Hall Ticket Number:

<div align="center">

II/IV B.Tech (Supplementary) DEGREE EXAMINATION

</div>

April, 2018   **Common to CSE & IT**

Fourth Semester   **Probability & Statistics**

Time: Three Hours   **Maximum:** 60 Marks

Answer Question No.1 compulsorily.   (1X12 = 12 Marks)

Answer ONE question from each unit.   (4X12=48 Marks)

1. Answer all questions   (1X12=12 Marks)
   a) Define a continuous random variable.
   b) Define Log-Normal distribution
   c) What do you mean by a sample.
   d) Define interval estimation.
   e) Define level of significance.
   f) Define type I error.
   g) Write the test statistic for one proportion
   h) What are the various control charts for measurements
   i) Write the control limits for p-chart.
   j) Define Reliability
   k) Write mean and variance of uniform distribution.
   l) Write the critical region for testing one mean,

<div align="center">

UNIT I

</div>

2. a) A marksman has a probability of 0.9 of hitting a target on a single shot. If the marksman has 40 shots, what is the probability that he hits the target
      i) at least 35 times
      ii) between 34 and 36 times   6M

   b) If the amount of cosmic radiation to which a person is exposed while flying by a jet across a given country is a random variable having the normal distribution with μ=4.35 mrem and σ=0.59 mrem. Find the probabilities that the amount of cosmic radiation to which a person will be exposed is
      i) between 4.0 and 5.0 mrem   ii) at least 5.5 mrem.   6M

<div align="center">

(OR)

</div>

3. a) In a certain city, the daily consumption of electric power (in millions of kilowatt-hours) can be treated as a random variable having Gamma distribution with α=3 and β=2. If the power plant of this city has a daily capacity of 12 million kilowatt-hours, What is the probability that this power supply will be inadequate on any given day?   6M

   b) If two random variables have the joint density $f(x_1, x_2) = \begin{cases} x_1 x_2; & \text{for } 0 < x_1 < 2, 0 < x_2 < 1 \\ 0 & ; \text{ elsewhere} \end{cases}$. Find the probability that (a) Both random variables will take on values less than 1.

   (b) The sum of the values taken on by the two random variables will be less than 1.   6M

<div align="center">

UNIT II

</div>

4. a) Five measurements of tar content of certain kind of cigarette yielded 14.5, 14.2, 14.4, 14.3 and 14.6 milligrams per cigarette. Show that the difference between the mean of this sample and the average tar claimed by the manufacturer μ=14.0 mg/cigarette is significant at α=0.05.   6M

   b) The following are the average weekly loses of working hours due to accidents in 10 industrial plants before and after a certain safety program was put into operation. Use the 5% level of significance to test whether the safety program is effective

Before:	45	73	46	124	33	57	83	34	26	17
After:	36	60	44	119	35	51	77	29	24	11

        6M

<div align="center">

(OR)

</div>

5. a) If 12 observations of the specific heat of iron have a standard deviation of 0.0086, test the null hypothesis that σ=0.01 for such observations. Use the alternative hypothesis $\sigma \neq 0.01$ and level of significance 0.01.   6M

b) Two independent random samples of 8 and 7 items respectively have the following values:

Sample 1:	9	11	13	11	15	9	12	14
Sample 2:	10	12	10	14	9	8	10	

Test for the equality of the variances at 1% level of significance? 6M

UNIT III

6. a) A study shows that 16 of 200 tractors produced on one assembly line required extensive adjustments before they could be shipped, while the same was true for 14 of 400 tractors produced on another assembly line. At the 0.01 level of significance, does this support the claim that the second production line does superior work? 6M

b) 1072 college students were classified according to their intelligence and economic conditions. Test whether intelligence is independent of economic condition.

Economic Condition	INTELLIGENCE			
	Excellent	Good	Mediocre	Dull
Good	48	199	181	82
Not good	81	185	190	106

6M

(OR)

7. As a part of investigation of the collapse of the roof of a building, a testing laboratory is given all the available bolts that connected the steel structure at 3 different positions on the roof. The faces required to sheer each of these bolts are as follows. Perform an ANOVA to test at 0.05 level of significance whether the differences among the sample means at the 3 positions are significant.

Position 1:	90	82	79	98	83	91	
Position 2:	105	89	93	104	89	95	86
Position 3:	83	89	80	94			

12M

UNIT IV

8. a) Sample means and the sample ranges for 10 samples of size 5 each are given. Draw $\bar{x}$ and R - chart and comment on the process.

$\bar{x}$:	15	17	15	18	17	14	18	15	17	16
R :	7	7	4	9	8	7	12	4	11	5

6M

b) The following data provides the number of defective fuses which were found in an inspection of 20 samples of 100 fuses each. Construct the fraction defective chart and state the nature of the process.

Sample:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Defectives	5	10	12	8	6	5	6	3	3	5	4	7	8	2	3	4	5	8	6	10

6M

(OR)

9. a) A system consists of 5 identical components connected in parallel. What must be the reliability of each component if the overall reliability of the system is given to be 0.96. 6M

b) A certain component has exponential like distribution with failure rate $\alpha=0.0045$ failures per hour.

   i) What is the probability that the component fails during the first 250 hours of its operation?

   ii) What is the probability that the two such components will both survive the first 100 hours of operation?

6M

Hall Ticket Number:

II/IV B.Tech (Supplementary) DEGREE EXAMINATION

April, 2018	**Common to CSE & IT**
Fourth Semester	**GUI Programming**
Time: Three Hours	**Maximum :** 60 Marks

Answer Question No.1 compulsorily. (1X12 = 12 Marks)

Answer ONE question from each unit. (4X12=48 Marks)

1　Answer all questions　(1X12=12 Marks)
   a) Define Class and Object.
   b) Differentiate Method Overloading and Method Overriding.
   c) Write the uses of final keyword.
   d) Define chained exception.
   e) Define thread.
   f) Define Applet. Write the syntax of <Applet> tag.
   g) Define stream.
   h) Define Event and Event Source.
   i) What is Adapter class? Write the advantages of Adapter class.
   j) Differentiate AWT and Swing Components.
   k) Define Socket.
   l) Define InetAddress.

UNIT I

2　a) What is inheritance? Explain various types of inheritance and write a program to implement multi level inheritance. 6M
　b) Define interface. Explain defining and implementing interfaces with an example program. 6M

(OR)

3　a) Define package. Write and explain an example program for creating, accessing and importing of packages. 8M
　b) Explain passing Command line arguments to a program with an example. 4M

UNIT II

4　a) Define exception. Explain the key words (try, catch, throw, throws, finally) used in exception handling in java with example programs? 8M
　b) Write a java program to create user defined exception class and test this class. 4M

(OR)

5　a) Explain Applet life cycle with an example program. 6M
　b) Define thread. Explain creating and running a multiple threads using Thread class and Runnable interface with example programs. 6M

UNIT III

6　a) Explain delegation event model and Explain mouse events handling with an example. 6M
　b) Explain FlowLayout, GridLayout, and BorderLayout classes. 6M

(OR)

7　a) Explain Menu, MenuBar and MenuItem classes with an example program. 6M
　b) Explain KeyListener interafce with an example program to handle KeyEvents. 6M

UNIT IV

8　a) Explain TCP/IP sockets and write a program to demonstrate it. 6M
　b) Explain JTree and JScrollPane classes with an Example. 6M

(OR)

9　a) What is JDBC? Explain in detail about JDBC Drivers. 6M
　b) Write a JDBC Application to implement DDL and DML commands. 6M

Hall Ticket Number:

II/IV B.Tech (Supplementary) DEGREE EXAMINATION

April, 2018   **Common to CSE & IT**
Fourth Semester   **Microprocessors and Microcontrollers**
Time: Three Hours   **Maximum :** 60 Marks

Answer Question No.1 compulsorily.   (1X12 = 12 Marks)

Answer ONE question from each unit.   (4X12=48 Marks)

1. Answer all questions   (1X12=12 Marks)
   a) List any 2 advantages of Microprocessor.
   b) What is the significance of stack pointer in 8086?
   c) Write about macros in 8086.
   d) What is interrupt priority control register?
   e) What is the significance of READY pin in 8086?
   f) List out any two minimum mode pins.
   g) What is ICW1 in 8259?
   h) What are SLAVE and MASTER during interfacing?
   i) Explain about CALL instruction in 8051 micro controller.
   j) List any 2 arithmetic instructions in 8051 micro controller.
   k) List any 2 addressing modes of 8051 micro controller.
   l) List interrupts of 8051 micro controller.

UNIT I

2. a) Explain the following 8086 instructions with suitable Examples.
      i) MOV [3845H], BX ii) ADD AX, [SI] iii) IMUL iv) NEG v) LODS vi) AAD   6M
   b) Write an assembly language program in 8086 to find the sum of first N natural numbers   6M

(OR)

3. a) What is an assembler directive? List and explain different assembler directives of the 8086 microprocessor   6M
   b) Write an 8086 assembly language program to find the average of a given array of data elements of size ten.   6M

UNIT II

4. a) Explain the minimum mode operation of 8086 microprocessor with corresponding timing diagrams.   8M
   b) Explain Memory read cycle of 8086 with timing diagram.   4M

(OR)

5. a) Draw the functional pin diagram of 8086 microprocessor and explain how they are classified.   8M
   b) Draw and explain the interrupt vector table structure of 8086 microprocessor   4M

UNIT III

6. a) Draw and discuss the internal architecture of 8259A.   6M
   b) Write an ALP to add the first ten natural numbers in 8051 microcontroller.   6M

(OR)

7. a) With a neat block diagram, explain the working of 8237 DMA controller.   8M
   b) Compare microcontroller and microprocessor.   4M

UNIT IV

8. a) Write about ADDRESSING MODES of 8051 microcontroller.   6M
   b) Write an ALP in 8051 microcontroller to sort the array of 20 elements in ascending order.   6M

(OR)

9. a) Explain the structure of TCON register.   6M
   b) Write about memory organization of 8051 microcontroller.

   6M

Scheme

1. All bits carry one mark.

2. a) Each instruction-1 M

    Six instructions-6*1=6M

  b) Program with explanation -6M

3. a) Assembler Directive Definition-1 M

    Explanation-5 M

  b) Program with explanation -6M

4. a) Minimum mode diagram-4 M Explanation-4 M

   b) Memory read cycle explanation -8M

5. a) Pin Diagram- 4 M, Explanation- 4M

  b) Interrupt Vector table-2 M Diagram-2 M

6. a) Architecture- 3 M explanation -3M

   b) Program with explanation -6 M

7. a) Architecture- 3 M explanation -5M

  b) 4 Comparisons between microprocessor and microcontroller-4*1=4 M

8. a) Each addressing mode-1 M

    Any Six addressing modes-6*1=6M

 b) Program with explanation -6 M

9. a) TCON Register structure- 3M Explanation-5M

  b) Program with explanation -4 M