy generated per year
(c) Demand factor (d) Diversity factor.

16 Briefly explain the harmful effects of emission? Explain the steps taken by government so far and their impact on environment.

17 Explain the following:
(a) Storage and pondage
(b) Ideal and realized load curves.

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Code No. 14840/CBCS

FACULTY OF ENGINEERING

B.E. (M/P) VIII-Semester (CBCS) (Main & Backlog) Examination, July 2021

Subject: Product Design & Process Planning (Elective – III)

Time: 2 hours **Max. Marks: 70**

Note: Missing data, if any, may be suitably assumed.

PART – A

Note: Answer any Five questions. **(5x2 = 10 Marks)**

1 What is the difference between creativity and innovation?
2 Define process design.
3 Write about Human-Machine interaction.
4 List out the sources of new ideas for a product selection.
5 What is Intellectual property right?
6 Explain in brief about copyrights.
7 Discuss about process sheet.
8 What is meant by concurrent engineering?
9 Explain in brief the procedure involved in the selection of manufacturing process for a new product.
10 List any four advantages of value engineering.

PART – B

Note: Answer any Four questions. **(4x15 = 60 Marks)**

11 What is product design? Explain various factors that affect the design of product.

12 (a) Explain the principles of Ergonomics.
(b) Explain the procedure involved in the design of controls and displays.

13 (a) Discuss the design for maintainability with suitable examples.
(b) Explain the various steps involved in the product planning process.

14 Define patent and explain the various steps involved in patenting process.

15 Explain the role of value engineering in product design.

16 Explain the interaction between the functions of design, manufacture and testing for a new product.

17 Write short notes on the following:
(i) Delphi Technique for product innovation
(ii) Selection of right product.

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Code No. 14857/CBCS

FACULTY OF ENGINEERING

B.E. VIII Sem. (CBCS) (A.E.) (Main & Backlog) Examination, July 2021

Subject: Transport Management (E-III)

Time: 2 hours **Max. Marks: 70**

Note: Missing data, if any, may be suitably assumed.

PART – A

Note: Answer any Five questions. **(5 x 2 = 10 Marks)**

1. Define training and its need.
2. Explain purpose of employment interview.
3. Define schedule and commute.
4. Explain types of motor transport.
5. What is “Stand time”?
6. What are cautionary signs?
7. Write about contract carriage?
8. State the details required to register the new motor vehicle?
9. Differentiate between preventive maintenance and break down maintenance.
10. Differentiate between two-tier and three tier maintenance.

PART – B

Note: Answer any Four questions. **(4 x 15 = 60 Marks)**

11. a) Write types of employment tests.
    b) Explain aims and objectives of Industrial psychology.

12. a) State facilities required at depot and draw the layout of a depot
    b) Mention various forms of ownership of transport system.

13. a) Explain the requirements of a good fare system.
    b) Differentiate direct costs and indirect costs.

14. What are the constructional regulations and descriptions of vehicle tankers, tippers, delivery vans, recovery vans, Ambulance vehicle and firefighting equipment.

15. a) Write short notes on improve fuel economy.
    b) Explain tyre maintenance procedure and causes and remedies for the uneven tyre wear.

16. a) Write short notes on Job requirements.
    b) Write short notes on Peak hour and slack hour demand.

17. a) Explain the straight line and tapered scale fare methods with the help of a figure.
    b) Explain the different types of traffic signs and their importance?

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Code No: 14862/CBCS

FACULTY OF ENGINEERING

BE VIII-Semester (CBCS) (CSE) (Main & Backlog) Examination, July 2021

Subject: Mobile Computing (Elective-III)

Time: 2 Hours **Max marks: 70**

Missing data, if any, may be suitably assumed

PART – A

Note: **Answer any Five questions**. **(5x2=10 Marks)**

1. What is multiple access type? List its application.
2. What is multiplexing?
3. Write functionalities of the services by mobile GSM?
4. Write the basic concept for satellite system?
5. Write the features of the Bluetooth?
6. List the functionalities of link manager of Bluetooth?
7. How does java card's support in mobiligy?
8. List various applications of mobile adhoc networks?
9. What is mobile IP?
10. Write about Digital Audio Broadcasting

PART - B

Note: Answer any Four questions. **(4x15=60 Marks)**

11. a) What is multiplexing? Discuss different types of multiplexing?
    b) What is spread spectrum? Explain the techniques used to spread spectrum?

12 a) Describe the functional architecture of GSM for signaling with the help of a diagram?
    b) Discuss briefly the system architecture for DECT?

13 a) Discuss the protocol stack of Bluetooth with the help of a diagram?
    b) Explain the system architecture for IEEE 802.11?

14 a) Discuss Tunneling and Encapsulation mechanism of Mobile IP?
    b) Compare and contrast traditional TCP and classical TCP?

15 Discuss in detail the protocol architecture of WAP?

16 a) Explain briefly about the TETRA frame structure?
    b) Discuss briefly the design goals of WAN?

17 Write notes on
    a) HIPERLAN
    b) DVB

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Code No. 14864/CBCS

FACULTY OF ENGINEERING

B.E. (CSE) VIII-Semester (CBCS) (Main & Backlog) Examination, July 2021

Subject: Software Quality and Testing (E – III)

Time: 2 hours **Max. Marks: 70**

Note: Missing data, if any, may be suitably assumed.

PART – A

Answer any Five questions. **(5x2 = 10 Marks)**

1 Define Software Quality. List out the key elements of Total Quality Management.
2 Explain the terms MTTF and defect Density.
3 What is the customer satisfaction?
4 Explain run chart diagram.
5 Define White-box and Black-box testing.
6 What are formal reviews?
7 Distinguish between verification and validation.
8 What is Regression testing?
9 How is Beta Testing useful?
10 Why do you need Integration testing?

PART – B

Answer any Four questions. **(4x15 = 60 Marks)**

11 Explain In-Process Quality metrics in detail.

12 Write short notes on :
(a) Control Chart
(b) Cause and Effect Diagram

13 Explain Cost Effectiveness of Phase Defect Removal in detail.

14 Explain Software Development Lifecycle models.

15 (a) Explain the concept of planning your Testing Efforts.
(b) Write a note on Automated Testing Tools.

16 Explain Data Testing and State Testing in detail.

17 (a) What are the advantages of ISO 9000 Standards?
(b) Write a note on unit testing.

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Code. No. 14875/CBCS

FACULTY OF ENGINEERING

B.E. (I.T) VIII-Semester (CBCS) (Main & Backlog) Examination, July 2021

Subject: Distributed Systems (E-III)

Time: 2 Hours **Max marks: 70**

Missing data, if any, may be suitably assumed.

PART - A

Note: **Answer any Five questions**. **(5x2=10 Marks)**

1. Define Distributed Systems? What are the main objectives of Distributed Systems?
2. What is three – tired client / server architecture?
3. Define vertical and horizontal distribution?
4. What is Happened – Before relation?
5. Explain check – pointing in recovery?
6. What is the client side caching?
7. What is digital certificate?
8. Define Domino Effect. Where does it affect the system.
9. Explain in detail about TLS protocol.
10. Write short notes on Windows AZURE.

PART - B

Note: Answer any Four questions. **(4x15=60 Marks)**

11. a) Explain about the goals of distributed system.
    b) Define middleware. What is the Position of middle ware and services?

12. a) Explain about mutual exclusion algorithms.
    b) Define External Synchronization and Internal Synchronization.

13. Explain about two phase commit protocol. What are the disadvantages of 2-PC and the advantages of 3-PC?

14. Explain in detail about file sharing, client side caching, server side replication in CODA file system.

15. Explain about different methods of concurrency controls in distributed transactions.

16. a) Explain about naming in coordination based system. What are the issues in naming?
    b) Explain about Apache Hadoop.

17. Write short notes on
    a) Group Communication. b) Static and Dynamic RMI.

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Code No. 14876/CBCS

FACULTY OF ENGINEERING

B. E. (CSE/I.T.) (CBCS) VIII – Semester (Main & Backlog) Examination, July 2021

Subject: Web Service & Architecture (Elective-III)

Time: 2 hours **Max. Marks: 70**

Note: Missing data, if any, may be suitably assumed.

PART – A

Note: Answer any Five questions. **(5 x 2 = 10 Marks)**

1. Define SOAP? And list the specifications of SOAP.
2. What is service provider entity and service provider and their role.
3. Write how the reliable messaging takes place in SOA.
4. What is meant by WS-policy frame work and list its specifications.
5. Define the characteristics of application services.
6. Define the orchestration, business, application layer.
7. Write the difference between services and service candidates in service modeling.
8. Write the benefits of business centric SOA.
9. Define the elements of WS-policy language.
10. Write about the agent, service provider, service role.

PART – B

Note: Answer any Four questions. **(4 x 15 = 60 Marks)**

11. a) Define SOA. List the primary characteristics of contemporary SOA.
    b) Explain how services communicate and how they are designed.

12. What are the coordination types and coordination protocols available in SOA?

13. Give the structure of the following scenarios.
    i) Hybrid application services only.
    ii) Task-centric business services and utility service.

14. a) Discuss the advantages and disadvantages of the three SOA delivery strategies.
    b) Briefly explain the agile strategy.

15. a) Explain the elements available in WSDL language.
    b)Explain the elements available in SOAP language.

16. a) Elucidate the guidelines of service design.
    b) Discuss about the message style available in SOAP.

17. What are the principles of SOA are not being automatically provided by web service. Justify your answer.

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Code No. 14877/CBCS

FACULTY OF ENGINEERING

B. E. (I.T.)(CBCS) VIII – Semester (Main & Backlog) Examination, July 2021

Subject: Machine Learning (E – III)

Time: 2 hours **Max. Marks: 70**

Note: Missing data, if any, may be suitably assumed.

PART – A

Note: Answer any Five questions. **(5 x 2 = 10 Marks)**

1. Give the two advantages of decision trees.
2. What is looked at in an object during unsupervised learning?
3. What is linear regression?
4. Give the formula for the computation of variance.
5. What is needed for constructing a Bayesian network?
6. What is the use of genetic programming?
7. What is difference between validation and testing of a model?
8. What is the role of genetic operators in GA?
9. What is the use of nonlinear activation in a perceptron model?
10. What is the function of ensemble learning?

PART – B

Note: Answer any Four questions. **(4 x 15 = 60 Marks)**

11. a) Considering the fitness value as the error in the function approximation, describe 2 ways of chromosomes' selection: (i) Roulette (ii) Elitism.
    b) Consider the list of items to be carried for a picnic along with their volumes, viz., Clothes (0.4), Shaving kit (0.1), Water bottles (0.2), packed food(0.3), Fruits (0.2), Camera (0.1), laptop (0.25). The capacity (volume) of the bag is 1. The initial populations are : [1 1 1 1 0 1 0] ; [1 0 0 1 0 1 0]. Take crossover point after 3rd bit and mutation point as 3rd bit. Generate the two children (solutions) to fit the items in the bag and then find the new volumes occupied by them.

12. a) Discuss the categorization of clustering methods.
    b) Give the following items to cluster:{2, 4, 10, 12, 3, 20, 30, 11, 25}. Find the clusters using the nearest neighbor algorithm. Take the threshold as 4.

13. a) Derive the learning law for the single layer perceptron.
    b) Let w={w0, w1, w2) = {0.1, 0.1, -0.3}. Update the weights for the given the two inputs-one output as S = {((0,0),-1), ((0,1),1)}. Take the learning factor as 0.3.

14. a) Describe the Optimal Bayes classifiers.
    b) A rare disease genetic disease has recently been identified. The good news is that only one in 100,000 people have the disease. If you have the disease the test will always be positive. If you have don't have the disease the test will return false positive in 2% of the time. Supposing you have tested positive, compute the probability that you have the disease using Bayes law.

…… 2

15. a) Consider the following training set and let k(Xi,Xj) be the polynomial kernel matrix with $k(Xi,Xj) = [(Xi \cdot Xj)+1\}^2$. Find the kernel matrix for the following training dataset.

Instance	x1	x2
X1	1	0
X2	-1	-1
X3	0	1

b) Explain the Adaboost algorithm.

16. a) Explain Bayesian network with an example.
b) Explain the Principal Component Analysis (PCA) with the following example:

X	40	40	30	15	15	40	30
Y	90	90	90	70	70	70	90

17. Write short notes on
a) Naïve Bayes Classifier.
b) AdaBoost Algorithm.
c) Clustering on Neural Network.

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Code No.14878/CBCS

FACULTY OF ENGINEERING

B. E. VIII – Semester (CBCS) (I.T.) (Main & Backlog) Examination, July 2021

Subject: Data Science Using R Programming (Elective – III)

Time: 2 hours **Max. Marks: 70**

Note: Missing data, if any, may be suitably assumed.

PART – A

Note: Answer any Five questions. **(5 x 2 = 10 Marks)**

1. What are the primary file types of R?
2. Name a few packages used for data management in R.
3. What are the three types of bar charts used in R?
4. Distinguish between head() and tail() function.
5. Define Linear Regression.
6. What is GLM regression? What are its components?
7. What is the difference CTree() and ctree() in R?
8. What is linear filtering in time series analysis?
9. How is efficiency of Hierarchical clustering in cluster analysis improved?
10. What is sentiment analysis?

PART – B

Note: Answer any Four questions. **(4 x 15 = 60 Marks)**

11. Explain how you handle Vector Data and List Data in R with examples.
12. Write about different Descriptive Statistics for Exploring Data in R.
13. (a) What is model fitting? Discuss the types of models in brief.
    (b) Explain binary logistic regression with a covariate variable.
14. (a) What is pruning? Why is it used in decision tree?
    (b) Discuss Forecating using an ARIMA Model.
15. Define text mining and describe architecture of text mining systems.
16. (a) Create a dataset or table[‘shop’] and apply all data exploring functions on this table.
    (b) What is a bar chart? Discuss the types of bar charts in brief.
17. (a) Explain multinorm() function with syntax and an example.
    (b) What is hypothesis space search? List its steps.
    (c) Describe the steps of CURE algorithm.

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Code No: 14799/CBCS

FACULTY OF ENGINEERING

B.E. (EEE) VIII-Semester (CBCS) (Main & Backlog) Examination, July 2021

Subject: Electric Vehicle & Hybrid Electric Vehicle (E-III)

Time: 2 hours **Max. Marks: 70**

Note: Missing data, if any, may be suitably assumed.

PART – A

Note: Answer any Five questions. **(5 x 2 = 10 Marks)**

1 What are advantages of electric vehicle?
2 What are the types of electric vehicle available in the market?
3 What is transmission efficiency?
4 Give the list of motors used for hybrid electric vehicle?
5 How do we carry out testing of electric vehicle batteries?
6 Discuss the challenges and key technologies of Hybrid Electric Vehicle?
7 Mention the Hybrid electric vehicles applications for military vehicle?
8 What is inductive charging?
9 What is battery charger topology?
10 Mention the general issues in design of electric vehicle?

PART – B

Note: Answer any Four questions. **(4 x 15 = 60 Marks)**

11 Describe the mathematical modelling of tractive efforts? Draw the graph between speed versus tractive effort to explain the relationship?

12 Describe the basic architecture of hybrid electric vehicle?

13 What is battery power and desired run time of battery energy. Discuss the sizing of electric machine for EV and HEV?

14 Draw & Explain different type of configuration of HEV?

15 a) Write short note on infrastructure of plug-in HEV
b) Write a short note on sizing ultra – capacitors for hybrid electric vehicles.

16 a) Explain electric vehicle battery efficiency and battery capacity?
b) What is the type of electric vehicle in use today?

17 a) Explain the state of art of Hybrid Electric Vehicle?
b) Mention the advantages and disadvantages of HEV?

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Code No: 14801 / CBCS

FACULTY OF ENGINEERING

B.E. VIII-Semester (CBCS) (EEE) (Main& Backlog) Examination, July 2021

Subject: High Voltage DC Transmission (E-III)

Time: 2 Hours **Max marks: 70**

Missing data, if any may be suitably assumed

PART - A

Note: **Answer any Five questions**. **(5x2=10 Marks)**

1) Mention the limitations of HVDC Transmission System.
2) Define (i) Pulse number and (ii) Commutation Group
3) Define Extinction angle and mention the importance of this angle in Bridge Converter circuits.
4) Draw the equivalent circuit of inverter of a two terminal HVDC link in terms of Extinction angle.
5) Explain how valve rating is specified and define Transformer Utilization factor
6) What is commutation Failure? Mention two reasons for commutation failure.
7) What is meant by Size of the Filter?
8) Mention the reasons for generation of Non-Characteristic harmonics in Bridge converter.
9) Mention the applications where DC breaker can be used.
10) Mention the advantages of Corona in High Voltage Transmission Systems

PART - B

Note: Answer any Four questions. **(4x15=60 Marks)**

11 a) What are the different kinds of DC Links used in HVDC and explain each one of them with single line diagrams and features.
b) Explain the factors that influence corona losses in High Voltage Transmission systems.

12 a) Derive the equation for output DC Voltage of six pulse converter for a firing angle α and overlap angle μ.
b) Draw the Wave forms for output DC voltage of six pulse converter with zero degree firing angle and without overlap. Also draw the voltage across valve for the above condition.

13 a) Discuss the relative merits of constant current control and constant voltage control in HVDC Transmission. What type of control is used in modern HVDC installations?
b) Draw the combined characteristic of Rectifier and Inverter for two terminal HVDC Link for Reverse Power flow and explain each segment of the characteristic.

14 a) Enumerate the factors affecting the size and location of DC Reactor in HVDC Transmission line.
b) Enumerate various disturbances originating on the AC side and DC side of converter, which lead to internal over voltages in HVDC Converter Station.

15 a) What are the various types of MTDC System? Write down the main applications of MTDC Systems.
b) Describe the Current Margin method of controlling parallel MTDC system

16 a) Explain, with a block diagram, the method of Constant Current Control of HVDC system.
b) Explain why six pulse bridge circuit is used for HVDC.

17 a) What are the different types of harmonics generated in the input current and output voltage and what are the problems associated with the generation of harmonics?
b) What are the applications of DC Breaker.

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Code No. 14812/CBCS

FACULTY OF ENGINEERING

B.E. (Inst.) VIII-Semester (CBCS) (Main & Backlog) Examination, July 2021

Subject: Automation in Process Control (Elective – III)

Time: 2 hours **Max. Marks: 70**

Note: Missing data, if any, may be suitably assumed.

PART – A

Note: Answer any Five questions. **(5 x 2 = 10 Marks)**

1 Write about SCADA/DCS software
2 What are standard add on cards?
3 What are the DCS elements?
4 Briefly write about remote terminal units of SCADA system.
5 What is DDC?
6 What is a field bus topology?
7 What are the different types of displays available in SCADA system?
8 How is a smart sensor different from a sensor?
9 What is meant by SCADA software?
10 With a neat diagram explain power operational amplifier

PART – B

Note: Answer any Four questions. **(4 x 15 = 60 Marks)**

11 Write about interfacing the input signals with an example.

12 (a) What is a power amplifier? Explain with a neat diagram.
(b) What is DDS?

13 Draw the Architecture of the SCADA system and explain.

14 (a) Explain the Hierarchy of DCS system.
(b) What are the applications of SCADA systems?

15 With a neat diagram explain EMR and SSR.

16 (a) With a neat diagram explain Smart Temperature transmitter.
(b) Explain the topology of field bus system.

17 (a) Explain with a neat diagram the computer control of plastic injection moulding Process.
(b) What is the control scheme for heat exchanger? Explain.

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Code No.14353

FACULTY OF ENGINEERING

B. E. 4/4(Mech.) II – Semester (Backlog) Examination, July 2021

Subject: Production Drawing

Time: 2 hours **Max. Marks: 75**

Note: Missing data, if any, may be suitably assumed.

PART – A

Note: Answer any Five questions **(5 x 5 = 25 Marks)**

1. Differentiate between machine drawing and production drawing.
2. What is the role of time and inspection in process sheet significance to the shop floor management.
3. Draw and interpret position tolerance (i) point as datum, (ii) axis as datum.
4. Sketch and indicate the type of fit for shaft size of $40:40^{\pm 0.03}$ and hole size of $39.03^{\pm 0.01}$
5. State the meaning of the following symbols:

(i)  (ii) 

6. For 40mm diameter size and indicate the type of fit consider suitable hole basis system

shaft	hole
h6-E7	E7-h6

7. Sketch production drawing conventions-(i) spot weld (ii) seam weld (iii) bevel gear.

PART – B

Note: Answer any two bits of the question. **(2 x 25 = 50 Marks)**

8. (1) Draw TWO views of (i) part-1 strap (ii) part 2 – sheeve to dimensions in 3rd Angle Projection with tolerances and surface finish. The Eccentric assembly consists of part 1 strap of CI 1 unit, part 2 sheeve of CI unit 1, part 3 shim 2 units made of Brass, part4 strap of CI with 1 unit, part 5 Bolt and nuts of MS 2 units.

   (2) Draw the Standard Part Component Drawing for Nut and Bolt.

   (3) The Production Process Planning Sheet (i) part -1 Strap.

   (4) State the (a) symbols, (b) type of fit, (c) surface finish for the (i) sheeve and straps, (ii) sheeve and shaft.

.. 2

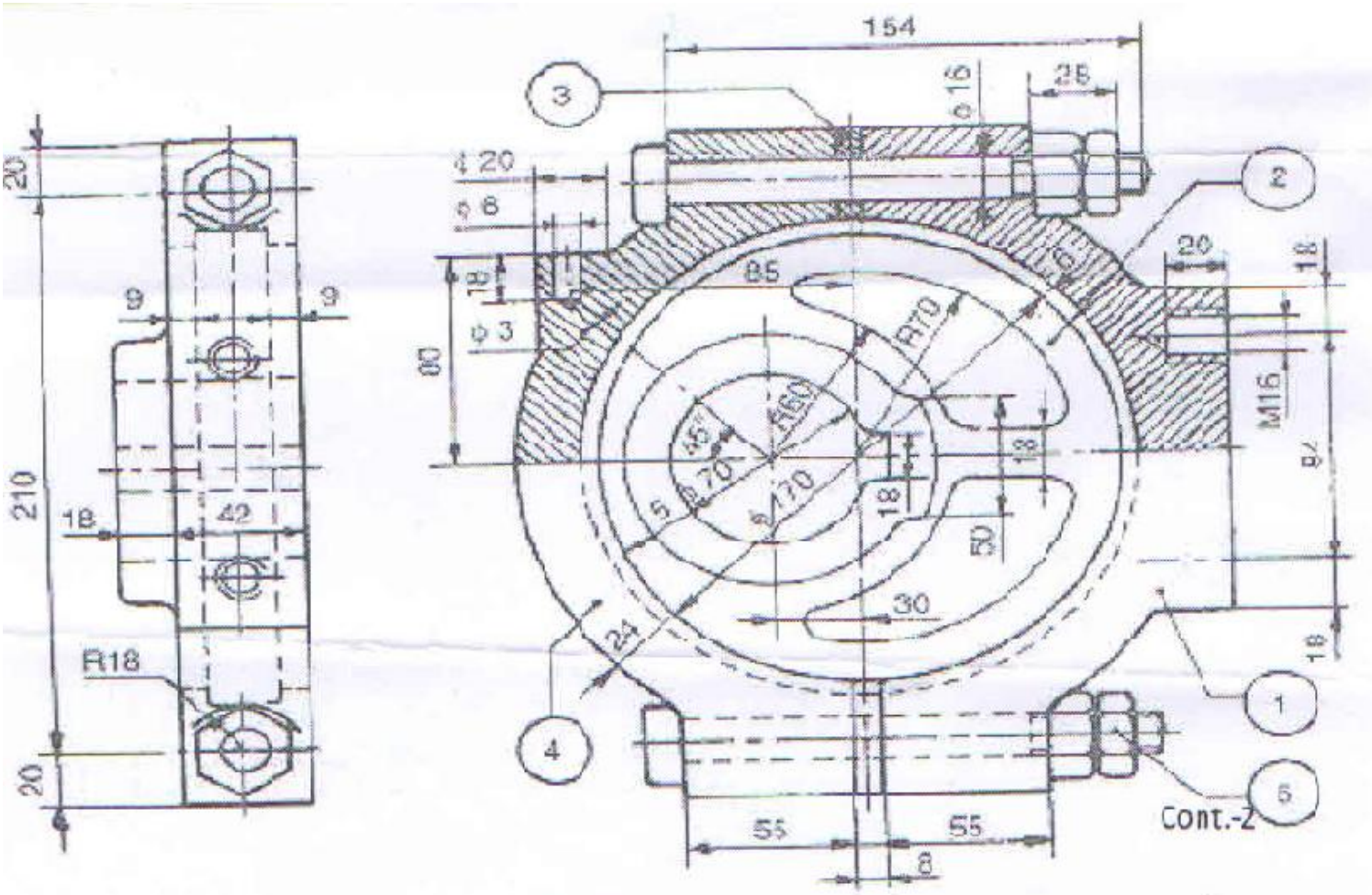

Fig. Eccentric

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Code No. 14354

FACULTY OF ENGINEERING

B.E. 4/4 (Prod.) II-Semester (Backlog) Examination, July 2021

Subject: Tool Design

Time: 2 hours **Max. Marks: 75**

Note: Missing data, if any, may be suitably assumed.

PART – A

Note: Answer any Seven questions. **(7x3 = 21 Marks)**

1 What are the principal cutting tool materials used?
2 What properties should good cutting fluids have?
3 What is the basic principle use in USM process?
4 What are the reasons of cutting tool failure?
5 What is a double angle milling cutter?
6 What are the different elements of an ordinary cut broach?
7 What are the different types of reamers commonly used?
8 Write the formula to calculate the cutting speed of a drill.
9 What are the accessories used in conjunction with dies?
10 What is a liner bush?

PART – B

Note: Answer any Three questions. **(3x18 = 54 Marks)**

11 (a) Explain the Laser Beam Machining process with the help of a neat sketch.
(b) Explain the EBM process in detail.

12 (a) Classify the different types of milling cutters.
(b) Explain the different broaching operations with the help of neat sketches.

13 (a) Explain the different elements of a tap.
(b) Define the different parts and functions of a twist drill.

14 (a) Classify the dies according to the types of operations.
(b) What do you understand by a follow / progressive die?

15 (a) Explain the types of clamps used with jigs and fixtures.
(b) What is a fixtures? Explain in detail about its working.

16 (a) Explain about the progressive die in detail.
(b) What are the advantages of using jigs and fixtures in mass production?

17 (a) What is a reamer? What is the purpose of a reamer?
(b) What do you understand by forging?
(c) What is a fixed bush and what is its purpose?

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