

GOVERNMENT POLYTECHNIC, KOLHAPUR 416004.

(An Autonomous Institute of Govt. of Maharashtra)

EVEN TERM END EXAM MAY-2019

EXAM SEAT NO.

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LEVEL: **FIRST**

PROGRAM: **INFORMATION TECHNOLOGY**

COURSE CODE: **ITE108**

COURSE NAME: **BASIC ELECTRONICS**

MAX. MARKS: **80**

TIME: **3 HRS.**

DATE: **21/05/2019**

Instruction:-

- 1) Answers must be written in the main answer book provided. (and supplements if required)
- 2) Figure to the right indicates marks.
- 3) Illustrate your answers with sketches wherever necessary.
- 4) Use of non-programmable pocket calculator is permissible.
- 5) Mathematical and other tables shall be made available on request.
- 6) Assume additional suitable data necessary.
- 7) Use of Mobile is strictly prohibited.

Q.1 Attempt any **FOUR** Marks
(08)

- a) Write any two advantages of shunt capacitor filter.
- b) Define insulator.
- c) Draw output characteristics of npn transistor in CE configuration.
- d) Define Ripple factor.
- e) Write any two applications of zener diode.
- f) Draw the circuit of full wave rectifier.

Q.2 Attempt any **FOUR** (16)

- a) Compare conductors, insulators & semiconductors (any four points)
- b) Explain with circuit diagram CLC filter.
- c) Explain the working of npn transistor.
- d) Explain forward & reverse biasing of pn diode.
- e) Draw the structure of n-type and p-type semiconductor.
- f) Draw & explain fixed bias circuit.

Q.3 Attempt any **FOUR** (16)

- a) Draw input & output characteristics of CB configuration.
- b) Compare shunt capacitor, series inductor filter.(any four points)
- c) Write two advantages & two disadvantages of voltage divider bias circuit.
- d) Explain with circuit diagram, operating principle of p-n junction diode.

P.T.O

- e) Draw forward & reverse characteristics of zener diode with neat labelled diagram. Write any two applications of zener diode.

- f) Compare NPN and PNP transistor (any four points)

Q.4 Attempt any **FOUR**

(08)

- a) Define an amplifier.
- b) Draw frequency response curve for R-C coupled amplifier.
- c) Draw the symbols of FET'S
- d) What are the disadvantages of JFET? List any two.
- e) Classify different types of FETs
- f) Define load Regulation.

Q.5 Attempt any **FOUR**

(16)

- a) Why FET is unipolar? Explain construction of FET.
- b) List out the advantages of JEFT over BJT.
- c) Draw & explain block diagram of Regulated power supply.
- d) Draw & explain single stage amplifier.
- e) Explain how zener diode can be used as a voltage regulator.
- f) List out applications of transistorized shunt regulator.

Q.6 Attempt any **FOUR**

(16)

- a) Compare FET with BJT.
- b) List out applications of R-C coupled amplifier.
- c) Compare single stage amplifier with R-C coupled amplifier. (any four points)
- d) Draw and explain drain characteristics of JFET.
- e) Draw circuit diagram to get +18 V & -18 V using IC 7818 & IC7918 along with rectifier.
- f) Draw and explain transistorized series regulator.

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EVEN TERM END EXAM MAY-2019

EXAM SEAT NO.

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PROGRAM : INFORMATION TECHNOLOGY

LEVEL :- FIRST

COURSE CODE :- ITF104

COURSE NAME :- BASIC ELECTRONICS

MAX. MARKS : 40 TIME : 2 HRS. DATE :- 21/05/2019

Instruction :-

1) Answers must be written in the main answer book provided. (and supplements if required)

2) Illustrate your answers with sketches wherever necessary.

3) Use of non-programmable pocket calculator is permissible.

4) Mathematical and other tables shall be made available on request.

5) Assume and mention suitable additional data if necessary.

6) Use of Mobile is strictly prohibited.

7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	Question Text	R/ U/ A	Co ITF 104	Ma rks
Q.1		Attempt any FOUR :			08
	a)	Draw V-I characteristics of P-N junction diode.	R	2	
	b)	List any four general specifications of resistors.	R	1	
	c)	Draw symbol of NPN and PNP transistor.	R	3	
	d)	Define rectifier. Give its classification.	R	4	
	e)	State any four dielectric materials used in manufacturing the capacitor.	R	1	
	f)	State the need of filter.	R	4	
Q.2		Attempt any FOUR :			16
	a)	Draw the constructional diagram of air core inductor and explain	U	1	
	b)	Compare conductor, insulator and semiconductor on the basis of energy band diagram.	U	2	
	c)	With a neat diagram, explain the working of NPN transistor.	U	3	
	d)	Draw and explain block diagram of a DC regulated power supply.	U	4	
	e)	Define resistor. Give the classification of resistors.	R	1	
	f)	Draw circuit of full wave bridge rectifier and draw waveforms of input and output voltage.	R	4	
Q.3		Attempt any FOUR :			16
	a)	Explain operation of P-N junction diode with diagram.	U	2	
	b)	Explain working of single stage CE amplifier with neat circuit diagram.	U	3	
	c)	Compare LC and π filter. (any 4 points)	R	4	
	d)	Draw and explain the construction of an aluminium electrolytic capacitor.	U	1	
	e)	Draw the circuit diagram of zener diode as voltage regulator. Explain it.	U	2	
	f)	Sketch the output characteristics of CE configuration and show different regions on it.	U	3	

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PROGRAM : INFORMATION TECHNOLOGY

LEVEL :- FIFTH

COURSE CODE :- ITE503

COURSE NAME MANAGEMENT OF INFORMATION SYSTEM

MAX. MARKS : 80 TIME : 3 HRS. DATE :- 24/05 / 2019

Instruction :-

- 1) Answers of two sections must be written in separate section answer book provided.
- 2) Figure to the right indicate marks.
- 3) Illustrate your answers with sketches wherever necessary.
- 4) Use of non-programmable pocket calculator is permissible.
- 5) Mathematical and other tables shall be made available on request.
- 6) Assume additional suitable data necessary.
- 7) Use of Mobile is strictly prohibited.

Section- I			Ma rks
QN	S Q N		
Q.1		Attempt any FOUR :	08
	a)	Define MIS.	
	b)	Draw the physical view of MIS.	
	c)	Describe the term planning.	
	d)	List down the factors affecting the tools of planning.	
	e)	Define the law of requisite variety.	
	f)	List down the classes of system.	
Q.2		Attempt any FOUR :	16
	a)	Explain the conceptual view of MIS.	
	b)	State advantages of short range planning with the help of budget.	
	c)	Describe the term modeling.	
	d)	Explain what parameters impacting the information quality.	
	e)	Draw and explain model of Business function processing system.	
	f)	Describe the types of system.	
Q.3		Attempt any FOUR :	16
	a)	Explain characteristics of system approach.	
	b)	Define the information presentation and Bias in information in detail.	
	c)	Explain any two methods for selecting decision alternatives.	
	d)	Explain the Herbert Simon Model.	
	e)	List and explain the problems in making Relational Decision.	
	f)	Describe General Model of MIS.	

P.T.O.

Section- II		Ma rks
S QN		08
Q.4	Attempt any FOUR : What are MIS goals & objectives?	
	a)	
	b)	
	c)	
	d)	
	e)	
	f)	
Q.5	Attempt any FOUR : What are the features contributing to success?	16
	a)	
	b)	
	c)	
	d)	
	e)	
	f)	
Q.6	Attempt any FOUR : Explain concept of determining information requirements.	
	a)	
	b)	
	c)	
	d)	
	e)	
	f)	

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EVENT TERM END EXAM MAY-2019

EXAM SEAT NO.

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LEVEL :- **FIFTH** PROGRAM : **INFORMATION TECHNOLOGY**

COURSE CODE :- **ITE508/ITF505**

COURSE NAME **DISTRIBUTED SYSTEM**

MAX. MARKS : **80** TIME : **3 HRS.** DATE :- **17/05 / 2019**

Instruction :-

- 1) Answers of two sections must be written in separate section answer book provided.
- 2) Figure to the right indicate marks.
- 3) Illustrate your answers with sketches wherever necessary.
- 4) Use of non-programmable pocket calculator is permissible.
- 5) Mathematical and other tables shall be made available on request.
- 6) Assume additional suitable data necessary.
- 7) Use of Mobile is strictly prohibited.

QN	S Q N	Section- I	Ma rks
Q.1		Attempt any FOUR :	08
	a)	Define the term transient communication.	
	b)	What is an overlay network?	
	c)	Draw a neat diagram to show event based architecture of distributed system.	
	d)	Define distributed system.	
	e)	State function of data link layer.	
	f)	What is difference between vertical distribution and horizontal distribution of client server organization?	
Q.2		Attempt any FOUR :	16
	a)	Explain following transparency in distributed system i) Location transparency ii) Access transparency iii) Replication transparency iv) Failure transparency	
	b)	With neat diagram explain layered organization of internet search engine.	
	c)	Explain basic idea behind a message queuing system.	
	d)	State and explain socket primitives of TCP/IP.	
	e)	Describe centralized architecture with neat diagram.	
	f)	Explain different scalability problems for a system.	
Q.3		Attempt any TWO :	16
	a)	Describe layered architecture of grid computing systems with neat diagram.	
	b)	i) List the steps in remote procedure call. ii) With neat diagram explain asynchronous RPC.	04 04
	c)	Explain working of Bit Torrent with neat diagram.	

P.T.O.

S Q N		Section- II	Ma rks
Q.4		Attempt any FOUR :	08
	a)	Define process.	
	b)	Give any two examples of distributed applications that use GPS information.	
	c)	Enlist types of security threats.	
	d)	List models of server.	
	e)	State the use of timer in computer system.	
	f)	Define code migration.	
Q.5		Attempt any FOUR :	16
	a)	Explain confidential Group Communication.	
	b)	Describe the use of physical clocks in clock synchronization.	
	c)	Explain X- window system.	
	d)	Define security policy. Enlist important security mechanisms.	
	e)	Explain election algorithm using ring.	
	f)	Describe the working of multithreaded client.	
Q.6		Attempt any TWO :	16
	a)	Explain code migration in Heterogeneous system.	
	b)	Explain how mutual exclusion is achieved using a centralized algorithm.	
	c)	Describe digital signatures for message integrity.	

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EVEN TERM END EXAMMAY -2019**EXAM SEAT NO.**

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LEVEL: FIFTH**PROGRAM: INFORMATION TECHNOLOGY****COURSE CODE: ITF506****COURSE NAME: CLOUD COMPUTING****MAX. MARKS: 80****TIME: 3 HRS.****DATE: 17/05/2019****Instruction:-**

- 1) Answer to each section must be written in separate answer book.
- 2) Illustrate your answers with sketches where ever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables will be made available on request.
- 5) Assume and mention suitable additional data necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) **QN**>Question No, **SQL**>Sub-Question No, **R**> Remembering, **U**>Understanding, **A**>Application

QN	S. Q. N	Question Text (Section – I)	Cognition Level R/U/A	Code ITF 506	Marks
Q.1		Attempt any FOUR			(08)
	a)	Define cloud computing	R	1	
	b)	State advantages of software ^{as} or services.	R	1	
	c)	Explain compute cloud.	R	2	
	d)	State whether GMAIL is cloud application or not? Justify	A	2	
	e)	List different services provided by Amazon.	R	3	
	f)	List any two uses of Google APP Engine	R	3	
Q.2		Attempt any TWO			(16)
	a)	Explain database services in brief.	U	1	
	b)	Explain limitation in using in cloud computing.	U	2	
	c)	Explain IBM services	U	3	
Q.3		Attempt any TWO			(16)
	a)	Differential between SaaS, PaaS and HaaS	A	1	
	b)	a) Explain developing your own application. b) Explain geo – political concerns in cloud computing.	A	2	
	c)	Explain following services provided by Microsoft :- a) Net services b) SQL services	U	2	
Q.4		Section – II			Marks
		Attempt any FOUR			(08)
	a)	Explain data Leakage	U	4	
	b)	State and justify whether accelerated internet is better than public internet.	A	4	
	c)	Explain optimized internet overlay.	U	4	
	d)	Explain advantages of SaaS. Explain logging and forensics	U	5	
	e)	State need of Migration.	R	6	
	f)	Explain use the wave approach	U	6	

Q.5		Attempt any FOUR			(16)
	a)	List and explain different types of clients.	U	4	
	b)	Explain outages and theft.	U	4	
	c)	Explain cautions used in cloud computing.	U	4	
	d)	Explain Health Vault.	U	5	
	e)	Explain pros and cons of software plus services.	U	5	
	f)	List and explain most popular cloud application	U	6	
Q.6		Attempt any TWO			(16)
	a)	Explain company offerings.		5	
	b)	List and explain any one performance monitoring tool.		6	
	c)	Explain Skytap Solution.		6	

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EXAM SEAT NO.

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LEVEL: FIRST

PROGRAM: COMMON

COURSE CODE: CCF105/0107/R107/X104/CEE105 COURSE NAME: BASIC MATHEMATICS

MAX. MARKS: 80

TIME: 3 HRS.

DATE: 14/05/2019

Instruction:-

- 1) Answers must be written in the main answer book provided. (and supplements if required)
- 2) Illustrate your answers with sketches where ever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables will be made available on request.
- 5) Assume and mention suitable additional data necessary.
- 6) Use of Mobile is strictly prohibited.

7) QN>Question No, SQN>Sub-Question No, R> Remembering, U>Understanding, A>Application CO>Course outcome

QN	S Q N	Question Text	R U A	CO CCF10 5	Marks
Q.1		Attempt any FOUR			(08)
	a)	Expand $\begin{vmatrix} 1 & 3 & -1 \\ 2 & 0 & 5 \\ 6 & -2 & -7 \end{vmatrix}$	R / U	1	
	b)	Resolve into partial fractions: $\frac{x+1}{x^2 - 2x + 1}$	R / U	2	
	c)	Resolve into partial fractions: $\frac{1}{(x^2 + 2)(x^2 + 5)}$	R / U	2	
	d)	Expand $(3a-b)^4$ by using Binomial theorem.	R / U	4	
	e)	Find the values of 'a' and 'b' if $\begin{bmatrix} a-4b & 5 \\ 6 & -a+b \end{bmatrix} = \begin{bmatrix} 11 & 5 \\ 6 & -5 \end{bmatrix}$	A	3	
	f)	If $A = \begin{bmatrix} 3 & -1 \\ 2 & 4 \end{bmatrix}$, $B = \begin{bmatrix} 1 & 2 \\ -3 & 0 \end{bmatrix}$ find matrix x such that $2x + 3A - 4B = I$	A	3	
Q.2		Attempt any FOUR			(16)
	a)	Show that the following equation are consistent $4x - 3y + 1 = 0$, $7x - 8y + 10 = 0$, $x + y - 5 = 0$	U	1	
	b)	Resolve into partial fractions: $\frac{x^2}{(x+1)(x+2)(x+3)}$	A / U	2	
	c)	Resolve into partial fractions: $\frac{3x^2 + 17x + 14}{x^3 - 8}$	A / U	2	
	d)	Expand $\left(x^2 - \frac{2}{y^3}\right)^6$ by using Binomial theorem.	A	4	
	e)	Express the following matrix as the sum of symmetric and skew symmetric matrices. $A = \begin{bmatrix} -1 & 7 & 1 \\ 2 & 3 & 4 \\ 5 & 0 & 5 \end{bmatrix}$	U	3	
	f)	Find x, y, z if $\left\{ \begin{bmatrix} 1 & 0 \\ 5 & 0 & 1 \\ 1 & 1 \end{bmatrix} - 3 \begin{bmatrix} 1 & 2 \\ -2 & 3 \\ 3 & 1 \end{bmatrix} \right\} \begin{bmatrix} x \\ y \\ z \end{bmatrix} = \begin{bmatrix} x \\ y \\ z \end{bmatrix}$	A / U	3	
P.T.O					

Q.3	Attempt any FOUR			(16)
a)	Solve by Cramer's Rule $\frac{2}{x-1} + \frac{3}{y-2} = 5, \frac{4}{x-1} - \frac{1}{y-2} = 3$	A	1	
b)	Resolve into partial fractions : $\frac{x^4 - x^5 + 1}{x^3(1-x)}$	A	2	
c)	By using Binomial theorem expand $\left(\frac{4}{3x} + \frac{y^2}{2}\right)^6$	A	4	
d)	If $A = \begin{pmatrix} 1 & -2 \\ -3 & 1 \end{pmatrix}$, $B = \begin{pmatrix} 4 & 2 & -5 \\ 1 & 0 & 3 \end{pmatrix}$ and $C = \begin{bmatrix} 6 & -7 & 0 \\ -1 & 2 & 5 \\ 1 & 0 & 3 \end{bmatrix}$ verify that $A(BC) = (AB)C$	U	3	
e)	If $A = \begin{bmatrix} -1 & -2 & -2 \\ 2 & 1 & -2 \\ 2 & -2 & 1 \end{bmatrix}$ show that $adj A = 3A^T$	U	3	
f)	Solve by matrix method $x + y + z = 3$ $x + 2y + 3z = 4$ $x + 4y + 9z = 6$	A	3	
Q.4	Attempt any FOUR			(08)
a)	Prove that $\cos^2 \theta - \cos^2 \theta \cos^2 \theta = 1$	U	5	
b)	Without using calculator, find the value of $\sec(3660^\circ)$	A	5	
c)	Prove that $\cos 2\theta = 1 - 2\sin^2 \theta$	U	5	
d)	Without using calculator find $\sin(15^\circ)$	A	5	
e)	If $2\sin 40^\circ \cos 10^\circ = \sin A + \sin B$ find A and B	U	5	
f)	Find principal value of $\cos\left[\frac{\pi}{2} - \sin^{-1}\left(\frac{1}{2}\right)\right]$	U	5	
Q.5	Attempt any FOUR			(16)
a)	Prove that $\frac{1 + 2\sin^2 \theta}{1 + 3\tan^2 \theta} = \cos^2 \theta$	U	5	
b)	Without using calculator, find the value of $\frac{\sec^2(135^\circ)}{\cos(-240^\circ) - 2\sin(930^\circ)}$	U	5	
c)	If $\tan(x+y) = \frac{3}{4}$, and $\tan(x-y) = \frac{8}{15}$ then show that $\tan 2x = \frac{77}{36}$	A	5	
d)	Prove that $\frac{1 - \tan 2\theta \tan \theta}{1 + \tan 2\theta \tan \theta} = \frac{\cos 3\theta}{\cos \theta}$	A	5	
e)	Prove that $\cos 10^\circ \cos 50^\circ \cos 70^\circ = \frac{\sqrt{3}}{8}$	A	5	
f)	Prove that $\cos^{-1}\left(\frac{4}{5}\right) + \tan^{-1}\left(\frac{3}{5}\right) = \tan^{-1}\left(\frac{27}{11}\right)$	A	5	
Q.6	Attempt any FOUR			(16)
a)	Without using calculator find the value of $\sin 150^\circ - \tan 315^\circ + \cos 300^\circ + \sec 3660^\circ$	U	5	
b)	If A and B are obtuse angle such that $\sin A = \frac{5}{13}$, $\cos B = \frac{-4}{5}$ find $\tan(A+B)$	U	5	
c)	prove that $\frac{\cos 3A - \cos 7A}{\sin 9A + \sin A} = \cos 2A \tan 4A - \sin 2A$	A	5	
d)	Prove that $\cos C + \cos D = 2\cos\left(\frac{C+D}{2}\right)\cos\left(\frac{C-D}{2}\right)$	A	5	
e)	Prove that $\cos^{-1}\left(\frac{4}{5}\right) - \sin^{-1}\left(\frac{5}{13}\right) = \cos^{-1}\left(\frac{63}{65}\right)$	A	5	
f)	Prove that $2\tan^{-1}\left(\frac{1}{3}\right) + \tan^{-1}\left(\frac{4}{3}\right) = \frac{\pi}{2}$	A	5	

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EVEN TERM END EXAMMAY -2019
EXAM SEAT NO.

LEVEL: **THIRD** PROGRAM: **INFORMATION TECHNOLOGY**
COURSE CODE: **ITF303 / ITE303** COURSE NAME: **DATA COMMUNICATION**
MAX. MARKS: **80** TIME: **3 HRS.** DATE: **17/05/2019**

Instruction:-

- 1) Answers must be written in the main answer book provided. (and supplements if required)
- 2) Illustrate your answers with sketches where ever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables will be made available on request.
- 5) Assume and mention suitable additional data necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN>Question No, SQN>Sub-Question No, R> Remembering, U>Understanding, A>Application

QN	S. Q. N	Question Text	Cognition Level R/U/A	Co Code ITF 303	Marks
Q.1		Attempt any FOUR			(08)
	a)	Define data communication.	R	1	
	b)	State meaning of analog & digital data.	R	2	
	c)	Enlist line coding schemes.	R	3	
	d)	An analog signal carries 4 bits per signal element. If 1000 signal elements are per second, find the bit rate.	A	2	
	e)	Define term phase.	R	2	
	f)	State types of data flow.	R	1	
Q.2		Attempt any FOUR			(16)
	a)	With neat diagram illustrate data communication system.	U	1	
	b)	Solve the following i) A periodic signal has a bandwidth of 20 Hz. The highest frequency in 60Hz. What is the lower frequency? ii) A page is an average of 24 lines. We need to download a text document of 100 pages per minute. What is required bit rate of the channel?	A	2	
	c)	With the help of diagram explain Amplitude shift keying.	U	3	
	d)	Choose any one simplex, half duplex or full duplex communication for given situations. a) A movie on demand service by cable service provider. b) A telephonic interview of a candidate. c) A weather report broadcasting portal. d) Chatting application in online tutorial.	A	1	
	e)	Explain different aspect of digital to analog conversion.	U	3	
	f)	Explain wavelength and bandwidth of an analog signal.	U	2	
Q.3		Attempt any Two			(16)
	a)	Explain transmission impairments with neat diagram.	U	2	
	b)	How analog to analog conversion of signal is done? Explain with AM and PM.	U	3	
	c)	With each layer's functionality illustrate OSI model.	U	1	P.T.O.

Q.4	Attempt any FOUR			(08)
a)	What are the aspects of digital to analog conversion?	R	4	
b)	State use of PCM.	R	4	
c)	Enlist types of errors.	R	5	
d)	How would you achieve error control? Enlist methods.	A	5	
e)	State protocol for noisy channel.	A	6	
f)	Write the use of simplest protocol.	A	6	
Q.5	Attempt any FOUR			(16)
a)	Explain working of wavelength division multiplexing	R	4	
b)	Describe Hamming Distance with example.	R	5	
c)	How phase shift keying works? Explain.	R	4	
d)	Write a note on hamming codes.	U	5	
e)	Describe piggy backing.	U	6	
f)	Explain selective Repeat Automatic Repeat Request.	U	6	
Q.6	Attempt any FOUR			(16)
a)	Explain Frequency division multiplexing.	U	4	
b)	Compare idea of amplitude shift keying with frequency shift keying.	U	4	
c)	Explain how you would apply cyclic codes give example.	A	5	
d)	Calculate checksum using one's complement. (Assume data)	A	5	
e)	Explain simple parity check codes.	U	5	
f)	Explain stop and wait protocol using example.	U	6	

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EVEN TERM END EXAM MAY -2019

EXAM SEAT NO.

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LEVEL: FIRST

PROGRAM: COMMON

COURSE CODE: CCF110/X111/CCE110

COURSE NAME: APPLIED MECHANICS

MAX. MARKS: 80

TIME: 3 HRS.

DATE: 20/05/2019

Instruction:-

- 1) Answers must be written in the main answer book provided. (and supplements if required)
- 2) Illustrate your answers with sketches where ever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables will be made available on request.
- 5) Assume and mention suitable additional data necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN>Question No, SQN>Sub-Question No, R> Remembering, U>Understanding, A>Application CO>Course outcome

QN	S Q N	Question Text	R U A	CO CCF 110	Marks
Q.1		Attempt any FOUR			(08)
	a)	Different between particle & body. (any two)	U	1	
	b)	State principle of transmissibility.	R	1	
	c)	Give field examples of i) Concurrent force system. ii) Parallel force system.	R	1	
	d)	Define equilibrant & state its effect on body.	R	2	
	e)	Define i) Angle of friction ii) Angle of Repose.	R	2	
	f)	State laws of friction. (any two)	R	2	
Q.2		Attempt any FOUR			(16)
	a)	Determine the components of the force 500KN at 20° & 30° at either side of it.	A	1	
	b)	Two forces acts at an angle 120° , The bigger force is 50 N and resultant of both is perpendicular to smaller force. Find smaller force.	A	1	
	c)	Determine the magnitude & direction of resultant force of forces away from point 8 N, 10 N, 20 N and 12 N making an angle 30° , 120° , 200° & 310° with the x-axis measured in clockwise direction respectively. (solve by Analytical method)	A	1	
	d)	Three forces of 20 N, 40 N, & 60 N along the sides of equilateral triangle of side 30 cm respectively in order. Calculate the magnitude & position of resultant of force system from apex point.	A	1	
	e)	A light string ABCDE whose extremity 'A' is fixed, has 'W ₁ ' and 'W ₂ ' attached at 'B' & 'C'. It passes frictionless pulley at 'D' carrying a weight of 200 N at free end 'E'. If in equilibrium position BC is horizontal & AB & CD makes an angle 150° & 100° respectively with BC, Determine magnitudes 'W ₁ ' & 'W ₂ '	A	2	
	f)	Solve Q.No.2(C) by Graphical method.	U	3	
Q.3		Attempt any FOUR			(16)
	a)	Simply supported beam of 5m span carries UDL of 12 KN/m over half span from left side support & vertically downward point load of 27KN acting 1 m from right side support. Determine support reaction by analytical method.	A	2	
	b)	Solve Q. No 3(a) by graphical method.	U	3	
	c)	State advantages & limitations of graphical method over analytical method.	R	3	
	d)	A heavy stone of mass 400 kg is on hill of 45° inclined with horizontal. If coefficient of friction between stone & hill is 0.50, is stone stable?	A	2	

	e)	A block weighing 40KN resting on rough horizontal plane can be moved by a force of 22 KN applied at an angle 35° with the horizontal. Determine coefficient of friction.	A	2	
	f)	A ladder of 3 m weighing 100 N is kept 30° inclined with smooth horizontal ground and rough wall. If the man weighing 700 N is standing on mid of ladder, what is the force 'P', horizontal to ground contact surface, required to keep the ladder in rest. Take μ for ladder & wall is 0.3.	A	2	
Q.4		Attempt any FOUR			(08)
	a)	Define Kinematics.	R	5	
	b)	Define momentum.	R	5	
	c)	Define angular acceleration.	R	5	
	d)	State law of conservation of energy.	R	5	
	e)	Define work & power.	R	5	
	f)	Define velocity ratio.	R	6	
Q.5		Attempt any FOUR			(16)
	a)	Determine the co-ordinates of the centroid of the shaded area with respect to the axes shown in figure. no.1 in which a quarter circle of radius 80 mm is cut-off from a rectangle of size 120 mm x 80 mm.	A	4	
	b)	Determine the centroid of an unequal angle from the reference axes X & Y as shown in figure No.2.	A	4	
	c)	A ball is dropped from the top of a tower 30 m high. At the same instant a second ball is thrown upward from the ground with an initial velocity 15 m/sec when & where they cross?	A	5	
	d)	Power supply was cut off to a power driven wheel when it was rotating at a speed of 900 rpm. It was observed to come to rest after making 360 revolutions. Determine its angular retardation & time it took to come to rest after power supply cut-off.	A	5	
	e)	A stone is released from a height 30 m. Calculate velocity of stone when it strikes to the ground using law of conservation of energy.	A	5	
	f)	In a lifting machine an effort of 500 N is to be raise a load 10,000 N, velocity ratio of machine is 25. Determine efficiency of machine, ideal effort, effort lost in friction & load lost in friction,	A	6	
Q.6		Attempt any FOUR			(16)
	a)	A solid right circular cone of height 40 cm & diameter 20 cm is placed on a cylinder of diameter 20 cm & height 30 cm. Locate the position of center of gravity from the base of the cone.	A	4	
	b)	A railway wagon is moving at 108 kmph. The driver observes the red signal & applies brakes to stop the train & it covers a distance of 300 meter before coming to rest. Calculate the retardation produced & time taken to rest.	A	5	
	c)	A wheel starts from the rest & accelerates at 12 rad/sec^2 until it reaches a speed of 200 rpm. With this speed it rotates for 2 minutes & then retards uniformly for 150 seconds & stops. Determine total number of revolutions made, Acceleration time & angular retardation.	A	5	
	d)	Determine the power required to raise a lift containing 15 persons to a height of 150 m in 10 minutes. The average weight of each person may be taken as 650 N. The weight of lift is 2.5 KN.	A	5	
	e)	In a machine an effort of 15 N can lift a load of 300 N & an effort of 25 N can lift a load of 500N. Determine the law of machine & also effort required to lift a load of 1000N.	A	6	
	f)	In a lifting machine law of machine is $P = (0.025 W + 0.05) \text{ KN}$ & velocity ratio is 44.44. Calculate efficiency of machine at load 20 KN. and state machine is reversible or not at load 20 KN. Also determine maximum M.A & maximum efficiency of machine.	A	6	

Q.5) a) figure No.1

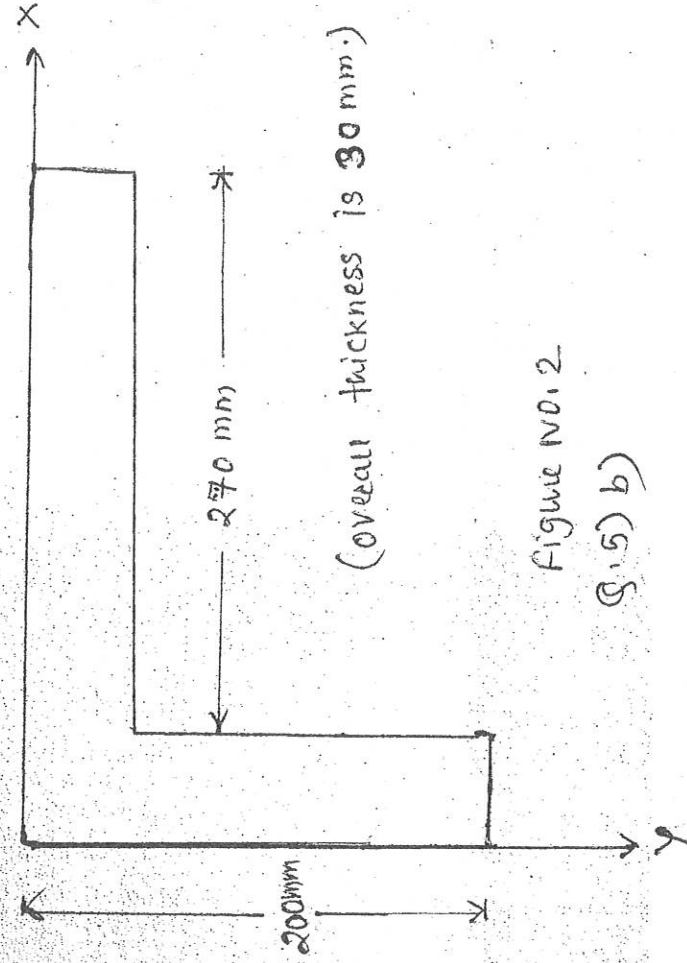
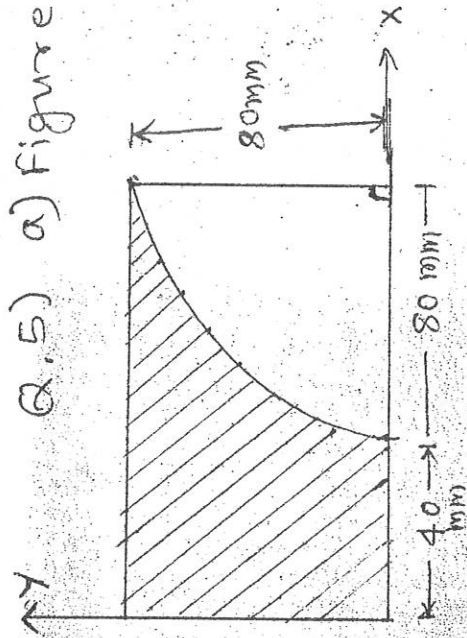


figure NO.2

Q.5) b)

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EVEN TERM END EXAM MAY-2019**EXAM SEAT NO.**

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LEVEL :- THIRD PROGRAM : INFORMATION TECHNOLOGY**COURSE CODE :- ITF302/IT202/ITE302****COURSE NAME :- DIGITAL ELECTRONICS****MAX. MARKS : 80 TIME : 3 HRS. DATE :- 15/05 / 2019****Instruction :-**

- 1) Answers must be written in the main answer book provided.(and supplements if required)
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S	Question Text	R/ U/ A	Co ITF 302	Ma rks
Q.1		Attempt any FOUR :			08
	a)	Convert i) (2486) ₁₀ to hexadecimal. ii) (7204) ₈ to decimal.	U	1	
	b)	Perform (1010.11) ₂ + (1101.10) ₂ .	A	1	
	c)	Find 2's complement of (101101) ₂	A	1	
	d)	State any two distributive laws.	R	2	
	e)	Define encoder and decoder.	R	3	
	f)	Draw the logical diagram of half adder.	R	3	
Q.2		Attempt any FOUR :			16
	a)	Subtract (47) ₁₀ – (62) ₁₀ using 9's complement method.	A	1	
	b)	Convert the following i) (107) ₁₀ = (X) ₂ . ii) (0.95 AC) ₁₆ = (X) ₁₀ .	U	1	
	c)	State and prove Demorgan's First theorem.	U	2	
	d)	Explain 1:4 demultiplexer using logic diagram and truth table.	U	3	
	e)	Draw neat diagram of full subtractor using half subtractor. Also write the truth table of full subtractor.	U	3	
	f)	Explain 4 bit binary adder using IC 7483.	A	3	
Q.3		Attempt any FOUR :			16
	a)	Perform binary subtraction using 2's complement (11001101) ₂ - (10011101) ₂ .	A	1	
	b)	Convert the following i) (8C9.D) ₁₆ to (X) ₈ . ii) (00100010.00111111) ₂ = (X) ₁₆ .	U	1	
	c)	Simplify using K-map. F(A,B,C,D) = $\sum m(1,5,6,12,13,14) + d(2,4)$	A	2	
	d)	Write the logical equation, truth table and draw the symbol of AND and NOR gate.	U	2	
	e)	Draw the diagram of 8:1 multiplexer using gates.	U	3	
	f)	Draw and explain the block diagram of decoder.	U	3	

P.T.O.

Q.4	Attempt any FOUR :			08
	a)	Draw symbol and truth table of negative edge triggered T flip flop.	R	4
	b)	Draw the block diagram of PIPO shift register.	R	4
	c)	Compare RAM and ROM on two points.	R	5
	d)	Define memory. give classification of memory.	R	5
	e)	Define the following specification of ADC i) Resolution ii) Conversion time.	R	6
	f)	Write two advantages of DAC.	R	6
Q.5	Attempt any FOUR :			16
	a)	What is race around condition in JK flip flop and now it can be eliminated?	U	4
	b)	Compare combinational and sequential logic circuits (any two points)	U	4
	c)	Draw 4 bit SISO Shift register using D-flip flop and also draw its timing diagram.	U	4
	d)	Draw and explain working of static RAM cell.	U	5
	e)	State four specifications of DAC.	R	6
	f)	Compare R-2R and weighted resistor DAC on four points.	U	6
Q.6	Attempt any FOUR :			16
	a)	Explain working of 2 bit asynchronous counter with the help of neat diagram, truth table and timing diagram.	A	4
	b)	Design MOD-5 ripple counter and draw its logic diagram with reset logic.	A	4
	c)	Compare SRAM and DRAM on four points.	U	5
	d)	Explain PROM and EPROM.	A	5
	e)	Draw and explain dual slope ADC.	U	6
	f)	For a 4 bit binary weighted resistor type DAC, if '0' = 0V and '1' = +10V. find full scale output voltage	A	6

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EVEN TERM END EXAM MAY-2019

EXAM SEAT NO.

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LEVEL :- **THIRD**

PROGRAM : **INFORMATION TECHNOLOGY**

COURSE CODE :- **ITF308**

COURSE NAME :- **COMPUTER ARCHITECTURE AND MAINTENANCE**

MAX. MARKS : **80** TIME : **3 HRS.** DATE :- **16/05/2019**

Instruction :-

- 1) Answers must be written in the main answer book provided.(and supplements if required)
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	Question Text	R/ U/ A	Co ITF 308	Ma rks
Q.1		Attempt any FOUR :			08
	a)	State any two input and output devices.	R	1	
	b)	Define static memory.	R	3	
	c)	Enlist types of system board.	R	2	
	d)	Define terms i) Hard boot ii) soft boot	R	1	
	e)	State the attributes used to rate CPU	R	2	
	f)	Differentiate between SRAM & DRAM (any 2 points)	U	3	
Q.2		Attempt any FOUR :			16
	a)	Define and explain system clock.	U	2	
	b)	Describe the process of upgrading memory and installing memory.	U	3	
	c)	Explain functions of operating system.	U	1	
	d)	Describe following terms .i) Memory Address ii) DMA Channel	U	1	
	e)	Explain components mounted on system board.	U	2	
	f)	Describe the need of virtual memory.	U	3	
Q.3		Attempt any FOUR :			16
	a)	Differentiate between SIMM and DIMM technologies.	U	3	
	b)	Explain the term interface card.	U	1	
	c)	Describe key steps in POST process.	A	1	
	d)	List and explain attributes to rate CPU.	U	2	
	e)	Define following term i) Temporary storage device. ii) Secondary storage device iii) Firmware iv) Software.	R	1	
	f)	Describe following entities. i) 8-bit ISA bus ii) IRQ (Interrupt Request Number)	U	1	

P.T.O.

Q.4	Attempt any FOUR :			08
	a) Define following terms i) Resistance ii) Power	R	6	
	b) State uses of following DOS commands i) MK DIR ii) CH DIR iii) RM DIR iv) TREE	R	4	
	c) Define parallel port.	R	6	
	d) Define UPS and write its uses.	R	6	
	e) List out different troubleshooting tools.	R	5	
	f) Define disk caching.	U	4	
Q.5	Attempt any FOUR :			16
	a) Differentiate between SCSI and EIDE	U	4	
	b) Explain serial and parallel ports in detail.	U	5	
	c) Draw and explain any one type of monitor.	U	6	
	d) Explain how to provide voltage supply to the system board.	U	6	
	e) Describe hard drive partitions.	U	4	
	f) Explain how to troubleshoot operating system and hard drive.	U	5	
Q.6	Attempt any FOUR :			16
	a) Explain ESD and EMI.	U	6	
	b) Explain functioning of USB port.	U	6	
	c) Explain how to troubleshoot printer.	U	5	
	d) Write steps for how to format hard drive.	A	4	
	e) Describe FAT and Root directory.	U	4	
	f) Write the problems occurrences in keyboard and monitor.	U	5	

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EVEN TERM END EXAM MAY -2019
EXAM SEAT NO.

LEVEL: First

COURSE CODE: CCF 102/CCE 102

MAX. MARKS: 80

PROGRAM: EE/IE/TT/ET

COURSE NAME: Engineering Physics

TIME: 3 HRS.

DATE: 09/05/2019

Instruction:-

- 1) Answers must be written in the main answer book provided. (and supplements if required)
- 2) Illustrate your answers with sketches where ever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables will be made available on request.
- 5) Assume and mention suitable additional data necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN>Question No, SQN>Sub-Question No, R> Remembering, U>Understanding, A>Application

QN	S. Q. N	Question Text	Cognition Level	Co Code CCF	Marks
Q.1		Attempt any FOUR	R/U/A	102	
	a)	Define specific mass and give its SI unit.	R	01	(08)
	b)	Shape of a liquid drop is spherical. Explain.	U	01	
	c)	Define coefficient of viscosity & give its SI unit.	R	01	
	d)	State any two applications of nanotechnology in the field of automobile.	R	03	
	c)	Define surface tension. Give its SI unit.	R	01	
	f)	Define 1) Nanotechnology 2) Nanoparticle	R	03	
Q.2		Attempt any FOUR			
	a)	Explain the behavior of wire under continuously increasing load.	U	01	(16)
	b)	Derive an expression for coefficient of viscosity using Stoke's method.	A	01	
	c)	Define capillary action. Give any three examples of capillary action.	R	01	
	d)	State any four points of distinction between longitudinal and transverse waves.	U	02	
	e)	Mention any two applications each of nanotechnology in the field of textile and environment.	R	03	
	f)	A wire of diameter 2mm and length 2.5m extends by 1.5mm when a force of 15N is applied to it. Find the Young's modulus of the wire.	A	01	
Q.3		Attempt any FOUR			
	a)	Explain the molecular theory of surface tension.	U	01	(16)
	b)	Define 1) Amplitude 2) Period 3) Frequency 4) Wavelength of a wave.	R	02	
	c)	Derive expression $h_1 r_1 = h_2 r_2$ for capillary action.	A	01	
	d)	Define stress and explain the three types of stress.	R	01	
	e)	State any four applications of viscosity.	R	01	
	f)	Define resonance. Give any three examples of resonance.	R	02	

P.T.O.

Q.4	Attempt any FOUR			(08)
	a) Define refraction of light.	R	04	
	b) State Ohm's law for electricity.	R	04	
	c) Define photoelectric effect.	R	05	
	d) State two properties of laser.	R	05	
	e) State the principle of production of X-rays.	R	05	
	f) Define critical angle.	R	06	
Q.5	Attempt any FOUR			(16)
	a) Derive prism formula to calculate refractive index of given prism.	A	04	
	b) A 6 m long copper wire has diameter 0.45 mm. If its resistance is $18\ \Omega$, calculate its resistivity.	A	04	
	c) State any four characteristics of photoelectric effect.	R	05	
	d) Distinguish between spontaneous and stimulated emission. (any four points.)	U	05	
	e) State any four applications of X-rays.	R	05	
	f) State any four applications of optical fibre.	R	06	
Q.6	Attempt any FOUR			(16)
	a) How long will light take in travelling a distance 500 m in water ? R.I. of water is $\frac{4}{3}$ and velocity of light in vacuum is 3×10^8 m/s.	A	04	
	b) Derive equation of equivalent resistance for parallel combination of three resistors.	A	04	
	c) Explain construction and working of photoelectric cell.	U	05	
	d) Describe the term population inversion.	U	05	
	e) Explain the term total internal reflection.	U	06	
	f) Obtain balancing condition for Wheatstone's network.	A	04	

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EVEN TERM ENDE EXAM MAY-2019**EXAM SEAT NO.**

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LEVEL :- FIRST**PROGRAM : CE/ME/SM/MT****COURSE CODE :- CCF103/X103/X109/CCE103****COURSE NAME :- CHEMISTRY OF ENGINEERING MATERIALS /
ENGINEERING CHEMISTRY****MAX. MARKS : 80 TIME : 3 HRS. DATE :- 09/05 / 2019****Instruction :-**

- 1) Answers must be written in the main answer book provided.(and supplements if required)
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	Question Text	R/ U/ A	Co CCF 103	Ma rks
Q.1		Attempt any FOUR :			08
	a)	Write electronic configuration of 20Ca^{40} , 7N^{14}	U	1	
	b)	State Aufbau principle.	R	1	
	c)	Define electroplating.	R	2	
	d)	State Faraday's first law of electrolysis.	R	2	
	e)	What is corrosion?	R	3	
	f)	Mention factors affecting Wet corrosion.	R	3	
Q.2		Attempt any FOUR :			16
	a)	Explain Bohr's theory of atom.	U	1	
	b)	On the basis of electrovalency explain the formation of NaCl molecule.	A	1	
	c)	Distinguish between atom and ion.	U	2	
	d)	What is degree of ionization? Explain any three factors affecting on it	U	2	
	e)	With neat labelled diagram explain the process of galvanizing.	U	2	
	f)	Name and explain the process used to protect the large sized and irregular shaped articles.	U	3	
Q.3		Attempt any FOUR :			16
	a)	Distinguish between i) Soft water and Hard water ii) Temporary Hardness and permanent hardness.	U	4	
	b)	Write any four reactions of hard water with soap.	A	4	
	c)	If hard water is used for drinking and cooking purpose then write its disadvantages.	U	4	
	d)	What is meant by scale formation in boilers? Explain its causes.	U	4	
	e)	How will you sterilize impure water by using bleaching powder? Explain with the help of chemical reactions.	U	4	
	f)	With the help of chemical reactions explain the regeneration of both the types of resins.	A	4	

P.T.O.

Q.4	Attempt any FOUR :			08
	a)	Distinguish between mineral and ore (any two points)	U	6
	b)	Define alloy and Gangue.	R	6
	c)	Select lubricants for sewing machine and state its properties.	A	7
	d)	State functions of Drying oil and pigment. (Each two functions)	R	7
	e)	Define Adhesive and composite materials.	R	7
	f)	Write preparation of Glass Wool.	R	7
Q.5	Attempt any FOUR :			16
	a)	With example state four purposes of making alloy.	R	6
	b)	With diagram explain extreme pressure lubrication.	U	7
	c)	Distinguish between paint and varnish (any four points)	U	7
	d)	State four engineering properties and their related applications of plastic	U	7
	e)	Explain with chemical reactions vulcanization of rubber.	U	7
	f)	Classify composite materials and state its applications.	U	7
Q.6	Attempt any FOUR :			16
	a)	Distinguish between calcination and roasting (any four points)	U	6
	b)	With diagram explain Electromagnetic separation method.	U	6
	c)	Define lubricant. Write functions of lubricants.	U	7
	d)	Write characteristics of oil paint. Write functions of plasticizer and Thinner (two each)	R	7
	e)	With example explain condensation polymerization.	U	7
	f)	Define i) Tack ii) Elasticity iii) Rebound iv) Abrasion resistance.	R	5

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EVEN TERM END EXAM MAY -2019

EXAM SEAT NO.

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LEVEL: FIRST

PROGRAM: COMMON

COURSE CODE: CCF106/0108/X110/CCE106/R108 COURSE NAME: ENGINEERING MATHEMATICS

MAX. MARKS: 80

TIME: 3 HRS.

DATE: 13/05/2019

Instruction:-

- 1) Answers must be written in the main answer book provided. (and supplements if required)
- 2) Illustrate your answers with sketches where ever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables will be made available on request.
- 5) Assume and mention suitable additional data necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN>Question No, SQN>Sub-Question No, R> Remembering, U>Understanding, A>Application CO>Course outcome

QN	S	Question Text	R U A	CO CCF106	Marks
Q.1		Attempt any FOUR			(08)
	a)	Find centroid of a triangle whose vertices are (-1, 2), (3, 2), (4, 5)	R	1	
	b)	Find the distance between parallel lines $3x+2y-6=0$ and $3x+2y-12=0$	U	1	
	c)	Find equation of line passing through (-4, 6) and (8, -3)	R	1	
	d)	Find center and radius of circle $2x^2+2y^2+5x-6y+4=0$	U	1	
	e)	Find equation of circle having center (-1, -2) and radius $\sqrt{15}$	R	1	
	f)	Show that the root of equation $x^3 - 2x - 5 = 0$ lies between 2 and 3	R	2	
Q.2		Attempt any FOUR			(16)
	a)	Find area of quadrilateral whose vertices are (4, 1), (-3, 0), (-2, 3) and (3, 4)	A	1	
	b)	Find the equation of straight line passing through (4, 5) and perpendicular to the line $7x - 5y = 420$	U / A	1	
	c)	Find the equation of circle whose center is at point of intersection of lines $2x+3y=13$, $5x-y=7$ and passing through the point (1, -1).	A	1	
	d)	Using Bisection method, find the approximate root of $x^2 + x - 3 = 0$ (Three iteration only)	A	2	
	e)	Using Regula falsi method find real root of the equation $xe^x = 3$ (Two iteration)	A	2	
	f)	Using Bisection method find value of $\sqrt{10}$ by performing three iteration	A	2	
Q.3		Attempt any FOUR			(16)
	a)	Find the angle between the lines $y = 5x + 6$, $y = x$	A	1	
	b)	Find the equation of circle whose center is at (-1, 3) and which touches the line $2x+y=4$	U / A	1	
	c)	Solve the following equation by Jacobi's method $20x + y - 2z = 17$, $3x + 20y - z = -18$, $2x - 3y + 20z = 25$	A	2	
	d)	Solve the equation by using Gauss-seidal method, $4x + y + 2z = 12$, $-x + 11y + 4z = 33$, $2x - 3y + 8z = 20$	A	2	

P.T.O

e)	Solve the following equations by Gauss –seidal method $5x - y = 9$, $x - 5y + z = -4$, $y - 5z = 6$	A	2	
f)	Solve the following equations by Jacobis method $10x + y + z = 12$, $x + 10y + z = 12$, $x + y + 10z = 12$	A	2	
Q.4	Attempt any FOUR			(08)
a)	If $f(x) = \frac{x^2 + 2x + 5}{x^3 + 8}$ find $f(1) + f(-1)$	U	3	
b)	Define odd and even functions	R	3	
c)	Evaluate $\lim_{x \rightarrow 1} \frac{x^3 - 1}{x - 1}$	U / A	3	
d)	Evaluate $\lim_{x \rightarrow 0} \frac{3 \sin x + 4x}{7x - 2 \tan x}$	U / A	3	
e)	State the Quotient Rule of the Derivative.	U	4	
f)	Find the slope of the tangent to the circle $x^2 + y^2 = 25$ at $(-3, 4)$	A	4	
Q.5	Attempt any FOUR			(16)
a)	If $f(x) = \frac{1}{1-x}$ then show that $f(f(f(x))) = x$	U	3	
b)	Evaluate $\lim_{x \rightarrow \infty} \left(\sqrt{x^2 + 3x + 2} - \sqrt{x^2 + x + 1} \right)$	A	3	
c)	If $x\sqrt{1+y} + y\sqrt{1+x} = 0$ then show that $\frac{dy}{dx} = -\frac{1}{(1+x)^2}$	U	4	
d)	Find $\frac{dy}{dx}$ if $y = \tan^{-1} \sqrt{\frac{1-x}{1+x}}$	A	4	
e)	Find $\frac{dy}{dx}$ if $y = (x)^{\sin x} + (\sin x)^x$	A	4	
f)	Find the equations of the tangents to the curve $y = x^2 - 2x - 3$ where it meets the x-axis	A	4	
Q.6	Attempt any FOUR			(16)
a)	Evaluate $\lim_{x \rightarrow \frac{\pi}{4}} \frac{\sin x - \cos x}{x - \frac{\pi}{4}}$	A	3	
b)	Find $\frac{dy}{dx}$ if $\sin y = \log(x + y)$	A	4	
c)	If $y = \cos^{-1} \left(\frac{\cos x + \sqrt{3} \sin x}{2} \right)$ show that $\frac{dy}{dx} = -1$	U	4	
d)	If $x = 3 \cos \theta - 2 \cos^3 \theta$ and $y = 3 \sin \theta - 2 \sin^3 \theta$ find $\frac{dy}{dx}$ at $\theta = \frac{\pi}{4}$	A	4	
e)	If $y = (\sin^{-1} x)^2$ prove that $(1-x^2) \frac{d^2 y}{dx^2} - x \frac{dy}{dx} - 2 = 0$	U	4	
f)	A metal wire 36 cm long is bent to form a rectangle. Find its dimensions when its area is maximum.	A	4	

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EVEN TERM END EXAM MAY -2019

EXAM SEAT NO.

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LEVEL: **THIRD**

PROGRAM: EE/E&TC/IE/IT

COURSE CODE:

EEF301/EIF301/ITF301/EE201/EEE305/0201/EJ201/ETET301/IX201/IEE301/IT201/IF201/ITE301/6201

COURSE NAME: **APPLIED MATHEMATICS**

MAX. MARKS: **80**

TIME: **3 HRS.**

DATE: **10/05/2019**

Instruction:-

- 1) Answers must be written in the main answer book provided. (and supplements if required)
- 2) Illustrate your answers with sketches where ever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables will be made available on request.
- 5) Assume and mention suitable additional data necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN>Question No, SQN>Sub-Question No, R> Remembering, U>Understanding, A>Application CO>Course outcome

S QN	Q	Question Text	R U A	CO EEF301	Marks
Q.1		Attempt any FOUR			(08)
	a)	Evaluate $\int \frac{x+3}{x-2} dx$	U	1	
	b)	Find the area under the curve $y = \cos x$ & $x = 0$ & $x = \pi$	A	1	
	c)	Evaluate $\int_0^{\frac{1}{2}} \frac{dx}{\sqrt{1-x^2}}$	R	1	
	d)	Evaluate $\int \sqrt{1-\cos 2x} dx$	R	1	
	e)	Find the mean value of the function $y = 3e^{-x}$ over the range from $x = 0$ to $x = 1$	A	1	
	f)	Evaluate $\int \frac{3-5x^2+9x^4-10x^6}{x^6} dx$	R	1	
Q.2		Attempt any FOUR			(16)
	a)	Evaluate $\int \frac{x^5}{1+x^{12}} dx$	U	1	
	b)	Find the area of the ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ by integration method.	A	1	
	c)	Evaluate $\int \frac{1-\tan x}{1+\tan x} dx$	U	1	
	d)	Evaluate $\int_0^{\pi/2} \cos^2 x dx$	A	1	
	e)	Evaluate $\int \cot^{-1} x dx$	A	1	
	f)	Evaluate $\int_2^6 \frac{\sqrt{1-x} dx}{\sqrt{1-x} + \sqrt{x-7}}$	A	1	
Q.3		Attempt any FOUR			(16)
	a)	Evaluate $\int \frac{(x^2+1)dx}{x(2x-1)(1-x)}$	A	1	
	b)	Evaluate $\int_{-1}^1 \frac{x+x^2}{x^2+1} dx$	A	1	

P.T.O

	c)	Find the area enclosed between the parabola $y^2 = 4x$ and the line $2x - y = 4$	A	1	
	d)	Evaluate $\int \cos(\sqrt{x}) dx$	U	1	
	e)	If $i_1 = 10 \sin wt$ & $i_2 = 20 \cos wt$ Find $i_1 + i_2$ in the form $r \sin(wt + \alpha)$ & calculate the R.M.S value over the range from $t = 0$ to $t = \frac{\pi}{w}$	A	1	
	f)	Evaluate $\int \frac{dx}{(x+1)(x^2+4)}$	A	1	
Q.4		Attempt any FOUR			(08)
	a)	Define order and degree of a differential equation.	R	2	
	b)	Find order and degree of the following differential equation $\frac{y-x \frac{dy}{dx}}{\frac{dy}{dx}} = \left(\frac{dy}{dx} \right)^2$	R	2	
	c)	Define i) Conjugate of a complex number ii) Modulus of a complex number.	R	3	
	d)	Find real and imaginary part of $\frac{1+i}{1-i}$	R	3	
	e)	Find the value of $i^{30} + i^{40} + i^{60}$	R	3	
	f)	Separate into real and imaginary parts: $\cosh(x+iy)$	R	3	
Q.5		Attempt any FOUR			(16)
	a)	Show that $y^2 = ax^2$ is a solution of $x \left(\frac{dy}{dx} \right)^2 - 2y \frac{dy}{dx} + ax = 0$	U	2	
	b)	Find the equation of the curve whose slope of the tangent at any point (x, y) is $3x-4$ and which passes through the point $(3, 2)$	A	2	
	c)	Prove that $(1+i)^8 + (1-i)^8 = 32$, by using De-Moivre's theorem.	U	3	
	d)	Solve by using variable separable method $x - y \frac{dx}{dy} = a \left(x^2 + \frac{dx}{dy} \right)$	A	2	
	e)	Use De Moivre's theorem to find $\frac{(\cos 2\theta + i \sin 2\theta)^{3/2} (\cos \theta - i \sin \theta)^3}{(\cos 3\theta - i \sin 3\theta)^2 (\cos 5\theta - i \sin 5\theta)^{2/5}}$	A	3	
	f)	Solve $x(y-x) \frac{dy}{dx} = y(x+y)$	A	2	
Q.6		Attempt any FOUR			(16)
	a)	Show that $\frac{2x}{y^3} dx + \frac{y^2 - 3x^2}{y^4} dy = 0$ is exact differential equation and hence solve it.	U	2	
	b)	The particle starts from rest, its acceleration at any time is $(t+3)m/s^2$. Find the distance travelled in 4 seconds.	A	2	
	c)	Using Euler's formula, prove that $\cos A - \cos B = -2 \sin \left(\frac{A+B}{2} \right) \cdot \sin \left(\frac{A-B}{2} \right)$	U	3	
	d)	Solve $x \log x \frac{dy}{dx} + y = 2 \log x$	A	2	
	e)	Find modulus and amplitude of $\frac{(1+i)(2+i)}{3-i}$	A	3	
	f)	Find cube root of unity.	A	3	

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EVEN TERM END EXAM MAY-2019**EXAM SEAT NO.**

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LEVEL :- FOURTH**PROGRAM : INFORMATION TECHNOLOGY****COURSE CODE :- ITF402/IT302/ITE402****COURSE NAME SOFTWARE ENGINEERING****MAX. MARKS : 80 TIME : 3 HRS. DATE :- 13/05 / 2019****Instruction :-**

- 1) Answers of two sections must be written in separate section answer book provided.
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	Section- I	R/ U/ A	Co ITF 402	Mar ks
Q.1		Attempt any FOUR :			08
	a)	Define the term software engineering.	R	1	
	b)	List any four software applications.	R	1	
	c)	Write down problems of waterfall model.	U	1	
	d)	Draw build and fix model.	R	1	
	e)	Explain the term Entities with respect to ER diagram.	U	2	
	f)	Explain activities during s/w project planning.	U	3	
Q.2		Attempt any FOUR :			16
	a)	Explain role of management in development.	U	1	
	b)	Draw and explain iterative enhancement model with diagram.	U	1	
	c)	Explain the term FAST with respect to requirement elicitation.	U	2	
	d)	List and explain characteristics of a good SRS.	U	2	
	e)	Draw the diagram of risk management activities and explain in detail.	U	3	
	f)	Define the term LOC in size estimation and explain with example.	U	3	
Q.3		Attempt any FOUR :			16
	a)	Write any four characteristics of software and explain any two in detail.	U	1	
	b)	Enlist categories on which selection of suitable life cycle model is based. Explain any one.	U	1	
	c)	Draw a neat diagram of waterfall model and list problems of it.	U	2	
	d)	Explain following terms i) User and system requirements ii) Interface and system requirements.	U	2	
	e)	Write use of data dictionaries with respect to requirement analysis in detail.	U	2	
	f)	Enlist special features of function count. Explain any two.	U	3	

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Section- II					Mar ks
QN	S Q N		R/ U/ A	Co ITF 402	
Q.4		Attempt any FOUR :			08
	a)	Define software testing.	R	5	
	b)	Define ripple effect.	R	5	
	c)	Explain the term bug.	R	5	
	d)	Explain term test case.	R	5	
	e)	State importance of software design.	U	4	
	f)	State factors those affect selection of a programming language for software development.	U	4	
Q.5		Attempt any FOUR :			16
	a)	Compare between top-down and bottom –up design approach.	U	4	
	b)	With neat diagram explain software maintenance process.	R	5	
	c)	Explain problems occurred during software maintenance.	R	5	
	d)	Enlist difference between alpha and beta testing.	U	5	
	e)	List attributes those ensure software quality.	R	5	
	f)	Explain the terms i) Data coupling ii) Stamp coupling.	R	4	
Q.6		Attempt any TWO :			16
	a)	State and explain different levels of cohesion.	R	4	
	b)	Explain categories of maintenance.	R	5	
	c)	i) Explain unit testing with its benefits. ii) Explain white box testing.	R R	5 5	

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EVEN TERM ENDEXAM MAY-2019**EXAM SEAT NO.**

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LEVEL :- FIRST**COURSE CODE :-****CCF104/CCE104****PROGRAM : EE / IE / IT / E & TC****COURSE NAME****CHEMISTRY OF ENGINEERING MATERIALS /
ENGINEERING CHEMISTRY****MAX. MARKS : 80 TIME : 3 HRS. DATE :- 08/05 / 2019****Instruction :-**

- 1) Answers must be written in the main answer book provided.(and supplements if required)
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	Question Text	R/ U/ A	Co CCF 104	Ma rks
Q.1		Attempt any FOUR :			08
	a)	Explain fundamental particles of atom.	U	1	
	b)	Define i) Atomic number ii) Mass number.	R	1	
	c)	State Faraday's second law of electrolysis.	R	2	
	d)	Define i) Electro plating ii) Electrode.	R	2	
	e)	Define i) Atmospheric corrosion. ii) Electrochemical corrosion.	R	3	
	f)	Explain why Porous oxide film is called as non-protective film.	U	3	
Q.2		Attempt any FOUR :			16
	a)	i) State Pauli's exclusion principle.	R	1	
		i) Write electronic configuration of 20Ca^{40} , 12Mg^{24} .			
	b)	Differentiate between metallic conduction and electrolytic conduction.	U	2	
	c)	Explain Tinning method of electroplating with diagram.	U	3	
	d)	Explain disadvantages of hard water in i) Textile industry ii) Dyeing industry	U	4	
	e)	Write any four reactions of hard water with soap.	U	4	
	f)	Explain causes of scale formation in boilers.	U	4	
Q.3		Attempt any FOUR :			16
	a)	Explain Lewis and Langmuir's concept of stable electronic configuration.	U	1	
	b)	An electric current is passed through a solution of ZnSO_4 and CuSO_4 connected in series. If in a given time 0.716 gm of Zn is deposited, what would be the weight of Cu that would deposit in the same time? (At. Wt. of Cu= 63.5 and Zn = 65)	A	2	
	c)	Explain with diagram the method which is used to coat the metal in form of sheet.	U	3	
	d)	Explain the method for sterilization of water by using Chloroamine.	U	4	

P.T.O.

	e)	Define pH. Draw pH scale. Write impurities in water.	R	4
	f)	Differentiate between Hard water and Soft water. (any four points)	U	4
Q.4		Attempt any FOUR :		08
	a)	Draw a neat labelled diagram of gravity separation method.	U	5
	b)	Define i) E.M.F. ii) Discharge	R	5
	c)	Give important ores of copper with their molecular formula.	A	6
	d)	Distinguish between ferrous and non ferrous alloys (any 2 points)	U	6
	e)	Write two properties of graphite.	R	6
	f)	Classify the composite materials with example.	R	7
Q.5		Attempt any FOUR :		16
	a)	Give charging and discharging reactions of lead acid storage cell.	R	5
	b)	Draw a neat labelled diagram of dry cell. Explain its construction and working.	U	5
	c)	Name and explain method used for concentration of Sulphide ores.	A	6
	d)	State and explain purposes of making alloys (any four)	R	6
	e)	Write properties and applications of germanium as a semiconductor.	R	6
	f)	Distinguish between thermosoftening and thermosetting plastics.	U	7
Q.6		Attempt any FOUR :		16
	a)	Draw a neat labelled diagram and explain working and advantages of hydrogen-oxygen fuel cell.	R	5
	b)	Define i) Flux ii) Mineral iii) Ore iv) Gangue.	R	5
	c)	Distinguish between calcination and roasting. (any 4 points)	U	6
	d)	Explain with diagram electro refining of copper.	U	6
	e)	Give preparation, properties and applications of thermocole.	U	7
	f)	Write properties and applications of Teflon.	U	7

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EVEN TERM END EXAM MAY-2019**EXAM SEAT NO.**

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LEVEL :- FOURTH PROGRAM : INFORMATION TECHNOLOGY**COURSE CODE :- ITF401/IT301/ITE401****COURSE NAME NETWORK ADMINISTRATION****MAX. MARKS : 80 TIME : 3 HRS. DATE :- 08/05 / 2019**

Instruction :-

- 1) Answers of two sections must be written in separate section answer book provided.
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN		S	Section-I		R/ U/ A	Co ITF 401	Mar ks
Q.1			Attempt any FOUR :				08
	a)		Define name space and enlist its types.		R	3	
	b)		State how to select network protocol		R	1	
	c)		State the use of BOOTP & RARP.		R	2	
	d)		State the difference between WINS & Active Directory Name Spaces.		R	3	
	e)		Describe how computers are selected while designing home or small office network.		A	1	
	f)		List object types and their functions (any two)		R	3	
Q.2			Attempt any FOUR :				16
	a)		Explain how the names are mapped to address.		U	3	
	b)		Explain the phases of Internetwork Design Process.		U	1	
	c)		Explain DHCP objectives.		U	2	
	d)		Draw and explain DHCP packet structure		U	2	
	e)		Describe generic top level domain and county code domain.		U	3	
	f)		With the help of example explain i) Canonical Name ii) LDAP Notation.		U	3	
Q.3			Attempt any FOUR :				16
	a)		Explain Recursive Resolution.		U	3	
	b)		Explain domain, trees and forest concepts.		U	3	
	c)		List and describe points should be considered while choosing a network medium for small Internet café.		A	1	
	d)		Explain ISDN.		R	2	
	e)		Draw and explain query and Response messages.		R	3	
	f)		Explain Network Printing Issues.		U	2	

P.T.O.

QN		Section- II		R/ U/ A	Co ITF 401	Mar ks
Q.4	S Q N					08
		Attempt any FOUR :				
	a)	List types of backups.		R	4	
	b)	Define virus.		R	4	
	c)	Write use of ping command.		R	5	
	d)	List types of firewall.		R	6	
	e)	Define IP security.		R	6	
Q.5	f)	Write use of VPN.		R	6	
		Attempt any FOUR :				16
	a)	Explain major updates.		U	4	
	b)	Write any four types of viruses and how they affect on computer system.		A	4	
	c)	Explain following TCP/IP utilities i) route ii) Nslookup.		U	5	
	d)	Explain VPN architecture.		U	6	
	e)	Write the use of following utilities with examples. i) Netstat ii) Traceroute		A	5	
Q.6	f)	Draw and explain encapsulating security payload forms.		U + A	6	
		Attempt any FOUR :				16
	a)	Write how to prevent virus infections on Network.		A	4	
	b)	Write procedure to take backup using external hardware.		A	4	
	c)	Describe Net CONFIG & NET DIAG OS utilities.		U	5	
	d)	Explain NET SESSION and NET Watcher.		U	5	
	e)	Write how replay attack occurs and how to deal with replay attacks.		A	6	
	f)	Explain IPsec key Management.		U	6	

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EVEN TERM END EXAM MAY-2019**EXAM SEAT NO.**

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LEVEL :- THIRD**PROGRAM : INFORMATION TECHNOLOGY****COURSE CODE :- ITF306****COURSE NAME :- COMPUTER NETWORK****MAX. MARKS : 80 TIME : 3 HRS. DATE :- 09/05 / 2019****Instruction :-**

- 1) Answers must be written in the main answer book provided.(and supplements if required)
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	Question Text	R/ U/ A	Co ITF 306	Ma rks
Q.1		Attempt any FOUR :			08
	a)	Define active network	R	1	
	b)	Define distributed computing.	R	1	
	c)	Differentiate between point to point and multipoint network.	A	1	
	d)	Draw hybrid topology of star and bus network.	A	1	
	e)	Enlist advantages of optical fiber.	R	3	
	f)	State working of Gateway.	R	2	
Q.2		Attempt any FOUR :			16
	a)	State application of computing network.	R	1	
	b)	Explain tree topology in detail.	U	1	
	c)	Draw and explain TCP/IP model with neat diagram	U	2	
	d)	Differentiate between OSI model and TCP/IP model.	A	2	
	e)	Explain twisted pair cable with diagram.	U	3	
	f)	Explain infrared with its applications.	U	3	
Q.3		Attempt any FOUR :			16
	a)	Explain client-server network.	U	1	
	b)	Describe advantages & disadvantages of computer network.	U	1	
	c)	Explain network criteria and enlist categories of network.	U	1	
	d)	Draw and explain OSI reference model with diagram.	U	2	
	e)	Describe local area network with neat diagram.	U	2	
	f)	Explain coaxial cable with diagram.	U	3	

P.T.O.

Q.4	Attempt any FOUR :			08
	a)	State purpose of LLC	U	4
	b)	Define half duplex and simplex mode.	U	4
	c)	State Net id and host id	R	5
	d)	Define port number	R	5
	e)	State use of TELNET.	R	6
	f)	Enlist services of user agent.	R	6
Q.5	Attempt any FOUR :			16
	a)	Draw and explain standard ethernet MAC sublayer frame format.	R	4
	b)	Write algorithm for UDP socket client and server communication.	A	5
	c)	Explain subnet and supernet with examples.	U	5
	d)	Explain Ten gigabit ethernet.	U	5
	e)	Draw and explain 2 scenarios of email with user agent and MTA.	U	6
	f)	Draw and explain MIME Header.	U	6
Q.6	Attempt any FOUR :			16
	a)	Describe 10 Base -2 in detail.	U	4
	b)	Explain Gigabit ethernet and also describe its goals.	R	4
	c)	Draw and explain TCP packet format..	U	5
	d)	Discuss UDP well known ports, also define checksum.	U	5
	e)	Explain NVT character set.	R	6
	f)	Discuss POP3 with its commands and response.	U	6

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EXAM SEAT NO.

LEVEL :- THIRD **PROGRAM : INFORMATION TECHNOLOGY**

COURSE CODE :- ITF310/ITE403

COURSE NAME :- DATA STRUCTURE

MAX. MARKS : 80 **TIME : 3 HRS.** **DATE :- 21/05/2019**

Instruction :-

- 1) Answers must be written in the main answer book provided.(and supplements if required)
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

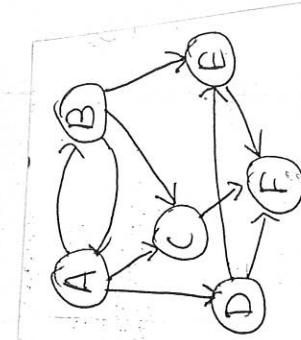
QN	S Q N	Question Text	R/ U/ A	Co ITF 310	Ma rks
Q.1		Attempt any FOUR :			08
	a)	Define data structure.	R	3	
	b)	What is meant by algorithm?	U	1	
	c)	Define recursion.	R	3	
	d)	Enlist different types of sorting methods.	R	2	
	e)	State the meaning of stack underflow.	R	3	
	f)	State four applications of Queue in computer system.	R	3	
Q.2		Attempt any FOUR :			16
	a)	Explain data types and their classification.	R	1	
	b)	Write a program for insertion sort technique.	A	2	
	c)	Sort following array using quick sort. A = 10 30 15 5 90 12 72 32	A	2	
	d)	Explain reversing of string using stack.	U	3	
	e)	Write a program to implement insert and delete operation on queue.	A	3	
	f)	Explain circular queue.	U	3	
Q.3		Attempt any FOUR :			16
	a)	Find the position of number 92 from following array using binary search technique. A = { 62,72,83,87,92,101,108,111 }	A	2	
	b)	Explain priority queue.	U	3	
	c)	Convert the following infix expression to prefix form (a + b) * (c - d) / e	U	3	

P.T.O

	d)	Show the diagrammatic representation of the queue after every operation for the following sequence of operations. Show Rear and Front with values. Show Rear & Front with values. Add('s'), Add(D'), Add ('F') Delete (e), Add('G'), Add('Q'), Delete (e), Delete (e)	U	3	
	e)	Implement Fibonacci series of given number using stack. Write a C program.	A	3	
	f)	Explain the term Big 'O' notation in detail . Write complexity of i) Bubble sort ii) Quick sort.	R	2	
Q.4		Attempt any FOUR :			08
	a)	Define Null pointer.	R	4	
	b)	List any four terminologies of tree.	R	4	
	c)	Define weight graph with example.	R	5	
	d)	State criteria used in selecting a hash function.	R	5	
	e)	Define multigraph.	R	5	
	f)	Define Hashing.	R	5	
Q.5		Attempt any FOUR :			16
	a)	Explain Link List with example and state operations on linked list.	U	4	
	b)	Construct adjacency matrix for following graph. (Refer Fig 1)	A	5	
	c)	Explain collision resolution by linear probing.	U	5	
	d)	Construct binary search tree for following set of elements. Show all steps. 10,20,15,5,1,7,13,19,25,35	A	4	
	e)	Write 'C' program to insert a node at the beginning of Linked list.	A	4	
	f)	Give preorder, postorder and inorder traversal for following tree and justify answer. (Refer Fig 2)	A	4	

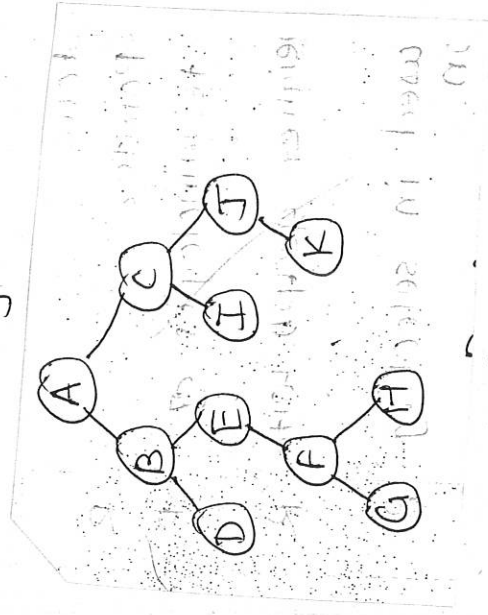
Q.6	Attempt any FOUR :				16
a)	Explain concept of doubly link list with example.	U	4		
b)	Explain following Tree Terminologies with respect to Tree. (Fig 3) i) LeafNode ii) Level of Node iii) Height of Tree iv) Degree of Tree	U	4		
c)	Show DFS for graph given below. (Refer Fig 4)	A	5		
d)	Explain Hash function folding method with example.	U	5		
e)	Write 'c' program for stack using linked list.	A	4		
f)	Write Warshall's algorithm.	A	5		

Fig. 1

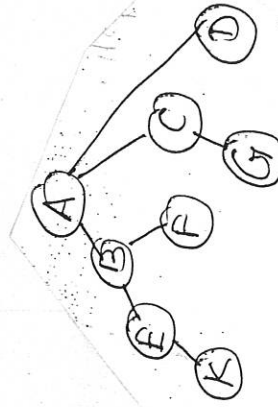


Q.No. 5 (b)

Fig. 2

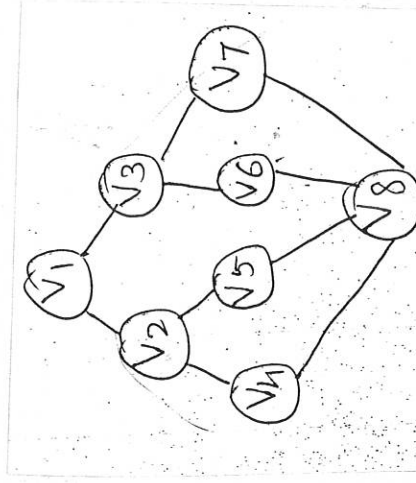


Q.No. 5 (c)



Q.No. 6 (b)

Fig. 3



Q.No. 6 (c)

Fig. 4

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EXAM SEAT NO.

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LEVEL: THIRD

COURSE CODE: ITF307

MAX. MARKS: 80

PROGRAM: INFORMATION TECHNOLOGY

COURSE NAME: OPERATING SYSTEM

TIME: 3 HRS.

DATE: 30/05/2019

Instruction:-

- 1) Answers must be written in the main answer book provided. (and supplements if required)
- 2) Illustrate your answers with sketches where ever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables will be made available on request.
- 5) Assume and mention suitable additional data necessary.
- 6) Use of Mobile is strictly prohibited.

7) **QN**>Question No, **SQL**>Sub-Question No, **R**> Remembering, **U**>Understanding, **A**>Application **CO**>Course outcome

QN	S Q N	Question Text	R U A	CO ITF A 307	Marks
Q.1		Attempt any FOUR			(08)
	a)	Define operating system. List different operating system.	R	1	
	b)	List any four functions of operating system.	R	1	
	c)	Define the term system call.	R	2	
	d)	Define the term system boot.	R	2	
	e)	Define process.	R	3	
	f)	List advantages of Thread.	R	3	
Q.2		Attempt any FOUR			(16)
	a)	Explain any two types of operating system.	U	1	
	b)	Explain any four services provided by operating system.	U	2	
	c)	Draw & explain microkernel operating system.	U	2	
	d)	Explain process states with neat diagram.	U	3	
	e)	Differentiate between short term, medium term & long term scheduler.	U	3	
	f)	State & explain multithreading models with diagram.	U	3	
Q.3		Attempt any FOUR			(16)
	a)	Differentiate between multiprogramming & multitasking operating system.	U	1	
	b)	Describe functions of operating system.	U	1	

	c)	Describe function operating system in file management.	U	2													
	d)	Explain system call for process management.	U	2													
	e)	Describe the terms: i) Networking ii) Protection system.	U	2													
	f)	Draw & explain process control Block.	U	3													
Q.4		Attempt any FOUR			(08)												
	a)	Define Deadlock.	R	4													
	b)	Define CPU bus cycle.	R	4													
	c)	Explain compile time binding.	R	5													
	d)	List different file attribute.	R	5													
	e)	Define the term Absolute path.	R	5													
	f)	Define Interrupt.	R	5													
Q.5		Attempt any FOUR			(16)												
	a)	Explain Round robin scheduling algorithm with example.	A	4													
	b)	Discuss various methods to recover deadlocks.	U	4													
	c)	Compare Logical and Physical address space.	A	5													
	d)	Explain different operation that can be performed on file.	U	5													
	e)	Explain DMA.	U	5													
	f)	Write a short note on network Devices.	U	5													
Q.6		Attempt any FOUR			(16)												
	a)	Explain the need of swapping. Describe swapping with example.	U	5													
	b)	Explain paging with example.	U	5													
	c)	Explain Tree level Directory.	U	5													
	d)	Explain in brief Mechanism of Interrupt Handling.	U	5													
	e)	Explain SJF algorithm with example.	U	4													
	f)	Solve following example using FCFS algorithm & find average waiting time. <table><tr><td>Process</td><td>Brust time</td></tr><tr><td>P₁</td><td>5</td></tr><tr><td>P₂</td><td>15</td></tr><tr><td>P₃</td><td>12</td></tr><tr><td>P₄</td><td>25</td></tr><tr><td>P₅</td><td>5</td></tr></table>	Process	Brust time	P ₁	5	P ₂	15	P ₃	12	P ₄	25	P ₅	5	A	4	
Process	Brust time																
P ₁	5																
P ₂	15																
P ₃	12																
P ₄	25																
P ₅	5																

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LEVEL :- FOURTH PROGRAM : INFORMATION TECHNOLOGY**COURSE CODE :- ITF409 / ITE410****COURSE NAME PHP****MAX. MARKS : 80 TIME : 3 HRS. DATE :- 30/ 05 / 2019****Instruction :-**

- 1) Answers of two sections must be written in separate section answer book provided.
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	Section- I	R/ U/ A	Co ITF 409	Mar ks
Q.1		Attempt any FOUR :			08
	a)	List common uses of PHP (any 2)	R	1	
	b)	Define Mysql.	R	1	
	c)	Define server side scripting.	R	1	
	d)	Write code to show comment styles used in PHP code.	R	2	
	e)	List PHP environment variables . (any 4)	R	2	
	f)	State use of preg-match () function.	R	3	
Q.2		Attempt any FOUR :			16
	a)	Explain history of PHP.	U	1	
	b)	Compare client side scripting and server side scripting.	U	1	
	c)	Write steps for installation of PHP on windows operating system.	A	1	
	d)	Illustrate code cohabitation in PHP.	U	2	
	e)	Develop a PHP script to display browser specific content.	A	3	
	f)	Develop input form for any 2 PHP string functions with fields textfield, radiobutton & submit button.	A	3	
Q.3		Attempt any FOUR :			16
	a)	Explain following features of PHP i) Many extensions ii) Not tag based iii) Cost iv) platform compatibility	U	1	
	b)	Explain static HTML with example.	U	1	
	c)	Illustrate escaping code in PHP with example.	A	2	
	d)	Develop a PHP script for arithmetic operators.	A	2	
	e)	Explain how to redirect to a new location in PHP with example.	U	3	
	f)	Develop html form and PHP script for string functions given below strrev() & strtoupper()	A	3	

P.T.O.

QN		S	Section- II	R/ U/ A	Co ITF 409	Mar ks
Q.4			Attempt any FOUR :			08
	a)		Writ use of and tag.	R	4	
	b)		Define user privilege in Mysql.	R	5	
	c)		Write how to suppress error message in PHP.	R	5	
	d)		Define BLOB Mysql data type.	R	5	
	e)		Write use of die ().	R	5	
	f)		Write use of following functions i) Mysql_list_dbs () ii) Mysql_errorC)	R	5	
Q.5			Attempt any FOUR :			16
	a)		Explain how to display directory content.	U	4	
	b)		Write a program to create new file in PHP.	A	4	
	c)		Explain procedure for connecting to Mysql and breaking connection script in Mysql.	U	5	
	d)		List and explain any six datatypes of Mysql.	U	5	
	e)		Write a note on populating table in PHP.	U	5	
	f)		Write procedure to create administrative interface for adding new record.	A	5	
Q.6			Attempt any FOUR :			16
	a)		Explain how to rename and delete file in PHP.	U	4	
	b)		Write a program for append data to file in PHP.	A	4	
	c)		Explain the procedure for creation of new database and deletion of database in PHP.	U	5	
	d)		Write PHP script for table creation.	A	5	
	e)		State two steps form sequence for creating table.	U	5	
	f)		Write a program for adding record in Employee database for following form.	A	5	

Employee ID

Employee Name

Employee basic sal

Gender
☐ Male
☐ Female

Employee birth Date

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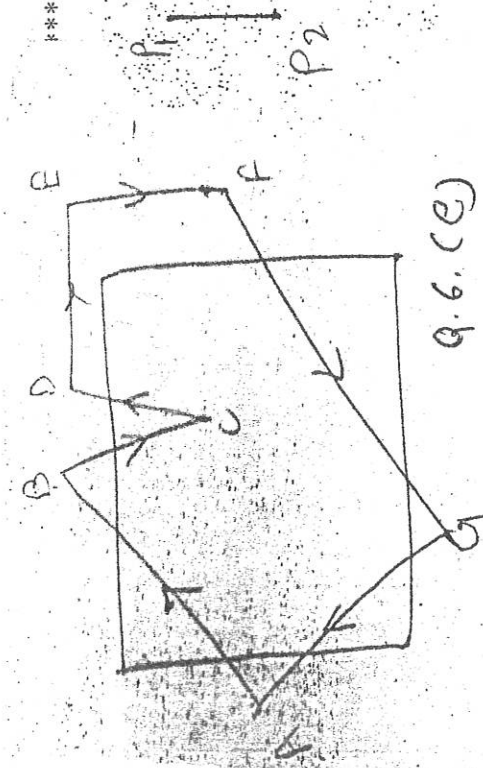
LEVEL :- THIRD**PROGRAM : INFORMATION TECHNOLOGY****COURSE CODE :- ITF312/ITE313****COURSE NAME :- COMPUTER GRAPHICS****MAX. MARKS : 80 TIME : 3 HRS. DATE :- 24 / 05 / 2019****Instruction :-**

- 1) Answers must be written in the main answer book provided.(and supplements if required)
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

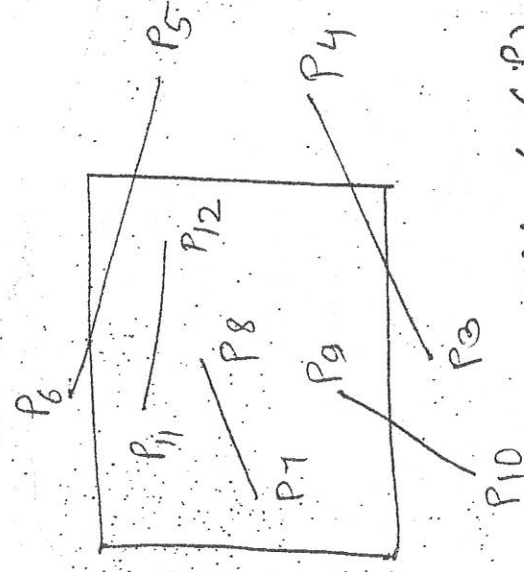
QN	S Q N	Question Text	R/ U/ A	Co ITF 312	Ma rks
Q.1		Attempt any FOUR :			08
	a)	State any four display devices.	R	1	
	b)	Enlist graphics file formats.	R	1	
	c)	List two algorithms used to fill polygon.	R	2	
	d)	State various categories of line	R	2	
	e)	Define scaling and reflection.	R	3	
	f)	Write 2D translation matrix. State its meaning.	U	3	
Q.2		Attempt any TWO :			16
	a)	i) Explain working of vector scan display. ii) Write and explain syntax of following graphics functions. 1) drawarc () 2) drawpoly ()	U	1	
	b)	Write Bresnham's circle generation algorithm with suitable example.	A	2	
	c)	Describe steps to rotate an object about an arbitrary point with example.	U	3	
Q.3		Attempt any FOUR :			16
	a)	Explain display file interpreter.	U	1	
	b)	Apply DDA line drawing algorithm having coordinates (2,2) (9,2) and draw the line.	A	2	
	c)	Write midpoint circle generation algorithm.	A	2	
	d)	Explain 2D reflection with example.	U	3	
	e)	Describe 3D translation with suitable example.	U	3	
	f)	Describe 2D transformation matrix for scaling translation and rotation.	U	3	

P.T.O.

Q.4	Attempt any FOUR :		08
a)	Define workstation transformation.	R	4
b)	Define window and viewport.	R	4
c)	Draw a neat diagram of complete viewing transformation.	A	4
d)	State the use of control points in curve.	R	4
e)	Enlist the types of curves.	R	4
f)	State any two needs of graphics standards.	R	5
Q.5	Attempt any FOUR :		16
a)	Write Sutherland – Hodgeman polygon clipping algorithm.	A	4
b)	Explain normalization transformation with neat diagram.	U	4
c)	Describe any four characteristics of Beziers curve.	U	4
d)	Write advantages of computer graphics.	U	5
e)	Explain DDA algorithm for arc generation.	U	4
f)	Compare raster scan display with random scan display.	A	5
Q.6	Attempt any FOUR :		16
a)	Write Mid-point subdivision algorithm for line clipping.	A	4
b)	Describe characteristics of B-spline curve.	U	4
c)	Draw and explain block diagram of raster scan display.	U	5
d)	Compare interlacing display and non-interlacing display.	A	5
e)	Apply polygon clipping algorithm on given polygon and explain each step.	A	4
f)	Apply the line clipping algorithm for given example and explain each step of each line.	A	4



Q.6.(c)



Q.No. 6.(f)



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LEVEL :- THIRD**PROGRAM : INFORMATION TECHNOLOGY****COURSE CODE :- ITF311****COURSE NAME :- MICROPROCESSOR****MAX. MARKS : 80 TIME : 3 HRS. DATE :- 24 / 05 / 2019****Instruction :-**

- 1) Answers must be written in the main answer book provided.(and supplements if required)
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	Question Text	R/ U/ A	Co ITF 311	Ma rks
Q.1		Attempt any FOUR :			08
	a)	Enlist 2 imitations of 8 bit microprocessor.	R	1	
	b)	Define pipelining.	R	2	
	c)	Classify instruction set.	R	3	
	d)	Enlist 2 salient features of 8086.	R	3	
	e)	Define i) Special purpose register. ii) General register.	R	2	
	f)	Enlist address mode.	R	1	
Q.2		Attempt any FOUR :			16
	a)	Draw and explain architecture of 8085.	U	1	
	b)	Explain minimum mode of operation in 8086 with diagram.	U	2	
	c)	With one example, explain logical instruction set.	U	3	
	d)	In 8086, how memory address is generated, explain.	U	2	
	e)	Write a program to add two numbers.	A	3	
	f)	Enlist any 4 string related instruction with one example each.	R	3	
Q.3		Attempt any FOUR :			16
	a)	Explain register organization in 8085.	U	1	
	b)	With help of block diagram of 8086. Explain architecture.	U	2	
	c)	State the meaning of given instruction. Also state which flags will be affected with this instruction. i) AAA ii) CMP	U	3	
	d)	Explain function of BIU & AU.	U	2	
	e)	Enlist 4 bit manipulation instruction.	R	3	
	f)	Explain concept of memory organization.	U	2	

P.T.O.

Q.4	Attempt any FOUR :			08
	a) Define i) Editor ii) Debugger.	R	4	
	b) Define i) Algorithm ii) Flowchart	R	4	
	c) List the directives used for procedure.	R	5	
	d) List the assembly language programming tools.	R	4	
	e) What do you mean by address decoding?	U	6	
	f) State the difference between I/O mapped I/O and memory mapped I/O.	U	6	
Q.5	Attempt any FOUR :			16
	a) List the advantages and disadvantages of procedure (any two each)	R	5	
	b) Write an 8086 ALP to multiply two 16-bit numbers.	A	4	
	c) Write an 8086 ALP to find sum of series of ten numbers.	A	4	
	d) Explain 8086 memory addressing.	U	6	
	e) Compare NEAR CALL & FAR CALL procedure (any 4 points)	R/ A	5	
	f) Write an 8086 ALP to perform block transfer of ten numbers without using string instructions.	A	4	
Q.6	Attempt any FOUR :			16
	a) List assembler directives in 8086 microprocessor. Explain any two with suitable examples.	U	4	
	b) Write a short note on memory interfacing as EVEN and odd bank	U	6	
	c) Compare Macro and procedure (any 4 points)	R/ U	5	
	d) Write an 8086 ALP to find largest number from array of 10 numbers.	A	4	
	e) Write an 8086 ALP to compare two strings using string instructions.	A	4	
	f) Explain process of procedure declaration.	U	5	

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PROGRAM : INFORMATION TECHNOLOGY**LEVEL :- THIRD****COURSE CODE :- ITF305/IT206/ITE305****COURSE NAME :- DATABASE MANAGEMENT SYSTEM****MAX. MARKS : 80 TIME : 3 HRS. DATE :- 27/05/2019****Instruction :-**

- 1) Answers must be written in the main answer book provided.(and supplements if required)
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	Question Text	R/ U/ A	Co ITF 305	Ma rks
Q.1		Attempt any FOUR :			08
	a)	Explain the terms read-only view and updatable view.	R	2	
	b)	State purpose of using index.	U	2	
	c)	Enlist functions of database administrator.	R	1	
	d)	Define i) Entity set ii) Schema	R	1	
	e)	State difference between 'order by' and 'group by' clauses.	U	2	
	f)	Define the term database trigger.	R	3	
Q.2		Attempt any FOUR :			16
	a)	Explain any four advantages of DBMS over file system.	R	1	
	b)	i) List symbols used in ER diagram. ii) Draw ER diagram for student registration system.	R A	1	
	c)	Describe attributes of explicit cursor.	R	3	
	d)	Write a PL/SQL block to find minimum number among given 3 numbers.	A	3	
	e)	Explain the structure of relational database.	U	2	
	f)	Write SQL commands for (consider client master table) i) Find out names of all clients in client master table. ii) List all clients located in 'Sangli'. iii) Change city of client no 'C001' to 'Kolhapur'. iv) Delete all clients who are staying in 'Pune.	A	2	
Q.3		Attempt any FOUR :			16
	a)	Define term attribute. Explain its types with example.	U	1	
	b)	Enlist advantages of PL/SQL over SQL.	R	3	
	c)	Explain union operation of relational algebra with example.	U	2	
	d)	Write and explain syntax for creating a view.	R	2	

P.T.O.

	e)	Explain concept of subquery with example.	U	2	
	f)	Create a function which returns salary of employee form 'emp' table when emp -name is given. Call the function form another PL/SQL block	A	3	
Q.4		Attempt any FOUR :			08
	a)	Define functional dependency.	R	4	
	b)	Define normalization.	R	4	
	c)	State different transaction states.	R	5	
	d)	List various steps in query processing.	R	5	
	e)	State the need of check point.	R	5	
	f)	Define shared mode lock.	R	5	
Q.5		Attempt any FOUR :			16
	a)	Explain the concept of serializability related to transaction processing.	U	5	
	b)	Explain the concept of deadlock with example.	U	5	
	c)	Describe validation based protocol.	U	5	
	d)	Explain BCNF with example.	U	4	
	e)	Discuss deferred database modification.	U	5	
	f)	Explain the concept of transaction with diagram.	U	5	
Q.6		Attempt any FOUR :			16
	a)	Give the example of concurrent schedule.	A	5	
	b)	Discuss granting of locks.	U	5	
	c)	Explain concurrency problem related to multiple transaction.	U	5	
	d)	Explain immediate database modification.	U	5	
	e)	Find 3NF decomposition of given relation schema. Shipping (Ship, Capacity, Data, Cargo, Value) Functional dependencies Ship → capacity Ship data → cargo Cargo capacity → value	A	4	
	f)	Explain time-stamp based protocol.	U	5	

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LEVEL: **THIRD**

PROGRAM: **INFORMATION TECHNOLOGY**

COURSE CODE: **ITF304/ITE304**

COURSE NAME: **OOP USING C++**

MAX. MARKS: **80**

TIME: **3 HRS.**

DATE: **29/05/2019**

Instruction:-

- 1) Answers must be written in the main answer book provided. (and supplements if required)
- 2) Illustrate your answers with sketches where ever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables will be made available on request.
- 5) Assume and mention suitable additional data necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN>Question No, SQN>Sub-Question No, R> Remembering, U>Understanding, A>Application CO>Course outcome

QN	S Q N	Question Text	R U A	CO ITF A 304	Marks
Q.1		Attempt any FOUR			(08)
	a)	Enlist any 4 applications of OOP.	R	1	
	b)	Define the term i) Class ii) Object	R	3	
	c)	Define function overloading.	R	2	
	d)	State the ways of constructor calling in main program. Give its syntax.	R	3	
	e)	Explain structure of C++ program.	U	1	
	f)	Explain inline function.	U	1	
Q.2		Attempt any FOUR			(16)
	a)	Explain with example function prototype.	U	2	
	b)	Differentiate between constructor & destructor.	U	3	
	c)	Explain operator precedence in C++.	U	1	
	d)	Explain with example how to make outside function inline.	U	1	
	e)	Explain parameterized constructor with example.	U	3	
	f)	Write a program to create a class student having data members Roll no, Name, Marks. Initialize and display data for one object.	A	2	
Q.3		Attempt any FOUR			(16)
	a)	Explain with example nesting of member function in C++.	U	2	
	b)	Write any program which show compile time polymorphism using function overloading.	A	1	
	c)	Write a program to demonstrate the use of multiple constructors.	A	3	
	d)	Describe characteristics of Friend function.	R	2	
	e)	Explain manipulators in C++.	U	1	
	f)	Illustrate with example use of Default arguments in constructor.	U	3	

P.T.O

Q.4	Attempt any FOUR			(08)
a)	Define operator overloading.	R	3	
b)	List the operators which cannot be overloaded.	R	3	
c)	Define multilevel inheritance.	R	4	
d)	Define virtual function.	R	5	
e)	State use of following functions i) Write() ii) Read ()	U	6	
f)	State the use of seekg (), tellp ()	R	6	
Q.5	Attempt any FOUR			(16)
a)	Write any four rules for overloading operators.	R	3	
b)	Differentiate between overloading & overriding of functions.(any four points)	U	3	
c)	Explain different visibility modes used in inheritance.	U	4	
d)	Define pointer. Write down the general syntax of pointer declaration with example.	R	5	
e)	Describe pointer Arithmetic in detail.	U	5	
f)	Discuss the use of following ios fuctions i) Width () ii) Precision() iii) Fill () iv) Setf()	U	6	
Q.6	Attempt any FOUR			(16)
a)	Write a program to find length of a string using operator overloading.	A	3	
b)	Explain overloading binary operators with one example.	U	3	
c)	Write a program to implement single inheritance from following figure. Accept & display product having only with sweet flavors.			
	Class product Data members: Product_id, name ↓ Class edible Data members: Weight, price, flavor	A	4	
d)	Identify inheritance shown in following figure. Implement it by using suitable members –functions			
	Class: Student Data members: Roll-no, Name ↓ Class: Test Data members : Marks 1, Marks 2 ↓ Class : Result Data members : Total	A	4	
e)	Explain the concept of this Pointer.	U	6	
f)	Describe use of open(): file modes.	U	6	

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LEVEL :- FOURTH PROGRAM : INFOMATION TECHNOLOGY**COURSE CODE :- ITF403****COURSE NAME INFORMATION SECURITY****MAX. MARKS : 80 TIME : 3 HRS. DATE :- 28/ 05 / 2019****Instruction :-**

- 1) Answers of two sections must be written in separate section answer book provided.
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S	Section- I	R/ U/ A	Co ITF 403	Mar ks
Q.1		Attempt any FOUR :			08
	a)	Define computer security.	R	1	
	b)	List types of passive attacks.	R	1	
	c)	Define encryption.	R	2	
	d)	Define cryptanalysis.	R	2	
	e)	Define block cipher.	R	3	
	f)	Define Man-in-Middle attack.	R	3	
Q.2		Attempt any FOUR :			16
	a)	Explain network security model.	U	1	
	b)	Explain goals of computer security.	U	1	
	c)	Explain Caesar cipher with example.	U	1	
	d)	Write an algorithm for encryption using Rail fence technique.	A	2	
	e)	Write and explain problem of symmetric key cryptography.	U	3	
	f)	Explain asymmetric key cryptography with example.	U	3	
Q.3		Attempt any TWO :			16
	a)	Convert following plain text to cipher text using Hill cipher technique Plaintext = CAT $Key = \begin{bmatrix} 6 & 24 & 1 \\ 13 & 16 & 10 \\ 20 & 17 & 15 \end{bmatrix}$	A	2	
	b)	i) Explain electronic code block and write down drawbacks of ECB. ii) Explain stream cipher and block cipher.	U	3	
	c)	Write how man-in-middle attack occurs of Daffier Hellman Algo. using following value. N=11, 9=7, x=3, y=9 Attacker value = x = 8, y= 6	U	1	

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Section- II					R/ U/ A	Co ITF 403	Mar ks
QN	S Q N						08
Q.4		Attempt any FOUR :					
	a)	Define hash function.			R	4	
	b)	List message authentication functions.			R	4	
	c)	Define i) Authentication ii) Integrity			R	4	
	d)	List types of protocols used in secure socket layer.			R	5	
	e)	Define electronic money.			R	5	
	f)	Define malicious software.			R	5	
Q.5		Attempt any FOUR :					16
	a)	Explain message authentication code.			U	4	
	b)	Write the procedure for how confidentiality, authentication and signature is achieved in public key encryption .			U	5	
	c)	Explain S/MIME.			U	5	
	d)	Write procedure for how electronic money is generated and how security is provided for electronic money.			A	5	
	e)	Explain intruders and intrusion techniques.			U	5	
	f)	Write the strategies used for strong password selection.			A	5	
Q.6		Attempt any TWO :					16
	a)	Write SHA - I algorithm.			A	4	
	b)	Write and explain E-mail security using pretty good privacy.			U + A	5	
	c)	Write how following types of attack and malicious software affects on computer system in network. i) Distributed denial of service attack. ii) Backdoor and Trojan Horses software.			A	5	

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EVEN TERM END EXAM MAY-2019**EXAM SEAT NO.**

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LEVEL :- FOURTH PROGRAM : INFORMATION TECHNOLOGY**COURSE CODE :- ITF404/IT305/ITE404****COURSE NAME WEB TECHNOLOGY****MAX. MARKS : 80 TIME : 3 HRS. DATE :- 28/05/2019****Instruction :-**

- 1) Answers of two sections must be written in separate section answer book provided.
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	Section-I	R/ U/ A	Co ITF 404	Mar ks
Q.1		Attempt any FOUR :			08
	a)	List out any four properties of listBox. State its uses.	R	1	
	b)	State whether ASP. NET is language or platform. Justify your answer.	U	1	
	c)	State role of command button with example.	R	1	
	d)	State whether cookie is client state or server state management technique. justify your answer.	U	1	
	e)	Differentiate between session objects and application object.	R	2	
	f)	Differentiate between OLEDB and ODBC (any two)	R	3	
Q.2		Attempt any FOUR :			16
	a)	Differentiate between ASP and ASP.NET.	R	1	
	b)	Design webpage and write asp.net program using C # to write and read multivalue cookies.	A	1	
	c)	Explain following methods of server object with syntax and example i) HTML Encode ii) Transfer.	U	2	
	d)	Explain error collection concept of ASP.NET when integrating with database.	U	3	
	e)	Write a program to create global.asax file.	A	2	
	f)	Write ASP. NET program for making and closing sql connection to database.	A	3	
Q.3		Attempt any FOUR :			16
	a)	Design and write ASP.NET program using TextBox, ListBox and button control.	A	1	
	b)	Explain cookie concept with advantages.	R	1	
	c)	Design webpage and write ASP.NET-C# program to create and display session object, session ID, session timeout & session abandon method.	A	2	

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	d)	Explain settings contained in Web config file with syntax and example.	U	2	
	e)	Explain ADO & RDO concept related to Microsoft universal data access strategies.	U	3	
	f)	With proper diagram explain ADO.NET architecture with its advantages over other databases.	U	3	
QN	S Q N	Section- II	R/ U/ A	Co ITF 404	Mar ks
Q.4		Attempt any FOUR :			08
	a)	Define connection.	R	3	
	b)	Define data reader.	R	3	
	c)	Define web services.	R	4	
	d)	Define namespaces.	R	4	
	e)	Explain XML.	R	5	
	f)	Define markup language.	R	5	
Q.5		Attempt any FOUR :			16
	a)	Develop a program to bind data to data grid view by using data adapter.	A	3	
	b)	Describe Data Repeater Control.	U	3	
	c)	Develop a program to send textmail.	A	3	
	d)	Explain procedure to create web service.	U	4	
	e)	Explain life cycle of web services.	U	4	
	f)	State the basic rules while writing XML.	U	5	
Q.6		Attempt any FOUR :			16
	a)	Compare Datalist control and Data Grid view control	A	3	
	b)	Explain transaction type in details.	U	3	
	c)	Explain how to consume Third party web services.	U	4	
	d)	Explain web methods in web services with example.	U	4	
	e)	Explain DTD.	U	5	
	f)	Compare HTML & XML	U	4	

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EXAM SEAT NO.

PROGRAM: INFORMATION TECHNOLOGY

COURSE NAME: JAVA PROGRAMMING

MAX. MARKS: 80

TIME: 3 HRS.

DATE: 23/05/2019

Instruction:-

- 1) Answer to two sections must be written in separate section answer book provided
- 2) Illustrate your answers with sketches where ever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables will be made available on request.
- 5) Assume and mention suitable additional data necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) **QN**>Question No, **SQN**>Sub-Question No, **R**> Remembering, **U**>Understanding, **A**>Application **CO**>Course outcome

QN	S Q N	Question Text	R U A	CO ITF 406	Marks
Section -I					
Q.1		Attempt any FOUR			(08)
	a)	List features of Java & explain any one feature.	R	1	
	b)	Define object & How do we create an object in java?	R	2	
	c)	Stat any four features of constructor.	R	2	
	d)	Define array. Give types of Array.	R	2	
	e)	List down system packages.	R	3	
	f)	Write syntax of interface.	R	3	
Q.2		Attempt any FOUR			(16)
	a)	Compare while and do-while loop.	U	1	
	b)	List & explain various access modifiers.	U	2	
	c)	Explain use of any four methods of string class.	A	2	
	d)	Explain steps to create your own package with example.	A	3	
	e)	Write down naming convention of package with example.	U	3	
	f)	Develop a java program to calculate area of circle & rectangle use interface.	A	3	
Q.3		Attempt any FOUR			(16)
	a)	Develop java program to find given number is prime or not.	A	1	
	b)	Describe arithmetic operators with example.	U	2	
	c)	Explain the concept of method overloading with example.	U	2	
	d)	Develop java program to create a class Account having data member as Acc-no, Name & balance. Accept & display data for one object.	A	2	
	e)	Compare string and string buffer.	U	2	
	f)	Define interface. State the need & use of interface with example.	R	3	
					P.T.O

Section-II

Q.4	Attempt any FOUR			(08)
	a) Give the syntax and example of drawLine () method.	R	4	
	b) Define thread. List different states of thread.	R	5	
	c) Write the syntax of Applet tag.	R	4	
	d) List different layouts used in AWT. Write constructor of Grid Layout.	R	6	
	e) State different constructors of color class.	R	4	
	f) Explain throws and finally statement with its syntax.	R	5	
Q.5	Attempt any FOUR			(16)
	a) Explain commonly used mouse events.	U	6	
	b) Create a frame to display square inside a circle.	A	4	
	c) Explain with example use of Radio button.	U	6	
	d) Write a java program to throw an user defined exception if a given number is negative.	A	5	
	e) List different low level event types and explain any one.	U	6	
	f) Describe different states of a thread.	U	5	
Q.6	Attempt any FOUR			(16)
	a) Write a program to design a login from using frame.	A	4	
	b) Explain the steps to create an executable applet.	U	4	
	c) Write a program to display square of a given number when button with caption "Display square" is pressed.	A	6	
	d) Define thread priorities. Explain with example how to set thread priorities.	U	5	
	e) Write a program to display message "welcome to java programming" on a frame using Blue color.	A	4	
	f) Explain with example passing parameter to applet.	U	4	

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EVEN TERM END EXAM MAY -2019**EXAM SEAT NO.**

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LEVEL: FIRST**PROGRAM: INFORMATION TECHNOLOGY****COURSE CODE: ITF102/ITE102****COURSE NAME: C PROGRAMMING****MAX. MARKS: 80****TIME: 3 HRS.****DATE: 29/05/2019****Instruction:-**

- 1) Answers must be written in the main answer book provided. (and supplements if required)
- 2) Illustrate your answers with sketches where ever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables will be made available on request.
- 5) Assume and mention suitable additional data necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) **QN**>Question No, **SQN**>Sub-Question No, **R**> Remembering, **U**>Understanding, **A**>Application **CO**>Course outcome

QN	S Q N	Question Text	R U A	CO ITF 102	Marks
Q.1		Attempt any FOUR			(08)
	a)	State identifiers and keywords.	R	1	
	b)	Write use of getchar() function.	U	2	
	c)	Define variable and constant.	U	1	
	d)	Enlist types of operators	R	2	
	e)	State categories of function.	R	4	
	f)	Write syntax of if-else ladder.	U	3	
Q.2		Attempt any FOUR			(16)
	a)	Write C program to demonstrate use of keywords, constant, variables with two or data types.	R	1	
	b)	Write C program to find Fibonacci series of number 1 to 15	A	3	
	c)	Describe passing arguments to a function with example.	R	4	
	d)	Explain conditional and logical operator with example.	U	2	
	e)	Explain continue and got o statement with example.	U	3	
	f)	Write execution steps of nested for loop by considering any one example of nested for loop.	A	3	
Q.3		Attempt any FOUR			(16)
	a)	Define Recursion. Write program of recursion.	U	4	
	b)	Write a C program to demonstrate use of function category-argument with return type and value.	A	4	

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	c)	Write a C program to show square of any two number (use function).	A	4	
	d)	Describe use of following function i) Printf() ii) getch() iii) Puts() iv) clrscr()	U	2	
	e)	Write a C program to show use of Relational operator.	A	2	
	f)	Write a C program to find out entered number is even or odd.	A	3	
Q.4		Attempt any FOUR			(08)
	a)	Explain the features of array.	U	4	
	b)	Write syntax to declare array.	R	4	
	c)	Define string.	R	5	
	d)	Write syntax of structure.	R	6	
	e)	Define pointer.	R	6	
	f)	State the use of '*' and '&' with respect to pointer.	R	6	
Q.5		Attempt any FOUR			(16)
	a)	Write a program to sort the elements of array in ascending order.	A	4	
	b)	Explain memory allocation of one dimensional array with example.	A	4	
	c)	Describe how to print string using putchar() & getchar()	U	5	
	d)	Describe declaration & initialization of string variable with example.	U	5	
	e)	Explain structure containing array with example.	U	6	
	f)	Write a program to print values of variables & their address.	A	6	
Q.6		Attempt any FOUR			(16)
	a)	Explain procedure to declare & read array elements.	U	4	
	b)	Write a program for addition of 2*2 matrix.	A	4	
	c)	Explain functions used for comparison of two strings with example.	U	5	
	d)	Write a program to find length of string entered by user.	A	5	
	e)	Identify and explain meaning of following statement with reference to pointers. int *a, b; b=20; *a=b; a=&b;	A	6	
	f)	Explain with example array of structure.	U	6	

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LEVEL :- FIFTH PROGRAM : INFORMATION TECHNOLOGY**COURSE CODE :- ITF508****COURSE NAME OBJECT ORIENTED MOD. AND DESIGNING****MAX. MARKS : 80 TIME : 3 HRS. DATE :- 22/05/2019****Instruction :-**

- 1) Answers of two sections must be written in separate section answer book provided.
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	Section-I	R/ U/ A	Co ITF 508	Mar ks
Q.1		Attempt any FOUR :			08
	a)	State concept of abstraction.	R	1	
	b)	Write any two characteristics of object oriented analysis.	R	1	
	c)	State object with object diagram.	R	1	
	d)	Write concept of Roll Names.	R	1	
	e)	Define Metadata.	R	2	
	f)	Differentiate between event and state.	U	2	
Q.2		Attempt any FOUR :			16
	a)	Explain concept of object oriented themes.	R	1	
	b)	Explain multiplicity with example.	U	1	
	c)	Explain abstract and concrete class with diagram.	R	2	
	d)	Explain aggregation verses association.	R	2	
	e)	Explain dynamic modeling.	R	2	
	f)	Write concept of concurrency in advanced dynamic.	U	2	
Q.3		Attempt any FOUR :			16
	a)	Draw and explain class and object diagram.	R	1	
	b)	Describe aggregation.	A	1	
	c)	Explain candidate keys with example and diagram.	R	2	
	d)	Explain multiple inheritances with example.	R	2	
	e)	Draw and explain nested state diagram.	R	2	
	f)	Draw and explain Data flow diagram with example.	U	2	

P.T.O.

QN		S Q N	Section- II	R/ U/ A	Co ITF 508	Mar ks
Q.4			Attempt any FOUR :			08
	a)		State four UML Notations with diagram.	U	3	
	b)		Draw diagram at OMG Model.	U	3	
	c)		Enlist 4 applications of UML.	A	3	
	d)		Define dependencies for component diagram.	R	4	
	e)		Define swim lane in activity diagram.	R	4	
	f)		Define sequential substate with example.	R	4	
Q.5			Attempt any FOUR :			16
	a)		Explain modeling system architecture.	U	3	
	b)		Describe notations used for deployment diagram.	U	4	
	c)		List two types of connector for component diagram and explain it.	U	4	
	d)		Draw use case diagram for water punch vending machine.	A	4	
	e)		List and explain different notations used in sequence diagram.	R	4	
	f)		Describe joining and forking in activity diagram.	R	4	
Q.6			Attempt any FOUR :			16
	a)		Explain software development life cycle of UML.	A	3	
	b)		Explain the term object diagram in structural modeling.	R	4	
	c)		Explain packages with suitable example.	U	4	
	d)		Explain <<include>> and <<extend>> dependencies used in use case diagram..	U	4	
	e)		Draw the state chart diagram for making photocopies on Xerox machine.	A	4	
	f)		Explain decision making and branching in activity diagram.	T	4	
