Code No. 3315

FACULTY OF ENGINEERING

B.E. 4/4 (EEE/EIE) II-Semester (Main) Examination, May / June 2017

Subject : Electronics Instrumentation Systems

Time : 3 hours **Max. Marks : 75**

Note: Answer all questions from Part-A. Answer any FIVE questions from Part-B.

PART – A (25 Marks)

1 Determine the conversion time of 16-bit ADC if clock frequency is 1 MHz and reference voltage is 5V. 3
2 Mention the specifications of isolation amplifiers. 2
3 What is quantization error? 2
4 Explain the principle of time interval measurement. 3
5 Explain the principle of wave analyzer. 2
6 Draw the block diagram of spectrum analyzer. 3
7 What is relay switched attenuator? 2
8 What are the bus management signals in IEEE 488 bus? 3
9 Give some example for automatic instrumentation. 2
10 Draw the block diagram of CRO. 3

PART – B (50 Marks)

11 Explain time base generator with neat circuit diagram and wave forms, for a continuous sweep CRO and triggered sweep CRO. 10

12 a) Explain the role of IEEE 488 electrical interface in computer controlled test systems. 5
b) Explain the procedure for testing an audio amplifier. 5

13 a) Explain the operation of the frequency synthesizer uses a Phase Locked Loop (PLL) system, with neat diagram. 7
b) Write notes on Log IF amplifier. 3

14 a) Explain basic operation of digital multimeter with neat block diagram. 6
b) Explain with neat diagram digital frequency meter. 4

15 a) Explain the operation of successive approximation ADC. 6
b) Suppose the converter can measure a maximum of 5V i.e. 5V corresponds to the maximum count of 11111111, if the test voltage is V_{in} = 1V. Show the steps take place in table format in the measurement for the successive approximation type converter. 4

16 a) Draw and explain instrumentation amplifier, with bridge input. Derive the expression for its output voltage. 7
b) Explain the importance of isolation amplifiers in measuring systems. 3

17 Write short notes on the following :
a) Current to voltage converter 3
b) Spectrum analyzer 3
c) Storage oscilloscope 4

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Code No. 3332

FACULTY OF ENGINEERING

B.E. 4/4 (Mech.) II-Semester (Main) Examination, May / June 2017

Subject : Production Drawing

Time : 3 hours **Max. Marks : 75**

Note: Answer all questions from Part-A. Answer all questions from Part-B.

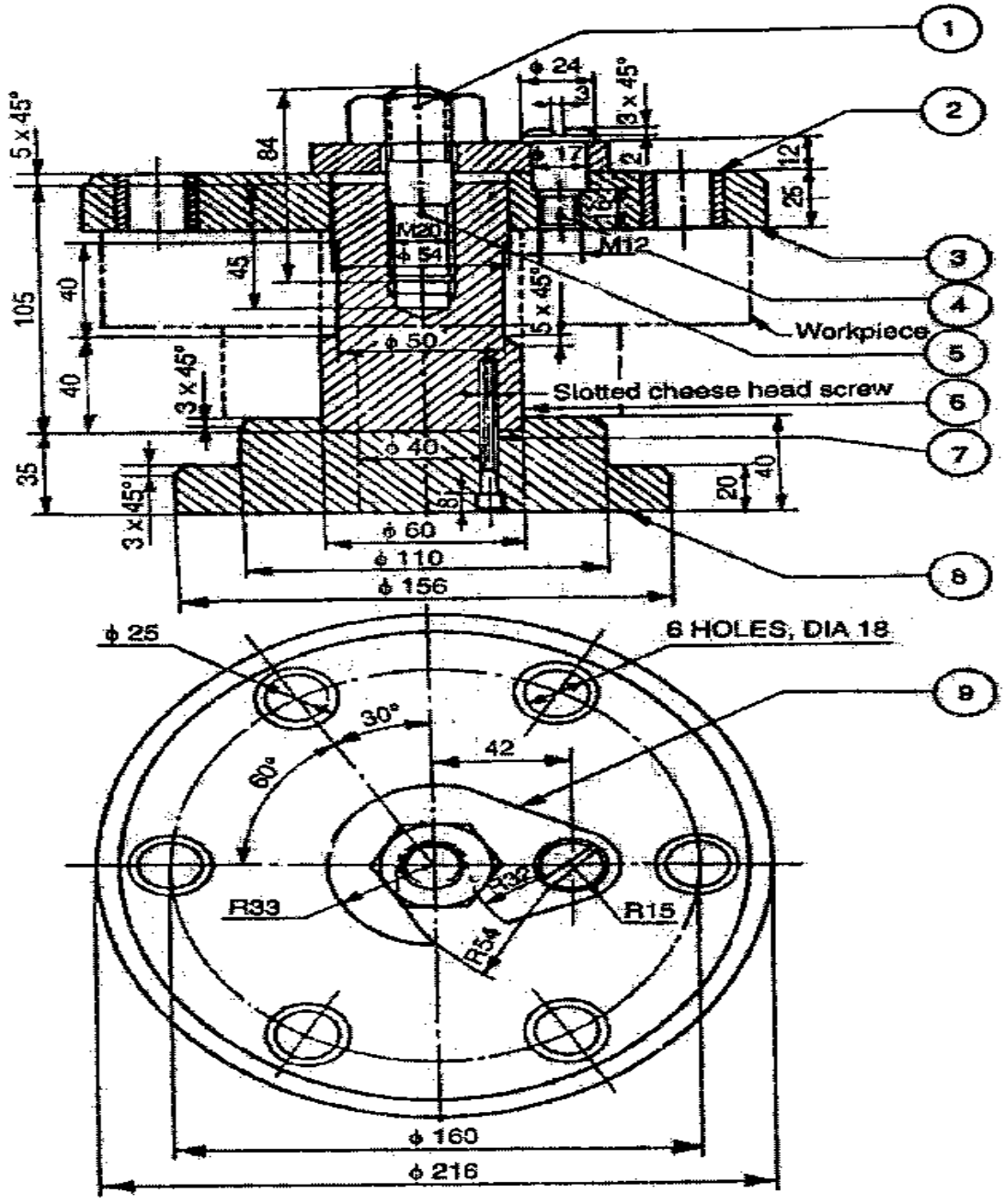
PART – A (25 Marks)

1	Compare the Engineering Drawing, Machine Drawing and Production Drawing.	3
2	What is Fit? Type of fits with examples.	3
3	Draw the symbol for surface roughness and abbreviate a, b, c, d, e and f.	3
4	What are the elements in preparing the process sheet?	3
5	What is the symbol for concentricity?	2
6	What is the conventional representation for bearings?	2
7	How to represent the material composition in production drawing sheet?	3
8	Draw the tool movement for multidirectional (direction of lay).	2
9	Draw the Hydraulic symbol for 2 way direction control valve.	2
10	Define tolerance, types with examples.	2

PART – B (50 Marks)

11	Draw the part drawings for the given assembly of Drill JIG and suggest the fits between mating parts. A) Stem and Jig Plate B) Jig plate and Bush C) Stem and Base plate.	35
12	Prepare the process sheet for stainless steel bar with having operations like, step turning, taper turning, threading, slitting, Knurling, internal threading, chamfering and under cutting with orientation.	15

Contd..2



Parts List

Part No.	Qty.	Name	Matl.
1	1	Nut	—
2	6	Bush	MCS
3	1	Jig plate	CI
4	1	Screw	MS
5	1	Stud	MS

Part No.	Qty.	Name	Matl.
6	1	Stem	MS
7	3	Screw	MS
8	1	Base	CI
9	1	Latch washer	MS

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Code No. 3353

FACULTY OF ENGINEERING

B.E. 4/4 (Prod.) II-Semester (Main) Examination, May / June 2017

Subject : Tool Design

Time : 3 hours **Max. Marks : 75**

Note: Answer all questions from Part-A. Answer any FIVE questions from Part-B.

PART – A (25 Marks)

1 Give a brief classification of cutting tool materials.

2 State the process capabilities of Lapping.

3 Sketch a single point cutting tool and indicate various elements on it.

4 Differentiate between form milling cutter and face milling cutter.

5 Describe the nomenclature of twist drill.

6 Name the considerable features while designing a tap.

7 What is the result of excessive die clearance?

8 Which type of press is useful for simple banking operation?

9 Discuss the significance of stripper.

10 Differentiate between a drill jig and fixture.

PART – B (5 x 10 = 50 Marks)

11 a) Explain principle involved in EDM with the help of a neat sketch.
b) What are super-finishing operations? Explain any one process in detail.

12 a) Sketch and explain the elements of a standard milling cutter.
b) Explain the procedure of estimating the cutting forces during milling operation.

13 a) Differentiate between the push type and pull type broaches.
b) Discuss the functions of various elements of a twist drill.

14 a) Elucidate the designing features of reamers.
b) How a drawing dies is designed? Explain the procedure.

15 a) State and explain the elements of a Combination Die.
b) Explain the locating methods associated with the cylindrical surfaces.

16 a) Explain the principle of a grinding jig with neat sketch.
b) Differentiate between magnetic and vacuum clamping.

17 Write short notes on the following:
a) Grinding the milling cutter
b) Sketch of a bottoming tap
c) Redundant location

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Code No. 3355

FACULTY OF ENGINEERING

B.E. 4/4 (AE) II - Semester (Main) Examination, May / June 2017

Subject : Alternative Fuels and Energy System for Automobiles

Time : 3 Hours **Max. Marks: 75**

Note: Answer all questions from Part-A and answer any five questions from Part-B.

PART-A (25 marks)

1 List out some prominent alternate fuels.

2 Why hydrogen is referred to as a “Freedom Fuel”.

3 Differentiate between methanol and DME.

4 Enumerate five applications of CNG gas.

5 Which materials are compatible with LPG?

6 Write a short note on gas turbine hybrid vehicle.

7 Briefly explain vegetable oil esterification process.

8 What are the safety checks in usage for CNG vehicles?

9 What are the advantages of hybrid vehicles over gasoline engines?

10 Describe the five benefits of vegetable oils for automobiles.

PART-B (50 marks)

11 Describe any three methods of hydrogen production in detail with diagram.

12 Describe production of DEE.

13 Discuss the storage facilities for DME.

14 a) write a short note on biogas digester.

b) What are the ten applications of biogas?

15 What are the modifications required in an SI engine for it to run it on biogas.

16 Explain about DME fuel injection equipment in detail with neat sketch.

17 Describe the solar car in great detail.

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Code No. 3371

FACULTY OF ENGINEERING

B.E. 4/4 (CSE) II – Semester (Main) Examination, May / June 2017

Subject: Information Storage and Management (Elective – II)

Time: 3 Hours **Max.Marks: 75**

Note: Answer all questions from Part A. Answer any five questions from Part B.

PART – A (25 Marks)

1		Give the maximum possible number of node ports in a switched fabric.	2
2		List the key challenges in Information Management.	2
3		Define Information Lifecycle.	2
4		Give different factors affecting NAS performance.	3
5		Describe Business Impact Analysis.	3
6		What are various recovery considerations while taking a backup?	3
7		What are the benefits of cloud computing?	2
8		What are various programming models of cloud computing?	3
9		What are the 3 security domains of data storage?	2
10		What are various parameters to be monitored in a storage infrastructure?	3

PART – B (5x10 = 50 Marks)

11	a)	Briefly explain about the core elements of data centre infrastructure.	4
	b)	Compare and contrast different levels of RAID.	6
12	a)	Define SAN. Explain about Fibre Channel Architecture with a diagram.	5
	b)	Explain about zoning function of FC switch. Illustrate the types of zoning.	5
13	a)	Explain NAS file sharing protocols.	5
	b)	Calculate the number of disks required at RAID 5. Consider an application is generating 6,600 IOPS with 75 percent of reads. (Maximum of 180 IOPS for a Disk Drive).	5
14	a)	How is backup taken in a NAS based environment?	5
	b)	What are different local replication technologies? Explain in detail.	5
15	a)	Describe various cloud service models. Give suitable examples for each.	5
	b)	Discuss on different critical challenges of cloud computing.	5
16	a)	Explain the challenges involved in securing storage infrastructure.	5
	b)	Briefly write about a Risk Triad and BURA.	5
17		Write short notes on the following:	
	a)	Illustrate SNIA Storage Virtualization Taxonomy.	5
	b)	Explain various phases of a BC planning lifecycle.	5

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Code No. 3382

FACULTY OF INFORMATICS

B.E. 4/4 (I.T.) II - Semester (Main & Backlog) Examination, May / June 2017

Subject : Information Storage and Management (Elective – IV)

Time : 3 Hours **Max. Marks: 75**

Note: Answer all questions from Part-A and answer any five questions from Part-B.

PART – A (25 Marks)

1. Explain the significance of Information Storage and management in different domain. (2)
2. What is information lifecycle? (3)
3. What are the components of Storage system environment? (3)
4. Write in detail about volume manager. (2)
5. What is zoning? Explain the categories of Zones. (3)
6. Explain the protocols used for sharing data in NAS. (2)
7. What is Disaster recovery? (3)
8. What are the parameters monitored for storage infrastructure. (2)
9. Write about incremental and cumulative backup techniques. (2)
10. Why virtualization is needed. List the forms of virtualization. (3)

PART – B (5x10=50 Marks)

11. Explain the role of each element in establishing data centre infrastructure.

12. Explain the components of intelligent storage system.

13. Differentiate SAN and NAS. Explain the components of SAN architecture in detail.

14. What is IP-SAN? Why there is need of IP-SAN? How IPSAN is implemented. Write about FCIP topologies.

15. How backup is performed in NAS environment.

16. Write about BC planning lifecycle in detail using an appropriate diagram.

17. List and analyse the threats in each security domain. Explain critical security attributes for information system.

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Code No. 3384

FACULTY OF INFORMATICS

B.E. 4/4 (IT) II-Semester (Main/Backlog) Examination, May / June 2017

Subject : Simulation and Modeling (Elective – IV)

Time : 3 hours **Max. Marks : 75**

Note: Answer all questions from Part-A and any FIVE questions from Part-B.

PART – A (25 Marks)

1	Describe system environment.	3
2	What is simulation?	2
3	Define queuing system.	3
4	What is a model?	2
5	Define Pseudo-Random numbers.	3
6	What is probability distribution?	2
7	Define Time series input model.	3
8	What is Data Analysis?	2
9	Define validation of Models.	3
10	What is Turing test?	2

PART – B (50 Marks)

11	a)	Explain about advantages and disadvantages of simulation.	7
	b)	Write the simulation examples.	3
12	a)	Describe SIMAN.	5
	b)	Explain briefly about SLAM II.	5
13	a)	Discuss about Weibul distribution.	5
	b)	Explain Poisson Distribution.	5
14	a)	Explain the types of simulation with respect to output analysis.	7
	b)	Write about Goodness of Fit tests.	3
15		Discuss in detail input / output validation using historical data.	10
16	a)	Explain Descrete-Event system simulation.	7
	b)	Write the simulation areas of application.	3
17	a)	Explain about discrete probability distributions.	7
	b)	Write notes on uniform distributions.	3

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Code No 3385

FACULTY OF INFORMATICS

B.E. 4/4 (I.T.) II – Semester (Main) Examination, May / June 2017

Subject: Advanced Computer Architecture (Elective – IV)

Time: 3 Hours **Max.Marks: 75**

Note: Answer all questions from Part A. Answer any five questions from Part B.

PART – A (25 Marks)

1 Mention the techniques available to measure the performance. [3]
2 Sketch the architecture of vector super computer. [2]
3 List out salient features of vector processor. [2]
4 Define inclusion property and coherence property. [2]
5 How do the static interconnection networks differ from dynamic interconnection networks? [2]
6 State cache coherence problem. [3]
7 Describe the multistage networks with a diagram. [3]
8 List the three types of loop optimizations. [3]
9 Define Optimistic Concurrency. [2]
10 Compare shared memory and distributed memory. [3]

PART – B (5x10 = 50 Marks)

11 a) Compare Data flow and control flow computers. [5]
b) Describe the various variant PRAM model. [5]

12 a) Describe various overlapped FDE stages of superscalar execution. [5]
b) Explain different pipeline hazards. [5]

13 a) Explain Routing Omega Network. [5]
b) Describe the scheduling of fine grain and coarse grain. [5]

14 a) Describe the working of vector processing instructions with example. [5]
b) Explain remote loads and synchronization loads. [5]

15 a) Compare Multiprocessor and Multicomputer. [4]
b) Describe the various types of vector instructions. [5]

16 a) Describe the features of parallel language and parallel programming. [5]
b) What are various message type and parameters in message passing programme development? [5]

17 Write short notes on:
a) Role of loop parallelization in vectorization. [5]
b) Design of Crossbar network. [5]

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Code No. 3386

FACULTY OF INFORMATICS

B.E. 4/4 (IT) II-Semester (Makeup) Examination, May / June 2017

Subject : Natural Language Processing (Elective – IV)

Time : 3 hours **Max. Marks : 75**

Note: Answer all questions from Part-A and any FIVE questions from Part-B.

PART – A (25 Marks)

1	What are the features of good grammar?	2
2	Define Lexicon. What is its significance in Natural Language Processing?	3
3	What is simple noun phrase?	2
4	What are the main issues in semantic interpretation?	3
5	Explain Noun – Noun modifiers.	2
6	What is Case grammar?	2
7	Define Natural language processing. List any two applications of Natural Language Processing.	3
8	What is logical form? How is it helpful in sentence interpretation?	3
9	Draw and explain derived tree for “the boy kicked the bucket”?	3
10	Explain Context – Free grammars.	2

PART – B (50 Marks)

11	a) What is Natural Language processing understanding? Explain with an example.	5
	b) What is a phrase? Explain prepositional phrase and compliments with example.	5
12	a) Explain Shift Reduce Parser.	5
	b) What is Look ahead parser?	5
13	Explain semantic networks with example? What is the advantage in removing inheritance property in semantic network.	10
14	Explain the different types of logical forms. Discuss the features of logical forms.	10
15	Discuss rule – by rule semantic interpretation based on lambda calculus.	10
16	Write short notes on : a) Word senses ambiguity b) Encoding ambiguity in logical forms.	10
17	Write short notes on :	
	a) Problems of Machine translation	5
	b) Draw the block schematic of Anusaraka	5

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