Code No. D-3672/CBCS

FACULTY OF ENGINEERING

B.E. (EIE) VI - Semester (CBCS) (Backlog) Examination, March / April 2022

Subject: Electronic Instrumentation Systems

Time: 3 Hours **Max. Marks: 70**

(Missing data, if any, may be suitably assumed)

PART – A

Note: Answer all questions. **(10 x 2 = 20 Marks)**

1. Draw the characteristics of AC and DC amplifiers.
2. Draw the schematic of a Log IF amplifier.
3. Explain the principle of sampling oscilloscope.
4. Brief about the magnetic material used for tape.
5. Explain the principle of automatic zeroing.
6. What is IEEE-488 bus?
7. What are the advantages of magnetic tape recorders?
8. Draw schematic of R-2R resistive ladder.
9. Give an example of Automatic Instrumentation.
10. What is the difference between a wave analyzer and a spectrum analyzer?

PART – B

Note: Answer any five questions. **(5 x 10 = 50 Marks)**

11. (a) Describe in detail about the successive approximation method of analog to digital conversion.
    b) Explain the principle and working of a storage oscilloscope.

12. (a) Explain spectrum analyzer with Block diagram?
    (b) Explain input signal conditioning?

13. a) What is Isolation Amplifiers? Explain the types of Isolation Amplifier with simple diagram.
    b) With suitable diagram explain ADC successive approximation method.

14. a) Explain its principle of operation, construction and working of digital frequency meter.
    b) With a neat block diagram explain about single and multiple period (average) measurement system.

15. a) In a video cable, a particular channel program is selected at 88.5MHz. Explain how you measure its harmonics using spectrum analyzer. What are the different harmonic frequencies for the above channel?
    b) Explain Magnetic Recorder.

16. Explain in detail about IEEE-488 interface bus with necessary diagrams.

17. Write short notes on the following:
    a) Dual Slope ADC b) Automatic Instrumentation.

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Code No. D-3682/CBCS

FACULTY OF ENGINEERING

B.E. (ECE) VI - Semester (CBCS) (Backlog) Examination, March / April 2022

Subject: Managerial Economics and Accountancy

Time: 3 Hours **Max. Marks: 70**

(Missing data, if any, may be suitably assumed)

PART – A

Note: Answer all questions. **(10 x 2 = 20 Marks)**

1. Define Evolution of Economics.
2. What is Income demand?
3. Differentiate between Firm and Industry.
4. Explain “Margin of safety”
5. What is demand Forecasting?
6. What are the features of Monopoly?
7. What is Fixed Capital?
8. Write Journal Entries for the following transactions.
   6-10-2017 deposited in bank Rs.50,000
   7-10-2017 withdrawn from bank Rs.20,000.
9. Risk and uncertainty are related. Justify how?
10. What are the effects of different payback periods?

PART – B

Note: Answer any five questions. **(5 x 10 = 50 Marks)**

11. Define Nature and Scope of managerial economics.

12. Managerial Economics is the application of Economic Theory to business management discuss.

13. Define Income elasticity of Demand and discuss the types and uses of Income elasticity of demand.

14. Bhavana company manufacturers ‘Product N’ its particulars given below sales Rs.3,00,000 fixed cost Rs.90,000 variable cost Rs.1,50,000. Calculate
    i) P/V Ratio ii) Break-even point iii) Margin of safety

15. Prepare bank reconciliation statement as on 30-06-2014 from the following particulars.
    i) Balance as per cash book as on 30-06-2014 Rs.3,500.
    ii) Interest on overdraft debited in pass book Rs.80.
    iii) Cheque issued but not presented for payment before 30-06-2014 Rs.600.

16. a) What is Internal economics of scale? Explain.
    b) What is law of variable proportion explain.

17. Prepare Trading and profit and Loss account and balance sheet as on 31-12-2011.

Trial Balance

Particulars	Rs.	Particulars	Rs.
Purchases	16,000	Capital	10,655
Discount	1,300	Sales	30,000
Wages	6,500	Loan	3,000
Travelling expenses	500	Sundry creditors	2,100
Salaries	2,000		
Carriage inwards	275		
Insurance & rent	150		
Commission	825		
Cash at bank	2,750		
Sundry expenses	355		
Interest on loan	100		
Buildings	4,000		
Machinery	2,000		
Opening Stock	5,750		
Sundry Décors	3,250		
	45,755		45,755

Adjustments:

1) Closing stock Rs.6,000

2) Rent outstanding Rs.60.

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Code No. D-3697/CBCS

FACULTY OF ENGINEERING

B.E. (AE) VI - Semester (CBCS) (Backlog) Examination, March / April 2022

Subject: Production Technology

Time: 3 Hours **Max. Marks: 70**

(Missing data, if any, may be suitably assumed)

PART – A

Note: Answer all questions. **(10 x 2 = 20 Marks)**

1 What are the major limitations of sand casting process?
2 What are cold shuts? How to avoid cold shuts in castings?
3 What are the functions of coatings on shielded electrodes?
4 What is the difference between upsetting and fullering?
5 What are the advantages of solid state welding process?
6 What are the advantages of cold working over hot working?
7 What is meant by roll separating force? What is the effect of roll diameter on it?
8 Differentiate between presses and hammers.
9 How is tool life defined? Enlist the factors affecting tool life.
10 Write any two differences between jigs and fixtures.

PART – B

Note: Answer any five questions. **(5 x 10 = 50 Marks)**

11 (a) What are the basic considerations in the design of a gating system?
(b) Describe the construction and working of jolt squeeze machine.

12 (a) Explain thermit welding along with its applications.
(b) Describe the electroslag welding process with a neat sketch.

13 (a) Explain flow forming with a neat sketch. How it is different from spinning?
(b) State and explain about various types of rolling mills.

14 (a) Explain the principle, applications and advantages of hydroforming process.
(b) What is jig boring machine? Describe its construction and working in detail.

15 (a) Explain the nomenclature of single point cutting tool.
(b) List the common methods of chip breaking and what are the means used for chip breaking.

16 (a) How slotting machine is specified and write the main parts of a slotting machine?
(b) Explain taper turning by tail stock set over method with a neat diagram.

17 Write short notes on the following:
(a) Centrifuging
(b) Wire drawing
(c) Capstan and turret lathes.

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Code No. D-3716/CBCS

FACULTY OF ENGINEERING

B.E. (IT) VI - Semester (CBCS) (Backlog) Examination, March / April 2022

Subject: Embedded Systems

Time: 3 Hours **Max. Marks: 70**

(Missing data, if any, may be suitably assumed)

PART – A

Note: Answer all questions. **(10 x 2 = 20 Marks)**

1 Sketch the structure of Program status word register in 8051.
2 Write about the internal RAM Organization in 8051.
3 Distinguish between CAN and I^2C Bus.
4 Sketch the pin structure of LCD Display.
5 List where is sensing majorly performed in automobile systems.
6 What is the need for using smart sensors?
7 Differentiate between Hard-RTOS and Soft-RTOS.
8 What is a task? List the various task states.
9 Define System on Chip (SoC).
10 What is meant by Instruction level parallelism?

PART – B

Note: Answer any five questions. **(5 x 10 = 50 Marks)**

11 (a) Explain the different pins used in 8051 Microcontroller pin structure.
(b) Distinguish between Microprocessors and Microcontrollers.

12 Describe the various timer modes of operation and SFRs used for timers in 8051 microcontroller.

13 Explain how keyboard is interfaced to 8051 with a suitable diagram.

14 (a) Discuss the various sources of pollution hazards and their impacts. Explain how sensing of environmental pollution is performed.
(b) Explain the working of Optical Sensors used for water level detection in Home Appliances.

15 (a) Describe the features of μ-Cos RTOS.
(b) Describe how the interrupt routines work in RTOS environment.

16 Describe in detail how parallelism can be achieved in pipelined processor model.

17 Write short notes on any two of the following:
(a) ARM and SHARC Architectures
(b) IE and IP SFRs in 8051
(c) SIMD Architecture.

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Code No. D-3709/CBCS

FACULTY OF ENGINEERING

B.E. (CSE) VI - Semester (CBCS) (Backlog) Examination, March / April 2022

Subject: Computer Networks & Programming

Time: 3 hours **Max. Marks: 70**

(Missing data, if any, may be suitably assumed)

PART – A

Note: Answer all questions **(10 x 2 = 20 Marks)**

1 What is ARP and RARP?
2 State some of the responsibilities of transport layer.
3 Define Flooding.
4 What is meant by congestion?
5 State the differences between TCP and UDP.
6 What is a CIDR?
7 Define Reserved Ports, Sockets and Signals.
8 What is the purpose of Domain name system (DNS)?
9 Give the purpose of HTML.
10 What is crush recovery?

PART – B

Note: Answer any five questions **(5 x 10 = 50 Marks)**

11 a) What is Routing? Why is adaptive routing superior to non-adaptive routing?
b) Explain the concept of Link State routing Algorithm and distance vector routing.

12 What are elementary and advanced system calls? Explain in detail.

13 Explain congestion control algorithms in detail.

14 a) Explain Internet working in detail.
b) Explain the IP protocol.

15 a) Explain transport service primitives.
b) Explain about TCP and UDP header formats.

16 a) Write short notes on WWW.
b) Define SMTP, MIME, HTTP, SNMP, and Telnet.

17 Write short notes on:
a) Input/output Multiplexing
b) Timer management
c) Tunneling.

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Code No: D-3659/CBCS

FACULTY OF ENGINEERING

B.E (Civil) VI - Semester (CBCS) (Backlog) Examination, March / April 2022

Subject: Water Resources Engineering - II

Time: 3 Hours **Max marks: 70**

(Missing data, if any may be suitably assumed)

PART – A

Note: **Answers all questions**. **(10 x 2 = 20 Marks)**

1. Write importance of Lining of Canals
2. Enlist various types of Weirs?
3. Write the drawbacks of Kennedy's theory
4. Define scouring sluice.
5. What is meant by undermining
6. Draw a neat sketch of vertical drop fall.
7. Write a note on flexibility of modules
8. List different types of Canal falls
9. Write any two functions of Cross regulator
10. Differentiate between Super passage and Syphon

PART - B

Note: Answers any five questions. **(5 x 10 = 50 Marks)**

11. a) Draw a neat sketch of Diversion head work along with its components. Discuss in detail about Divide wall
    b) Design an irrigation channel by Kennedy's theory to carry a discharge of 30 cusec N=0. 225, m=1, s=1/5000.
12. a) Design a concrete lined channel to carry a discharge of 50 cumecs at a slope of 1in 8100. The side slopes of the channel are 1.2:1. The value of Manning's N may be taken as 0.016
    b) Discuss in detail the various causes of failure of weirs on permissible foundation and their remedies
13. a) Draw a neat sketch of Diversion head work along with its components. Write in detail about fixation of still level of head sluice
    b) Write a short note on Lacey's theory

14. Design a vertical drop weir using Bligh's theory and check the thickness of floor of flood Discharge = 3000 m^3/s, HFL before constriction = 250 mts. Full supply level = 120 m, Bed level of river= 165 mts, Lareys' silt factor=1 coefficient of crap=10, minimum downstream water level=165 m, Afflux=1mt

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15. a) Describe briefly any two types of Canal falls with neat sketches
    b) List out the factors affecting suitability of Aqueduct and Syphon Aqueduct

16. a) Differentiate between Aqueduct and Syphon Aqueduct
    b) Discuss in detail about cross drainage works carrying the natural drain over the canal with a neat sketch

17. Write short notes on any **TWO** of the following
    a) Lining of canals.
    b) Design of Aqueduct.
    c) Trapezoidal notch fall.

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Code No: D-3669/CBCS

FACULTY OF ENGINEERING

B.E. (EEE) VI - Semester (CBCS) (Backlog) Examination, March / April 2022

Subject: Renewable Energy Technologies

Time: 3 Hours **Max. Marks: 70**

(Missing data, if any may be suitably assumed)

PART – A

Note: **Answers all questions**. **(10 x 2 = 20 Marks)**

1. Write advantages of Fuel cell.
2. What are the disadvantages of conventional methods of energy sources?
3. Distinguish between flat plate and concentrating collectors.
4. Define Solar attitude Angle and Zenith Angle.
5. Derive the expression for power developed due to wind.
6. What is the basic principle of Wind Energy Conversion?
7. Write the advantages and disadvantages of Tide energy.
8. Give the classification of geothermal sources.
9. Write the process of photosynthesis.
10. What are uses of bio gas?

PART - B

Note: Answers any five questions. **(5 x 10 = 50 Marks)**

11. a) Explain Solid Oxide Electrolyte Cell with neat diagram.
    b) Write short notes on classification of non-conventional energy sources.

12. a) Explain in detail about Solar Energy Systems.
    b) Explain in detail about Solar Pond.

13. a) How can Geothermal energy be utilized for electricity generation?
    b) What are the advantages & disadvantages of Geothermal energy. List the applications.

14. a) Discuss the constructional details of a down draught Gasifier.
    b) Explain the principle of operation how electrical energy is produced in fuel cells.

15. a) Explain in detail about 5 MW OTEC pro commercial plant.
    b) Explain about Wave energy conversion devices.

16. Explain in detail about commonly used Bio-Gas plants in India.

17. Explain with neat diagrams a) Induction Generator b) Wind Power Plant

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Code No: D-3690/CBCS

FACULTY OF ENGINEERING

BE (MECH/PROD) VI - Semester (CBCS) (Backlog) Examination,
March / April 2022
Subject: Metrology and Instrumentation

Time: 3 Hours **Max marks: 70**

(Missing data, if any may be suitably assumed)

PART – A

Note: **Answers all questions**. **(10 x 2 = 20 Marks)**

1. Distinguish between tolerance and allowance of sizes of mechanical component.
2. What is the operating principle of dial indicator?
3. State the conditions for the application of foil, rosette gauges in strain measurement
4. Explain the use of Precision polygon
5. State how surface finish is designated on drawing as per ISO standard.
6. What are the various type of plug gauges? Sketch any one of them.
7. Mention the essential characteristics of a good comparator
8. How proving ring strain gauge load cells work.
9. Sketch the hysteresis phenomena in measuring instruments
10. Explain thermocouple ambient temperature compensation methods.

PART - B

Note: Answers any five questions. **(5 x 10 = 50 Marks)**

11. a) Explain Taylor's principle of gauge design
    b) Explain the various types of sinebars with neat sketch and give its limitations.

12. a) Explain the principle of Sigma Comparator with neat sketch.
    b) Explain the principle of Auto-Collimator with neat sketch.

13. a) Distinguish between interchangeablility and selective assembly with suitable example
    b) Derive the expression for measuring the effective diameter of screw thread by 3-wire method.

14. a) Explain shaft basis and hole basis system with suitable examples.
    b) Explain the working principles of back pressure type pneumatic comparator with neat sketch.

15. a) Explain the various static characteristics of measuring instruments.
    b) Explain the principle of operation of Piezo electric load cell and state its advantages.

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16. a) Explain Series and parallel circuit's compensation for thermocouples.
    b) State general geometrical tests conducted on milling machine tools.

17. a) When measuring the effective diameter of an external screw thread guage 3.5mm pitch 30.500mm diameter cylindrical standard and wires, gauges and cylinders were 13.3768 and 12.2428mm respectively. Calculate the thread guage effective diameter.
    b) Sketch the arrangement of gauges of axial load and torsion measurements instruments.

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