Hall	Tick	et Number :	
Code:	<b>4G</b> 1	R-14	
		I B.Tech. I Semester Supplementary Examinations May 2018	
		Digital Logic Design	
		(Computer Science & Engineering)	
		rks: 70 er all five units by choosing one question from each unit ( 5 x 14 = 70 Marks ) ********	rs
		UNIT–I	
1.	a)	Perfy the following operion in 2's com	
		(i) + 6 - 3(ii) - 2 - 6(iii) + 4 - 7	6M
	b)	List the truth table of the function	
		(i) F = xy + xy' + y'z	
		(ii)F = y'z + wxy' + wxz' + w'x'z	8M
		OR	
2.	a)	Given the tw $1010100$ (11, perform the subtraction $(i)X - Y$ ( <i>ii</i> ) $Y - X$ using 2's complement and 1's complement	
		subtraction $(i)X - Y$ $(ii)Y - X$ using 2's complement and 1's complement	7M
	b)	Fubtraction $(i)X - Y$ $(ii)Y - X$ using 2's complement and 1'	
		ind the Complement of the following expressions: (i)(x + y' + z)(x' + z')(x + y) (ii) $(AB' + C)D' + E$	7M
		UNIT–II	
3.	a)	Show that the dual of the exclusive-Or is also its complement	7M
	b)	Derive the circuits for a three-bit parity generator and four-bit parity checker	
		using odd parity bit.	7M
		OR	
4.		Simplifying the sential prime inplicants	
		$(i) F(w, x, y, z) = \sum (0,2,4,5,6,7,8,10,13,15)$	
		$(ii) F(A, B, C, D) = \sum_{(1,3,4,5,10,11,12,13,14,15)}$	14M
			1 1101
5.	a)	<b>UNIT–III</b> Design a combinational circuit that generates the 9's complement of a BCD digit	7M
0.	,		7 111
	b)	Design a half-subtractor with inputs x and y and outputs D and B. The circuit subtractor x-y and places the difference in D and the borrow in B.	7M
		OR	
e	$\sim$		QN /
6.	a)	Implement a full adder with two 4 X 1 multiplexers	8M
	b)	Construct a 4-to-16 line decode with five 2-to-4 line decoders with enable	6M
		Page 1 c	of <b>2</b>

6M

UNIT–IV

7. a) Write short note	es on
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- (i) JK flip-flop
- (ii) D flip-flop
- (iii) T flip-flop
- b) Construct a JK flip-flop using a D flipflop ,a 2-to-1 line multiplexer and an inverter
   8M

OR

8. a) Design a serial 2's complement with a shift register and a flip-flop. The binary number is shifted out from one side and it's 2's complement shifted into other side of the shift register.
b) Explain universal shift register with neat diagram
8M

# UNIT-V

9.	a)	Given a 32 X 8 ROM chip with an enable input, show the external connections necessary to construct a 128 X 8 ROM with four chips and a decoder.	7M
	b)	Write short notes on Programmable Array Logic with example	7M
		OR	
10.	a)	Write short notes on	
		(i) SR latch with NAND gates	
		(ii) Debounce circuits	8M
	b)	Distinguish between hazards in combinational and sequential circuits	6M

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Hall	Tick	et Number :	
Code	<b>e: 4</b> G	R-14	
		II B.Tech. I Semester Supplementary Examinations May 2018 Electrical Engineering and Electronics Engineering (Common to ME, CSE & IT)	
_		Time: 3 Hou ver all five units by choosing one question from each unit ( 5 x 14 = 70 Marks )	Jrs
4		UNIT-I	<b>CN</b> 4
1.	a)	•	6M
	b)	Three resistances 2, 5 and 10 are connected in series across a supply voltage of 25 Volts. Calculate	
		(i) Total current supplied (ii) Voltage across each resistor	8M
		OR	
2.	a)	Derive expression for equivalent capacitance when three capacitors of capacitances of $C_1, C_2$ and $C_3$ are connected in series	7M
	b)	Three inductances 10, 20 and 30 are connected in a delta connection. Find the equivalent star connection	7M
		UNIT–II	
3.	a)	Derive the EMF equation of DC generator	6M
	b)	A 4 pole generator having 51 slots with each slot containing 20 conductors. The machine is driven at 1500 rpm and assuming the flux per pole to be 7.0mWb. What will be the voltage generated in machine when the armature winding is (i) Lap connected (ii) Wave connected.	8M
		OR	
4.	a)	What is meant by starter and explain the principle of operation of three point starter	7M
	b)	What are the different types of speed control methods and explain any one of the speed control methods in detail	7M
		UNIT–III	
5.	a)	Explain the principle of operation of single phase transformer with a neat diagram	6M
	b)	A 250KVA single phase transformer has iron losses of 1.8KW and full load copper losses is 200 watts. Calculate	
		(i) Efficiency at full load at 0.8 p.f lagging	
		(ii) Efficiency at half load at 0.8 p.f leading	
		(iii) Maximum efficiency at 0.8 p.f lagging	8M
		OR	
6.	a)	Explain the principle of operation of alternator with a neat sketch	7M
	b)	Draw and explain the slip-torque characteristics of three phase induction motor	7M

		UNIT–IV	
7.	a)	With a neat circuit diagram explain the principle of operation of full wave diode bridge rectifier along with its input and output waveforms	8M
	b)	What is meant by rectifier and list it's applications	6M
		OR	
8.	a)	Explain the following (i) PNP transistor (ii) NPN transistor	7M
	b)	Draw the frequency response of CE amplifier and explain	7M
		UNIT-V	
9.		Explain about different types of electric heating and mention its industrial applications	14M
		OR	
10.	a)	Draw and explain the principle of CRT	7M
	b)	Explain the following	
		(i) Voltage measurement of CRO	
		(ii) Frequency measurement of CRO	7M

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	Hall Ticket Number :													
	Code: 4GC33											1	R-14	
	II B.Tech. I S	eme	este	r Sup	ople	eme	ntar	y Ex	ami	nati	ons	May 2	018	
						-					~ \			
	Max. Marks: 70 Answer all five units b	-				que	stion		_					
				U	NIT-	-1								
a)	2%, 3% and 2% of th probability that a car pu	e ca urcha	rs pr ased	oduc is de	ed f	rom ve. (	B₁, E ii) If a	B <sub>2</sub> ar a car	nd Ba pura	are chase	defe ed is	ective. (i	i) What is the	7M
b)														
	$f(x) = \begin{cases} kxe \\ 0, \\ 0, \\ kxe \\ 0, \\ 0, \\ 0, \\ 0, \\ 0, \\ 0, \\ 0, \\ 0$	l > 0 se	De	eterm	nine	" <i>k</i>	(i	i) me	an	(iii) \	/aria	nce		7M
2)	In a halt factory machin			<u> </u>	opuf			א /סר	200/	500/	of t	ha tatal	of their output	
a)	and 6%, 3% and 2% ar	e de	fectiv	ve. A	bolt	is dr	awn a	at rar	ndom	n and	l four	nd to be	•	7M
b)				nber	<i>E</i> of	the c				-	12 ite	ems out	of which 5 are	7M
<b>c</b> )	When the mean of the		rko i				E0/	The	n 60	)0/ o	ftha	otudoni	to foiled in on	
a)	examination. Determin order to show that 70	e the	e gra	ce m	narks	to b	be av	varde	ed/pa	ass n	nark	should	be reduced in	
<b>b</b> )		aha	~							مماد	Lind	the prob	ability that the	7M
D)	•		•	•	•	' give	en da	-	aDa	ank.	гпа	the prob		7M
a)	that in a sample of 10 to	ools s	selec	ted a	at ran	dom	exad	ctly tv	vo w	ill be	defe		• •	7M
b)							•					12) (ii)		
	P(X 20) (iii) <i>P</i> (X 20) (ii	/) if <i>I</i>	P(X >				n find	d C.						7M
a)	random samples each o distributed with mean µ	of siz I=22.	e n= .4 an	36 aı d sta	re dra andai	awn	from	a pop	oulat	ion o	f N=	1500 wh	ich is normally	7M
b)	of mechanics of a lar	ge w	orks	hop	and	assı	uming						•	7M
	,													
a)	confidence intervals for	the	mear	n lead	d cor	ncent	ratio	n in a	a rive	r if th	ne me	ean lead	concentration	7M
	<ul> <li>b)</li> <li>a)</li> <li>b)</li> <li>a)</li> <li>b)</li> <li>a)</li> <li>b)</li> <li>a)</li> <li>b)</li> <li>b)</li> <li>c)</li> &lt;</ul>	Code: 4GC33 II B.Tech. I S Max. Marks: 70 Answer all five units b a) Companies $B_1$ , $B_2$ , $B_3$ g 2%, $3%$ and $2%$ of the probability that a car pur- what is the probability the Nacontinuous random v A continuous random v $f(x) = \begin{cases} kxe -\lambda^x, x \ge 0, \lambda \\ f(x) = c \end{pmatrix}$ a) In a bolt factory machinand 6%, 3% and 2% and find the probability that b) A sample of 4 items is a defective. Find the expension a) When the mean of the examination. Determined order to show that 70 distributed. b) On an average six badd bank will receive four b a) 10% of the bolts product that in a sample of 10 to distributed. b) On an average six badd bank will receive four b content to the mean a random samples each of the probability distributed for the probability distributed for the distributed with mean preplacement (ii) without b) Using the mean of a random samples each of the probability about the maximum of the mean of a random samples each of the distributed with mean preplacement (ii) without b) Using the mean of a random samples each of the mean of a random sample	Code: 4GC33 II B.Tech. I Sema (Co Max. Marks: 70 Answer all five units by ch a) Companies $B_1$ , $B_2$ , $B_3$ produ 2%, 3% and 2% of the ca probability that a car purchar what is the probability that th what is the probability that th $x = 1^{k_{R}} e_{0}^{-\lambda^{x}}$ , $x \ge 0, \lambda > 0$ $f(x) = \begin{cases} kxe_{0}^{-\lambda^{x}}, x \ge 0, \lambda > 0$ $f(x) = \begin{cases} kxe_{0}^{-\lambda^{x}}, x \ge 0, \lambda > 0 \\ 0, 0 \text{ therwise} \end{cases}$ a) In a bolt factory machines $A$ and 6%, 3% and 2% are defined the probability that it is in b) A sample of 4 items is selected defective. Find the expected a) When the mean of the mark examination. Determine the order to show that 70% of distributed. b) On an average <b>six</b> bad chear bank will receive four bad chear a) 10% of the bolts produced bank that in a sample of 10 tools and the four bank a) Determine the mean and si random samples each of size distributed with mean $\mu=22$ . replacement (ii) without repl b) Using the mean of a randor of mechanics of a large way probability about the maxim	<ul> <li>Code: 4GC33 <ul> <li>II B.Tech. I Semester</li> <li>P <ul> <li>(Comp)</li> </ul> </li> <li>Max. Marks: 70 <ul> <li>Answer all five units by choos</li> </ul> </li> <li>a) Companies B<sub>1</sub>, B<sub>2</sub>, B<sub>3</sub> produce 3 2%, 3% and 2% of the cars pr probability that a car purchased what is the probability that this cat what is the probability that this cat a continuous si andom variable hat it is manue for the probability that it is manue for the probability that it is manue b) A sample of 4 items is selected a defective. Find the expected num</li> <li>a) When the mean of the marks is examination. Determine the gra order to show that 70% of the distributed.</li> <li>b) On an average six bad cheques bank will receive four bad cheques bank will re</li></ul></li></ul>	<ul> <li>Code: 4GC33 <ul> <li>II B.Tech. I Semester Supprob</li> <li>(Computer Max. Marks: 70</li> <li>Answer all five units by choosing a generative structure of the sense of the sense</li></ul></li></ul>	Code: 4GC33 II B.Tech. I Semester Suppler Probabil (Computer Scient Max. Marks: 70 Answer all five units by choosing one UNIT- a) Companies $B_1$ , $B_2$ , $B_3$ produce 30%, 45% 2%, 3% and 2% of the cars produced for probability that a car purchased is defecting what is the probability that this car is produced f(x) = { $kxe_{-x}^{x}$ , $x \ge 0, \lambda \ge 0$ $f(x) = {kxe_{-x}^{x}$ , $x \ge 0, \lambda \ge 0$ $f(x) = {kxe_{-x}^{x}$ , $x \ge 0, \lambda \ge 0$ $f(x) = {kxe_{-x}^{x}$ , $x \ge 0, \lambda \ge 0$ Determine to and 6%, 3% and 2% are defective. A bolt find the probability that it is manufactured b) A sample of 4 items is selected at random defective. Find the expected number <i>E</i> of UNIT- a) When the mean of the marks is 50% & examination. Determine the grace marks order to show that 70% of the student distributed. b) On an average six bad cheques per day a bank will receive four bad cheques on any a) 10% of the bolts produced by a certain mark that in a sample of 10 tools selected at random distribution (ii) Poisson distribution and co b) X is normally distributed with mean 12 and P(X 20) (iii) $P(X 20)$ (iv) if $P(X > C) = 0.2$ : UNIT- a) Determine the mean and standard devial random samples each of size n=36 are dra distributed with mean $\mu=22.4$ and standard replacement (ii) without replacement. b) Using the mean of a random sample of s of mechanics of a large workshop and probability about the maximum size of the a) Assuming that the population standard deviae for the population standard deviae a sof mechanics of a large workshop and probability about the mean lead cor	Code: 4GC33 II B.Tech. I Semester Suppleme Probability ( Computer Science Max. Marks: 70 Answer all five units by choosing one que *** UNIT-I a) Companies $B_1$ , $B_2$ , $B_3$ produce 30%, 45% and 2%, 3% and 2% of the cars produced from probability that a car purchased is defective. ( what is the probability that this car is produced Wmat is the probability that this car is produced what is the probability that this car is produced what is the probability that this car is produced $f(x) = \begin{cases} fxxe_{0,0} Cherwise \\ 0, Otherwise \end{cases}$ Determine (i) k of a) In a bolt factory machines A, B, C manufactur and 6%, 3% and 2% are defective. A bolt is drifted find the probability that it is manufactured by ( b) A sample of 4 items is selected at random from defective. Find the expected number E of the of UNIT-II a) When the mean of the marks is 50% & is examination. Determine the grace marks to b order to show that 70% of the students pa distributed. b) On an average six bad cheques per day are ref bank will receive four bad cheques on any give O a) 10% of the bolts produced by a certain machir that in a sample of 10 tools selected at random distribution (ii) Poisson distribution and commed b) X is normally distributed with mean 12 and S.C P(X 20) (iii) $P(X 20)$ (iv) if $P(X > C) = 0.24$ the UNIT-III a) Determine the mean and standard deviation random samples each of size n=36 are drawn is distributed with mean $\mu=22.4$ and standard deviation random samples each of size n=36 are drawn is distributed with mean $\mu=22.4$ and standard deviation andom samples each of size n=36 are drawn is distributed with mean $\mu=22.4$ and standard deviation andom samples each of size n=36 are drawn is distributed with mean $\mu=22.4$ and standard deviation andom samples each of size n=36 are drawn is distributed with mean $\mu=22.4$ and standard deviation andom samples each of size n=36 are drawn is distributed with mean $\mu=22.4$ and standard deviation andom samples each of a large workshop and assup	Code: 4GC33 II B.Tech. I Semester Supplementar Probability & St (Computer Science and Max. Marks: 70 Answer all five units by choosing one question ***** UNIT-I a) Companies $B_1, B_2, B_3$ produce $30\%, 45\%$ and $25\%$ $2\%, 3\%$ and $2\%$ of the cars produced from $B_1, E$ probability that a car purchased is defective. (ii) If a what is the probability that this car is produced by th what is the probability that this car is produced by th what is the probability that this car is produced by th $A \operatorname{contr}_{UoU} = {}^{x,x} \ge 0, \lambda \ge 0$ $f(x) = {}^{kxe} \frac{0, 0 \operatorname{therwise}}{0, 0 \operatorname{therwise}}$ Determine (i) $k$ (ii) Marking the probability that is manufactures 20 and 6%, 3% and 2% are defective. A bolt is drawn a find the probability that it is manufactured by (i) mad b) A sample of 4 items is selected at random from a bid defective. Find the expected number $E$ of the defect UNIT-II a) When the mean of the marks is 50% & is 5%. examination. Determine the grace marks to be aw order to show that 70% of the students passed distributed. b) On an average six bad cheques per day are receive bank will receive four bad cheques on any given da OR a) 10% of the bolts produced by a certain machine tur that in a sample of 10 tools selected at random exact distribution (ii) Poisson distribution and comment up b) X is normally distributed with mean 12 and S.D = 4t P(X 20) (iii) $P(X 20)$ (iv) if $P(X > C) = 0.24$ then find is normally distributed with mean 12 and S.D = 4t P(X 20) (iii) poisson distribution of the random samples each of size n=36 are drawn from distributed with mean $\mu$ =22.4 and standard deviation for mechanics of a large workshop and assuming probability about the maximum size of the error. OR a) Assuming that the population standard deviation is confidence intervals for the mean lead concentration of the sconfidence intervals for the mean lead concentration of the sconfidence intervals for the mean lead concentration of the confidence intervals for the mean lead conce	Code: 4GC33 II B.Tech. I Semester Supplementary Ex Probability & Statis ( Computer Science and Eng Max. Marks: 70 Answer all five units by choosing one question from ***** UNIT-I a) Companies <i>B</i> <sub>1</sub> , <i>B</i> <sub>2</sub> , <i>B</i> <sub>2</sub> produce 30%, 45% and 25% of tt 2%, 3% and 2% of the cars produced from B <sub>1</sub> , B <sub>2</sub> ar probability that a car purchased is defective. (ii) If a car what is the probability that this car is produced by the co what is the probability that this car is produced by the co what is the probability that this car is produced by the co what is the probability that this car is produced by the co what is the probability that this car is produced by the co what is $\frac{1}{1}$ he $\frac{r}{c}$ , $\frac{2}{c}$ , $\frac{2}$	Code: 4GC33 II B.Tech. I Semester Supplementary Exami Probability & Statistics (Computer Science and Engine Max. Marks: 70 Answer all five units by choosing one question from ex- ***** UNIT-I a) Companies $B_1, B_2, B_3$ produce 30%, 45% and 25% of the ca 2%, 3% and 2% of the cars produced from $B_1, B_2$ and $B_2$ probability that a car purchased is defective. (ii) If a car purch what is the probability that this car is produced by the compa- wat is the probability that this car is produced by the compa- wat is the probability that this car is produced by the compa- ment is $\sum_{i=1}^{n}$ andom variable has the probability density fun- $A \ continuou = \sum_{i=1}^{n} andom variable has the probability density fun- f(x) = \begin{cases} kx e_{0,0} \ Otherwise \\ 0,0 \ otherwise \\ 0 \ oth$	Code: 4GC33 II B.Tech. I Semester Supplementary Examinati Probability & Statistics ( Computer Science and Engineering Max. Marks: 70 Answer all five units by choosing one question from each to ****** UNIT-I a) Companies $B_1, B_2, B_3$ produce 30%, 45% and 25% of the cars re 2%, 3% and 2% of the cars produced from $B_1, B_2$ and $B_3$ are probability that a car purchased is defective. (ii) If a car purchase what is the probability that this car is produced by the company B what is the probability that this car is produced by the company B what is the probability that this car is produced by the company B $f(x) = \begin{cases} kxe^{-x^2}, x \ge 0, \lambda > 0 \\ 0, OR \end{cases}$ a ln a bolt factory machines A, B, C manufactures 20%, 30%, 50% and 6%, 3% and 2% are defective. A bolt is drawn at random ano- find the probability that it is manufactured by (i) machine A (ii) m b) A sample of 4 items is selected at random from a box containing defective. Find the expected number E of the defective items. <b>UNIT-I</b> a) When the mean of the marks is 50% & is 5%. Then 60% o examination. Determine the grace marks to be awarded/pass m order to show that 70% of the students passed. Assume the distributed. b) On an average six bad cheques per day are received by a bank. bank will receive four bad cheques on any given day. <b>OR</b> a) 10% of the bolts produced by a certain machine turn out to be de that in a sample of 10 tools selected at random exactly two will be distribution (ii) Poisson distribution and comment upon the resulf? b) X is normally distributed with mean 12 and S.D = 4then find (i) P( P(X 20) (iii) P(X 20) (iv) if $P(X > C) = 0.24$ then find C. <b>UNIT-II</b> a) Determine the mean and standard deviation of 0.048, replacement (ii) without replacement. b) Using the mean of a random sample of size 150 to estimate the of mechanics of a large workshop and assuming =6.2, what probability about the maximum size of the error. <b>OR</b> a) Assuming that the population standard deviation is 0.3, calculat confidence interva	Code: 4GC33 II B.Tech. I Semester Supplementary Examinations <b>Probability &amp; Statistics</b> ( Computer Science and Engineering ) Max. Marks: 70 Answer all five units by choosing one question from each unit ***** <b>UNIT-I</b> a) Companies <i>B</i> <sub>1</sub> , <i>B</i> <sub>2</sub> , <i>B</i> <sub>3</sub> produce 30%, 45% and 25% of the cars respecent 2%, 3% and 2% of the cars produced from B <sub>1</sub> , B <sub>2</sub> and B <sub>3</sub> are defined probability that a car purchased is defective. (ii) If a car purchased is what is the probability that this car is produced by the company <i>B</i> <sub>3</sub> ? b) Mark is the probability that this car is produced by the company <i>B</i> <sub>3</sub> ? (i) A contribuous <i>A</i> <sup>*</sup> , $x \ge 0, A > 0$ (ii) mean (iii) Varia <i>Core</i> a) In a bolt factory machines <i>A</i> , <i>B</i> , <i>C</i> manufactures 20%, 30%, 50% of the and 6%, 3% and 2% are defective. A bolt is drawn at random and four find the probability that it is manufactured by (i) machine <i>A</i> (ii) machine b) A sample of 4 items is selected at random from a box containing 12 ite defective. Find the expected number <i>E</i> of the defective items. <b>UNIT-II</b> a) When the mean of the marks is 50% & is 5%. Then 60% of the examination. Determine the grace marks to be awarded/pass mark order to show that 70% of the students passed. Assume that the distributed. b) On an average six bad cheques per day are received by a bank. Find bank will receive four bad cheques on any given day. <b>OR</b> a) 10% of the bolts produced by a certain machine turn out to be defective that in a sample of 10 tools selected at random exactly two will be defect that in a sample of 10 tools selected at random exactly two will be defect that in a sample of 10 tools selected at random exactly two will be defect that in a sample of 10 tools selected at random exactly two will be defect that in a sample of 10 tools selected at random exactly two will be defect that in a sample of 10 tools selected at random exactly two will be defect that in a sample of 10 tools selected at random exactly two will be defect that in a sample of 10 tools selected at ra	Code: 4GC33         II B.Tech. I Semester Supplementary Examinations May 2         Probability & Statistics         (Computer Science and Engineering )         Max. Marks: 70         Answer all five units by choosing one question from each unit (5 x 14         ******         UNIT-I         (a) Companies B <sub>1</sub> , B <sub>2</sub> , B <sub>2</sub> produce 30%, 45% and 25% of the cars respectively. If 2%, 3% and 2% of the cars produced from B <sub>1</sub> , B <sub>2</sub> and B <sub>3</sub> are defective. (probability that a car purchased is defective. (ii) If a car purchased is found to what is the probability that this car is produced by the company B <sub>2</sub> ?         What is, the findom variable has the probability density function A contribuous indom variable has the probability function A contribuous indom variable has the probability density function A contribuce $\frac{1}{2}$ , $\frac{1}{2$	R-14         Code: 4GC33         II B.Tech. I Semester Supplementary Examinations May 2018 Probability & Statistics (Computer Science and Engineering)         Max. Marks: 70       Time: 3 Hours Answer all five units by choosing one question from each unit (5 x 14 = 70 Marks)         •••••••••••••••••••••••••••••••••••

b) A producer of TV's blelives from past experience that the mean length of life of TV's  $\mu$  is a normal variable with mean  $\mu_0$ =800hours and standard deviation \_0=10hours. It is known that TV's have mean length of life that is approximately normally distributed with a standard deviation of 100 hours. Construct a 95% Bayesian interval for  $\mu$  if a random sample of 25 TV's has an average life of 780hours.

7M

7M

7M

7M

7M

#### Code: 4GC33

### UNIT–IV

- 7. a) Mice with an average lifespan of 32 months will live upto 40 months when fed by a certain nutritious food. If 64 mice fed on this diet have an average lifespan of 38 months and standard deviation of 5.8 months, is there any reason to believe that average lifespan is less than 40 months.
  - b) If 6 out of 20 cigarette smokers randomly chosen preferred 'Charminar' cigarettes test the claim at 0.05 L.O.S., that 20% of the smokers prefer 'Charminar'.

#### OR

- 8. a) A machine runs on an average of 125 hours/year. A random sample of 49 machines has an annual average use of 126.9 hours with standard deviation 8.4hours. Does this suggest to believe that machines are used on the average more than 125hours annually at 0.05level of significance?
  - b) In a random sample of 10 bolts produced by a machine the mean length of bolt is 0.53mm and standard deviation 0.03mm. Can we claim from this that the machine is in power working order if in the past it produced bolts of length 0.5mm? Use 0.05 L.O.S.

## UNIT–V

- a) Test whether there is significant difference at 0.05 level in the quality of teaching among four engineering colleges A, B, C, D of technological universities if the number of failures are 26,23,15,32 respectively. Assume that each college has strength of 200 students.
  - b) Test the hypothesis at 0.05 L.O.S that the presence or absence of hypertension (HT) is independent of smoking habits from the following experiments data on 180 persons.

	Non	Moderate	Heavy				
	smokers	smokers	Smokers				
HT	21	36	30				
No HT	48	26	19				
OR							

10. a) Test for goodness of fit of a person distributed at 0.05 L.O.S. to the following frequency distribution.

Number of patients	0	1	2	3	1	5	6	7	Q
arriving/ hour: (x)	0	1	2	5	4	5	0	'	0
Frequency	52	151	130	102	45	12	5	1	2

b) Can we conclude that the population variances are equal for the following data of post graduates passed out from a 'state' and 'private' university?

State	8350	8260	8130	8340	8070		
Private	7890	8140	7900	7950	7840	7920	
****							

7M

7M

7M

7M

Hall	Tick	et Number : Substitute Subje	ct
Cod		P-1/	
COU		III B.Tech. I Semester Supplementary Examinations May 2018	
		Principles of Programming Languages	
		(Computer Science and Engineering)	
-	-	Time: 3 Hours all five units by choosing one question from each unit ( 5 x 14 = 70 Marks )	
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1.	a)	<b>UNIT–I</b> List the potential benefits of studying programming language concept?	7M
	b)	Discuss about the various programming domains and their associative languages?	7M
	0)	OR	7 1 1 1
2.	a)	Explain different aspects of the costs of a programming language?	7M
	b)	Explain syntax of a "for" statement in PASCAL using BNF Notation and syntax	
		graphs?	7M
3.	a)	<b>UNIT–II</b> Define a variable and what the attributes of a variable are? Elaborate on address	
0.	u)	of a variable?	8M
	b)	List and explain the design issues of pointers?	6M
		OR	
4.	a)	Write a note on Boolean and relational expressions?	7M
	b)	Discuss the advantages and disadvantages of mixed mode arithmetic expressions?	7M
5.	a)	List what advantages does java's break statement have over C's and C++'s	
		break statement?	7M
	b)	Explain about Unconditional Statements and guarded commands with suitable	
		examples? OR	7M
6.	a)	Explain the design issues of subprograms?	8M
	b)	Describe about Co routines?	6M
		UNIT-IV	
7.	a)	List the design issues for abstract data types?	7M
	b)	Explain the object-oriented programming support in java?	7M
8.	a)	OR Describe briefly about Monitors?	7M
0.	a) b)	Describe how exception is handled in ADA with an example?	7M
	5)		
9.	a)	Analyze the importance of logic programming languages over functional	714
	<b>ل</b> ا	programming languages?	7M 7M
	b)	Explain about the applications of logic programming? OR	<i>i</i> IVI
10.	a)	Write about data types and structures of LISP and LISP interpreter?	7M
	b)	List the ways in which ML is significantly different from scheme?	7M
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