GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.

(An Autonomous Institute of Govt. Of Maharashtra)

ODD TERM END EXAM NOV. / DEC 2016

EXAM SEAT NO. | | | | | | |

LEVEL : - **FOURTH** PROGRAM : **INFORMATION TECHNOLOGY**

COURSE CODE :- **ITE401/IE301/IT301**

COURSE NAME :- **NETWORK ADMINISTRATION**

MAX. MARKS : **80** TIME : **3 HRS.** DATE :- **17 / 11 / 2016**

Instruction :-

1) Answer to 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

Marks

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

a) State use of global catalog server.

b) List and draw object types of active directory.

c) Draw Hierarchy of name servers.

d) Define the term manual allocation.

e) List early phases of the internet work design process.

f) List any four network medium.

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

a) Explain the following terms related to

i) Choosing a network speed. ii) Expanding the network.

b) Explain network printing issues and administration.

c) Draw DHCP packet structure.

d) Describe purpose of DNS with diagram.

e) Explain Recursive resolution with diagram.

f) Explain object naming with its type.

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

a) Explain the terms DNS and active directory.

b) Explain FQDN & PQDN with diagram.

c) Describe country domain with its diagram.

d) Explain DSL with diagram.

e) Explain ISDN with diagram.

f) Explain how to select network protocol & network medium for designing home or small office.

[P.T.O.]

Section – II	Marks

Q.4 Attempt any **FOUR** (08)

a) What is mean by backup Windows?

b) List any two advantages of drive updates.

c) Write output of ping command.

d) Define IP-security.

e) What is the limitation of firewall?

f) Define security Association.(SA)

Q.5 Attempt any **FOUR** (16)

a) Write note on major updates and patches.

b) Describe target selection and filtering.

c) Explain IPConfig TCP/IP utility.

d) Explain use of NET CONFIG & NET DIAG with example.

e) Write a note on Oakley key determination.

f) Draw and explain Authentication Header (AH) format.

Q.6 Attempt any **TWO** (16)

a) Write a note on virus and its types.

b) Explain following TCP/IP Utilities with example.

i) Route ii) Netstat iii) Nslookup.

c) Draw and explain VPN architecture.

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ODD TERM END EXAM NOV./ DEC -2016

EXAM SEAT NO. | | | | | | |

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

COURSE CODE :- **ITE302/IF202/IT202**

COURSE NAME :- **DIGITAL ELECTRONICS**

MAX. MARKS : **80** TIME : **3 HRS.** DATE: - **21 / 11 / 2016**

Instruction:-

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

Marks

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

a) State the Assosiative Laws.

b) State IC numbers for NOR and AND.

c) What is mean by Gray code?

d) Convert Decimal no. to binary i) $(54)_{10}$ ii) $(107)_{10}$.

e) Define the term multiplexer.

f) Draw half adder logical diagram.

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

a) Perform the substraction of the following decimal numbers using BCD numbers: $(345)_{10} - (297)_{10}$.

b) State and prove Demorgan's First and second theorm.

c) Draw the pin diagam of ALU and explain the function of M and G.

d) Explain the operation of 4 bits binary adder using IC 7483.

e) Reduce the following function using K-map method and realize the minimized expression using NAND Gate

$F(A,B,C,D) = \Sigma m(2,3,6,7,10,11,14,15) + d(4,5,12,13)$

f) Convert the number to respective no. system.

i) $(1321)_{10} = (\quad)_2 = (\quad)_8$. ii) $(739)_{10} = (\quad)_2 = (\quad)_8$.

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

a) Convert the following Boolean equation in SOP form into standard SOP form

i) $F(x,y,z) = XY + X$ ii) $Y = AB + \overline{B}C + \overline{A}C$.

b) Draw the circuit of 16:1 MUX using 4:1 MUX.

c) Write a note on alphanumeric code and ASCII codes.

d) Design the circuit of full adder from its truth table by using K-map reduction technique.

e) Explain the working of BCD to 7- segment decoder using IC 7447 with diagram.

f) Perform the following binary substraction by two's complement method.

i) $(1101)_2 - (1100)_2$. ii) $(0111)_2 - (0101)_2$.

[P.T.O.]

Q.4 Attempt any **FOUR** (08)

a) List the triggering methods of flipflop.

b) What is race around condition?

c) What is the difference between EPROM and PROM?

d) Define the following specifications of A to D converter

i) Resolution ii) Conversion Time.

e) List the specifications of DAC.

f) Write the applications of ADC.

Q.5 Attempt any **FOUR** (16)

a) Explain 4-bit PIPO shift register.

b) Draw the diagram 4-bit Ring counter and explain it's working.

c) Draw the logical diagram of MOD-12 counter and describe it's operation. Write its truth table.

d) Classify memories. Compare RAM and ROM on two points.

e) With neat circuit diagram, explain the working R-2R ladder network of DAC.

f) Explain principle of working of dual slope ADC with the help of neat diagram.

Q.6 Attempt any **FOUR** (16)

a) Draw the circuit diagram of SR Flip Flop using NAND gate and describe its working.

b) Explain the working of T Flip Flop with circuit diagram and truth table.

c) Compare EPROM and EEPROM with any four points.

d) Differentiate between SRAM and DRAM.

e) With the circuit diagram, explain the working principle of binary weighted resistor DAC.

f) Draw functional pin diagram of ADC 0808 and write their functions.

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ODD TERM END EXAM NOV-DEC -2016

EXAM SEAT NO. | | | | | | |

LEVEL: FIRST | PROGRAM: INFORMATION TECHNOLOGY

COURSE CODE: IF101 | COURSE NAME: ENGINEERING DRAWIG

MAX. MARKS: 80 | TIME: 4 HRS. | DATE: 15/11/2016

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.

Marks

Q.1 A) Attempt any **TWO** **(04)**

a) What are the standard sizes of drawing sheet according to ISI?

b) Draw visible line, cutting plane line & long brake line.

c) Draw the conventional representation for materials i) Zinc ii) Steel

B) Attempt any **ONE** **(04)**

a) Construct a diagonal scale of R.F =1/5000 to show single meter and long enough to measure 600 meters.

b) An a certain drawing 40 meters are represented by 1 centimeter draw a suitable scale to show single meter and long enough to measure 500 meters.

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

a) i) Draw the projections of the point 'A' 25mm in front of V.P and 30mm above H.P

ii) Draw the projection of the point 'B' 30mm in front of V.P and in H.P

b) Draw the projection of line (F.V & T.V) 60mm long when.

i) Straight line is perpendicular to H.P and parallel to V.P and one point of line is 30mm from V.P and 15mm from H.P

ii) straight line is parallel to V.P and in H.P and at distance of 25 mm from V.P

c) A straight line AB 70mm long makes an angle of 30^0 to H.P the end A is 10mm above H.P and 15mm in front of the V.P draw the top view and front view of the line AB.

d) The distance between the two end projections as is 50mm The line is parallel to H.P and makes an angle of 40^0 with V.P one point of line is 20mm from VP and HP. Draw the projection (F.V and T.V) of the line.

e) A straight line CD 80mm long is in V.P and makes an angle of 30^0 with H.P one point of line is 15mm above H.P Draw F.V and top view of the line.

f) A straight line MN is in H.P and front view of line MN measures 50mm, Point M and N are 20mm and 60mm in front of V.P respectively draw is front view and top view.

Q.3 A) Attempt any **TWO** **(10)**

a) A rectangular lamina ABCD AC=80mm and CD=45mm is resting on CD on H.P the lamina is inclined at 45^0 with H.P and CD is perpendicular to V.P. Draw front view and top view.

P.T.O

b) An equilateral triangular plate 60mm side is resting on one corner on H.P and side opposition this corner is perpendicular to V.P .Draw its three views if the plate is inclined at 30^0 with H.P

c) A circular plate of diameter 45mm is resting on one point on circumference on H.P the plate is inclined at 45^0 with V.P and perpendicular to H.P. Draw its front view and top view.

B) Construct a scale of 1cm=0.4meter to show the meters and decimeter and long enough to measure upto 5meters. Show a distance of 4meters and 6 decimeters on it. **(06)**

Q.4 Fig.No.1 shows pictorial view of an object. Draw to full scale the following views by first angle method of projection. **(16)**

i) Front view in the direction 'X' (05 Marks)
ii) Right hand scale view (R.H.S.V) (05 Marks)
iii) Top View (04 Marks)
iv) Dimensioning (02 Marks)

Q.5 Fig No 2 shows pictorial view of an object. Draw following views **(10)**

i) Sectional F.V. looking in the direction 'X' (sec A-A) (05 Marks)
ii) Top view (03 Marks)
iii) Left hand side view (L.H.S.V) (02 Marks)

OR

Fig no.3 isometric view of an object. Draw following views with dimensioning. **(10)**

i) Sectional F.V. looking in the direction 'X' (section along A-A) (05 Marks)
ii) Top view (05 Marks)

Q.6 Attempt any Following **(14)**

a) Construct a isometric scale upto 120mm **(02)**

b) Fig. no 4 shows F.V and T.V. of an object. Draw isometric view **(12)**

OR

c) Fig. no 5 shows F.V. and T.V of an object. Draw isometric drawing **(12)**

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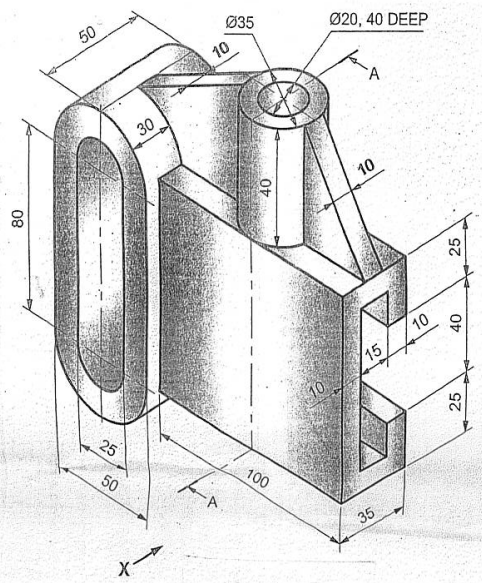

FIG. No. 1.

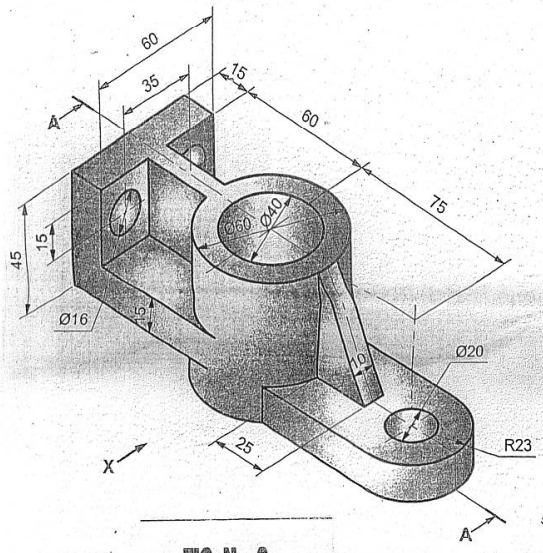

FIG. No. 2.

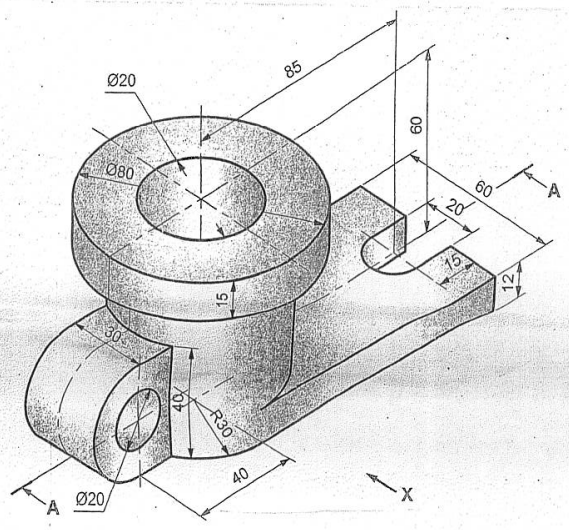

FIG. No. 3.

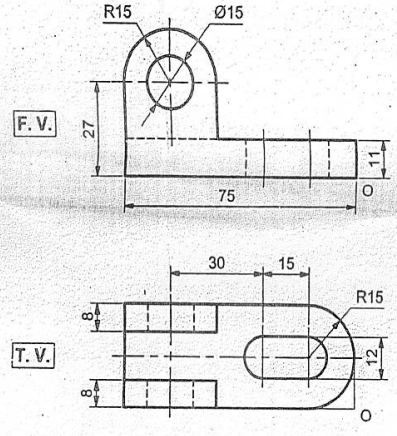

FIG. No. 4.

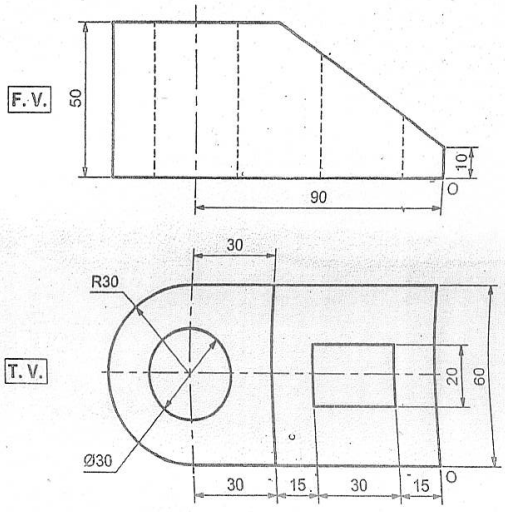

FIG. No. 5.

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ODD TERM END EXAM NOV/DEC -2017

EXAM SEAT NO. | | | | | | |

LEVEL: **FIRST** PROGRAM: **COMMON**

COURSE CODE:**CCF108 /R110/X107/110/CCE108** COURSE NAME: **ENGINEERING DRAWING -II**

MAX. MARKS: **80** TIME: **4 HRS.** DATE: **22/11/2017**

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, **SQN**>Sub-Question No, **R**> Remembering, **U**>Understanding, **A**>Application **CO**>course outcome

QN	SQN	Question Text	RUA	CO CCF108-	Marks
Q.1		Attempt any **TWO**			(08)
	a)	Illustrate following joints with their symbols i) Spot weld ii) Single- J butt weld	U	3	
	b)	Draw free hand sketch for 'V' thread.	U	3	
	c)	Draw free hand sketch for wing nut.	U	3	
Q.2		Attempt any **TWO**			(16)
	a)	Draw the following orthographic views of the object as shown in fig.1. i) Sectional F.V (03 marks) ii) Side view from left (03 marks) iii) Top view (02 marks)	U	1	
	b)	Fig.2 shows pictorial view of an object using first angle projection method, draw i) Front view (03 marks) ii) Top view (02 marks) iii) Sectional left hand side view(03 marks) iv) Give important dimensions.	U	2	
	c)	Fig 3.Shows pictorial view of an object, Draw i) Sectional F.V(03 marks) ii) Top view (02 marks) iii) Right hand side view (03 marks)	U	2	
Q.3		Attempt any **TWO**			(16)
	a)	Fig.4 shows pictorial view of an object. Draw following views of an object by using first angle method. i) F.V. in the direction X (03 marks) ii) Top view (02 marks) iii) Right hand side view (03 marks)	U	2	

P.T.O

	b)	By using first angle method, draw i) F.V. in the direction X (03 marks) ii) Top view (02 marks) iii) Left hand side view (03 marks) Refer Fig.5	U	2	
	c)	Fig 6 show pictorial view of an object using first angle method of projection , draw i) Front view (03 marks) ii) Top view (02 marks) iii) Right hand side view(03 marks)	U	2	
Q.4		Attempt any **ONE**			(08)
	a)	Figure no.4 (a) shows two views of an object. Draw by using first angle projection method the following views. i) Sectional elevation (section A-A) (04 marks) ii) Left hand side view (missing view) (04 marks)	U	4	
	b)	Fig.4 (b). Shows elevation and plan of a machine part. Draw the following views, by using first angle method of projection. i) Sectional elevation (section A-A) (04 marks) ii) Left hand side view (missing view) (04 marks)	U	4	
Q.5		Attempt any **ONE**			(16)
	a)	Fig. no 5 (a). Shows two views of an object. Draw its isometric view, taking 'O' as an origin. Use natural scale.	U	5	
	b)	i) Construct isometric scale upto 150mm (02 marks) ii) Fig. no 5 (b) (ii) shows two views of an object. Draw its isometric projection taking 'O' as an origin by isometric scale. (14 marks)	U	5	
Q.6		Attempt any **TWO**			(16)
	a)	Figure no. 6 (a) shows front view and top view of an a square prism, having a circular hole in the center. Draw its development of the surface.	U	6	
	b)	Figure no 6 (b) shows front view of cone, resting in H.P in first quadrant, cut by three different planes I, II, III. Draw the development of the lateral surface of this cut cone.	U	6	
	c)	Figure no 6 (c) shows front view of a right square pyramid with the sides of base equally inclined to V.P, resting on its base H.P. It is cut by two sectional planes A&B at 60^0 to each other as shown in fig. no 6(c). Draw the development of the lateral surface of the pyramid.	U	6	

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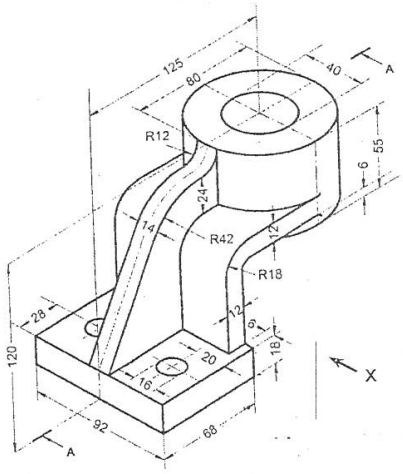


Fig. 1
Q.2 (a)

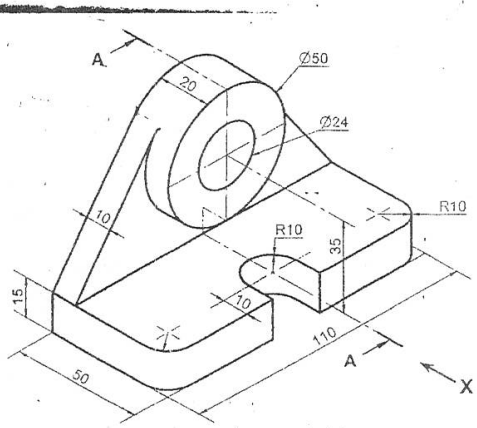


Fig. 2
Q.2 (b)

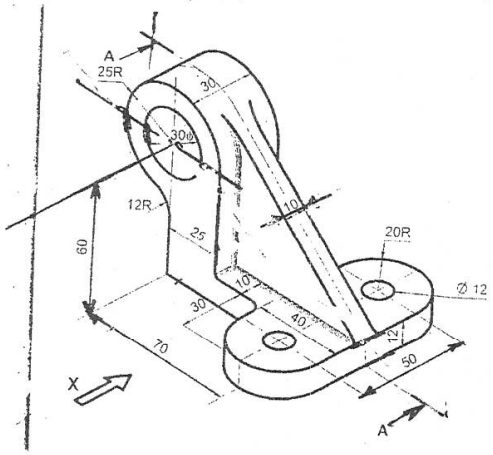


Fig. 3
Q. 2 (c)

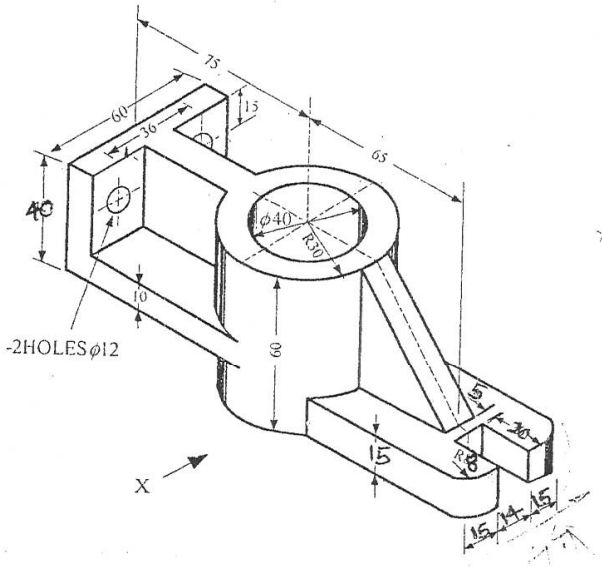


Fig. 4
Q. 3 (a)

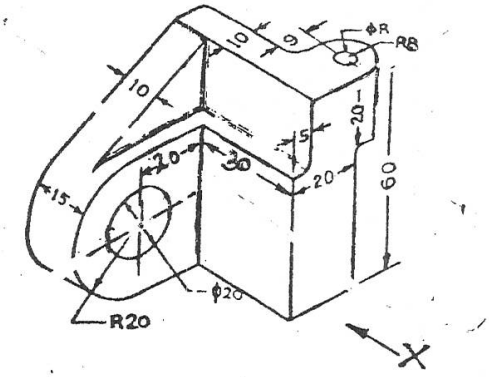


Fig. 5
Q. 3 (b)

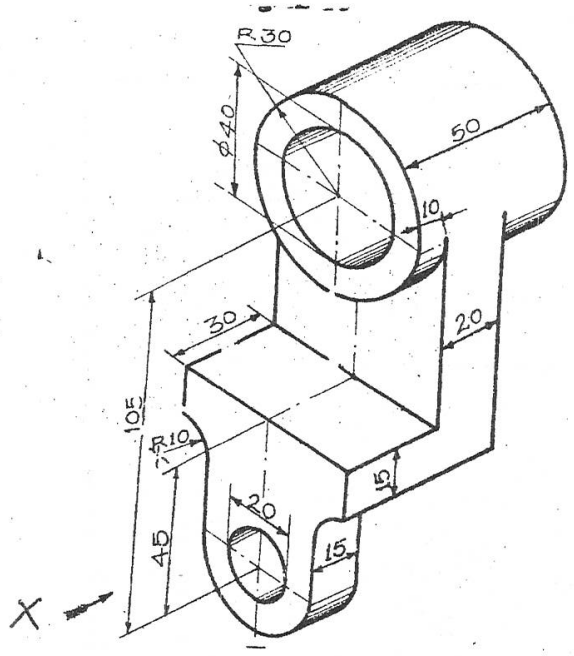
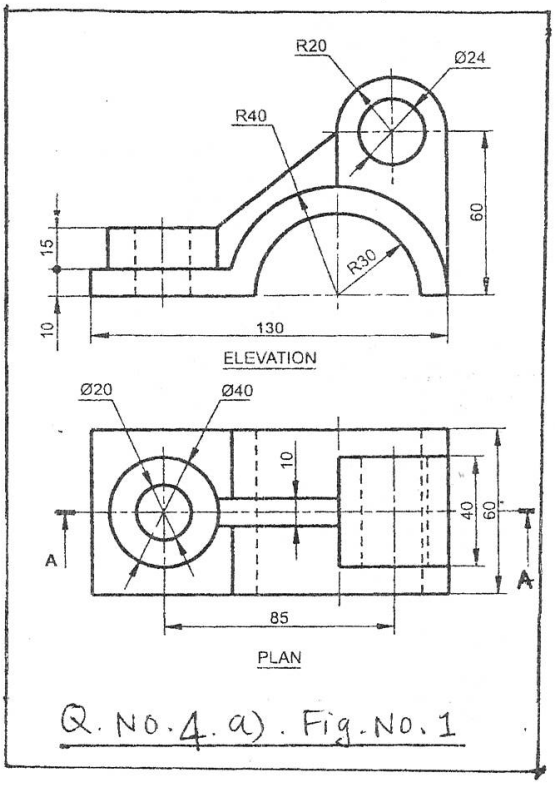
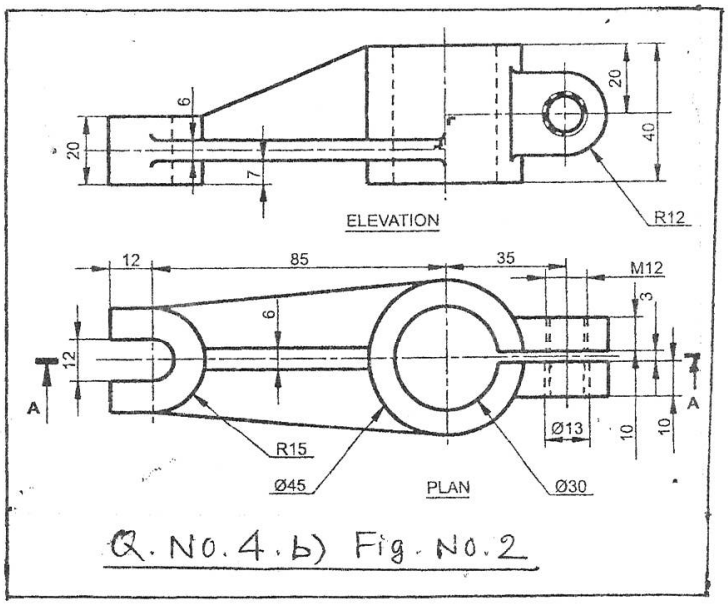


Fig. 6

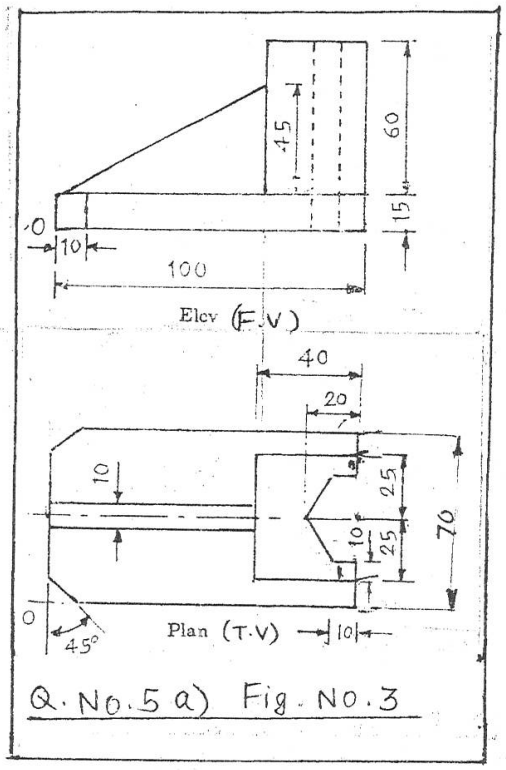
Q. 3 (c)



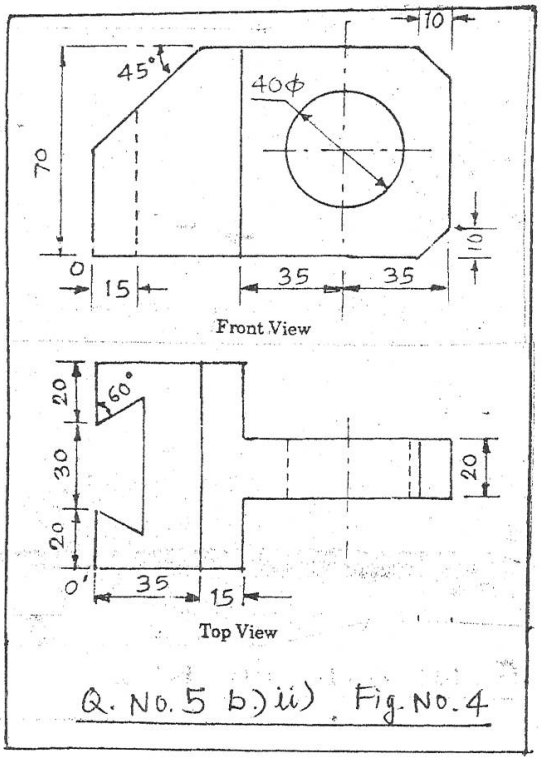
Q. NO. 4. a). Fig. NO. 1



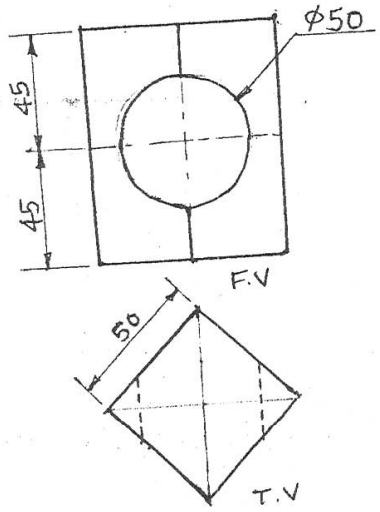
Q. NO. 4. b) Fig. NO. 2



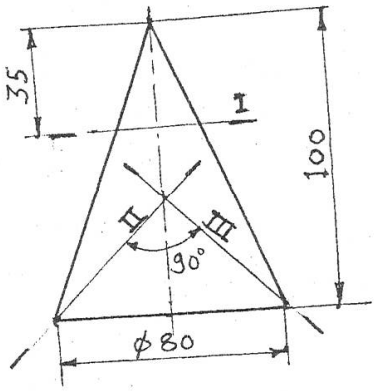
Q. No. 5 a) Fig. No. 3



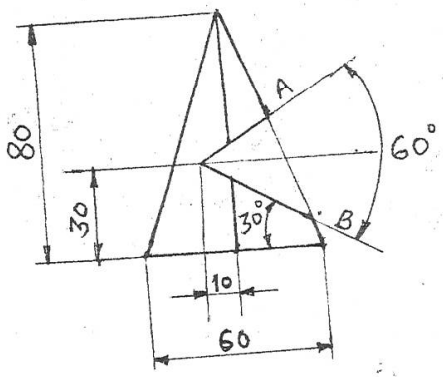
Q. No. 5 b.) ii) Fig. No. 4



Q. No. 6(a) Fig. No. 5



Q. No. 6(b) Fig. No. 6



Q. No. 6(c) Fig. No. 7

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ODD TERM END EXAM NOV. / DEC. -2017

EXAM SEAT NO. | | | | | | |

LEVEL : - **FIRST** PROGRAM : **COMMON**
COURSE CODE :- **CCF202 / CCE202**
COURSE NAME :- **COMMUNICATION SKILLS**
MAX. MARKS : **40** TIME : **2 HRS.** DATE :- **24 / 11 / 2017**

Instruction :-

1) Answers to each section must be written in separate answer book.
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> Question No. R> Remembering, U> Understanding, A> Application. CO > Course Outcome

Q.N.	SQN	Question Text	URA	CO CCF202	Marks
Q.1		Answer the following questions in 3-5 sentences (attempt any FOUR)			08
	a)	Define communication. Give an example of communication event.	R	1	
	b)	Explain any two principles of written communication.	R	3	
	c)	Define encoding and decoding.	R	1	
	d)	Enlist any four advantages of over Head projector (OHP)	U	5	
	e)	Enlist any four tips of prepared speech.	U	2	
	f)	Write any four examples in which oral communication is used.	A	2	
Q.2		Answer the following questions in 12-14 sentences (attempt any FOUR)			16
	a)	Explain any four principles of effective communication.	U	1	
	b)	Distinguish between oral and written communication.	A	2/3	
	c)	State any four precautions one should take while making presentation.	A	5	
	d)	Explain any four interview techniques.	U	6	
	e)	State the importance of communication for the development of an engineer.	A	1	
	f)	Explain the various aspects of body language.	U	4	
Q.3		Attempt any TWO			16
	a)	Write an application letter along with your resume to 'Infosys software Banglore -05 for the post of engineer.	A	3	
	b)	Explain the types of communication.	U	1	
	c)	The following is the age wise readership of 'The Times of India' a daily newspaper. Age Group — Readership (%) 16 25 — 10 26 35 — 27 36 45 — 17 46 55 — 22 56 65 — 24 Present the above data in the form of pie graph.	A	4	

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ODD TERM END EXAM NOV. / DEC. 2017

EXAM SEAT NO. | | | | | | |

LEVEL : - **FOURTH** PROGRAM : **INFORMATION TECHNOLOGY**

COURSE CODE :- **ITE410**

COURSE NAME :- **PHP**

MAX. MARKS : **80** TIME : **3 HRS.** DATE :- **13 / 12/ 2017**

Instruction :-

1) Answer to 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

Marks

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

a) List any four features of MYSQL.

b) Define PHP.

c) Define phpinfo ( ).

d) Define client side scripting.

e) State types of PHP start and PHP end tags.

f) List PHP string function.

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

a) List and explain many extensions of PHP.

b) List & explain three packages provided by apache PHP and MYSQL.

c) How to install PHP on Windows?

d) Explain importance of instruction terminator.

e) Write a program for displaying browser specific content.

f) Explain how to redirect new location in PHP with example.

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

a) Explain following features of PHP and MYSQL
i) Not tag based ii) Stability iii) Speed iv) Open source licensing.

b) List and explain installation of PHP on Linux.

c) Explain comparison operators with example.

d) Describe retrieving environment variables using HTTP_USER_AGENT.

e) Write a program for displaying platform specific content.

f) Write a program for PHP string function program include
i) Input form. ii) Script to display form value. iii) Submitting form and getting result.

P. T. O.

Section – II	Marks

Q.4 Attempt any **FOUR** (08)

a) State the difference between w & wt file access mode.

b) Give syntax of mysql _ connect ( ) with example.

c) Define mysql_error ( ).

d) How be create a new user in MYSQL?

e) Write usage of substr ( ).

f) Define mysql_select _ db ( ).

Q.5 Attempt any **FOUR** (16)

a) Explain how to check if a file already exists.

b) Write a PHP program to display directory contents.

c) Describe mysql_list_dbs ( ) & mysql_num_rows ( ) with example.

d) Explain how to create a new database in PHP.

e) Describe supressing error message in PHP with example.

f) Write a PHP table creation script.

Q.6 Attempt any **TWO** (16)

a) Explain all modes used with fopen ( ). Give example of any one of them

b) State and explain two step form sequence for creating table.

c) Write a PHP program for adding records in employee table.

Fields i) emp_id ii) emp_name iii) emp_address iv) emp_mobile v) emp _ emailid.

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GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.

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ODD TERM END EXAM NOV. / DEC. -2017

EXAM SEAT NO. | | | | | | |

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

COURSE CODE :- **ITF302/IF202/IT202/ITE302**

COURSE NAME :- **DIGITAL ELECTRONICS**

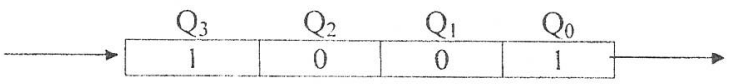
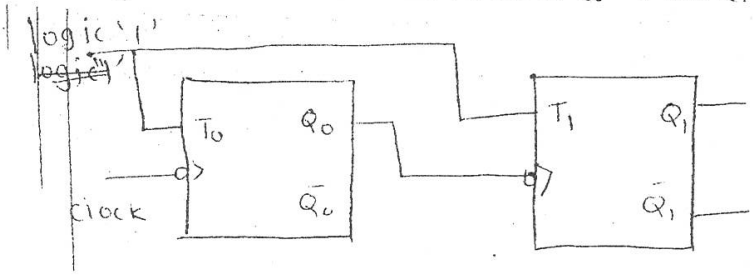
MAX. MARKS : **80** TIME : **3 HRS.** DATE :- **30/ 11 / 2017**

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> Question No. R> Remembering, U> Understanding, A> Application.

QN	SQN	Question Text	R/U/A	CO Code ITF302	Marks
Q.1		Attempt any **FOUR**			**08**
	a)	Convert the following binary numbers to decimal i) $(1001)_2$ ii) $(1100)_2$	U	1	
	b)	State the universal gates.	R	2	
	c)	Draw truth table & symbol of AND gate.	R	2	
	d)	Define Encoder and Decoder.	R	2	
	e)	Convert following numbers into equivalent octal number. i) $(204)_{10}$ ii) $(762)_{10}$.	U	1	
	f)	Draw the truth table for Half adder	A	3	
Q.2		Attempt any **FOUR**			**16**
	a)	State & prove De-Morgan's second law.	U	2	
	b)	Simplify the following Boolean expression with Boolean laws and draw the logical diagram of reduced equation. $Y = B\overline{C}\,\overline{D} + \overline{A}BD + ABD + BC\overline{D} + \overline{B}CD + \overline{A}\,\overline{B}\,\overline{C}D + A\overline{B}\,\overline{C}D.$	A	2	
	c)	Draw the logic diagram and truth table of full adder.	R	3	
	d)	Explain the working of 4 bit adder using IC7483. Also draw its circuit diagram.	U	3	
	e)	Simplify the following Boolean expression on K-map. $Y = \overline{A}\,\overline{B}\,\overline{C}\,\overline{D} + \overline{A}\,\overline{B}CD + \overline{A}B\overline{C}\,\overline{D} + AB\overline{C}\,\overline{D}$	A	2	
	f)	Perform substraction of following numbers using 1's & 2's complement method i) $(52)_{10} - (65)_{10}$.	A	1	
Q.3		Attempt any **FOUR**			**16**
	a)	Perform binary substraction of following numbers i) $(64)_{10} - (32)_{10}$. ii) $(93)_{10} - (45)_{10}$.	A	1	

P.T.O.

	b)	Realize the following Boolean expression using only NAND gates $Y = (AB + BC)C$	A	2	
	c)	Draw truth table for binary inputs with equivalent Gray outputs.	U	1	
	d)	Write pin description of ALU IC 74181 with pin diagram.	A	3	
	e)	Design a 4:1 multiplexer using only NAND gates.	U	3	
	f)	Compare Demultiplexer & Decoder (any four points)	U	3	
Q.4		Attempt any **FOUR**			08
	a)	Distinguish between combinational circuit and sequential circuits with any two points.	U	4	
	b)	Draw symbol of –Ve edge triggered JK-FF with preset and clear input.	R	4	
	c)	Define the following terms i) Address ii) Byte	R	5	
	d)	State the function of ADC and DAC	U	6	
	e)	Give the classification of memories.	R	3	
	f)	List the applications of ADC.	U	6	
Q.5		Attempt any **FOUR**			16
	a)	Draw R-2R Ladder type DAC. Explain the operation when input is 1000.	A	6	
	b)	Differentiate between RAM and ROM with any four points.	U	5	
	c)	Explain operation of 4 bit serial in parallel out shift register with logic diagram.	U	4	
	d)	Design two bit ripple up counter using JK-flip-flop and explain its operation with timing diagram.	A	4	
	e)	Draw pin diagram of DAC IC 0808 and state its features.	U	5	
	f)	Explain operation of dual slope ADC with neat diagram.	U	6	
Q.6		Attempt any **FOUR**			16
	a)	Draw logic diagram for 4-bit parallel in serial out shift register and explain its operation.	U	3	
	b)	Draw pin diagram of ADC IC 0809 and state its features.	U	6	
	c)	What will be the contents of shift register shown below after 3 clock pulses if initial data is 1001? Consider the right shift operation. Justify the answer 	A	3	
	d)	Explain how $(101)_2$ is converted into its analog equivalent voltage by using binary weighted register.	A	6	
	e)	Recognize the counter shown below and after how many clock cycles it will get reset? Consider initial values as $Q_0 = 0$ and $Q_1 = 0$ 	A	4	
	f)	Explain the concept of EPROM and EEPROM in detail.	U	5	

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Q6b)

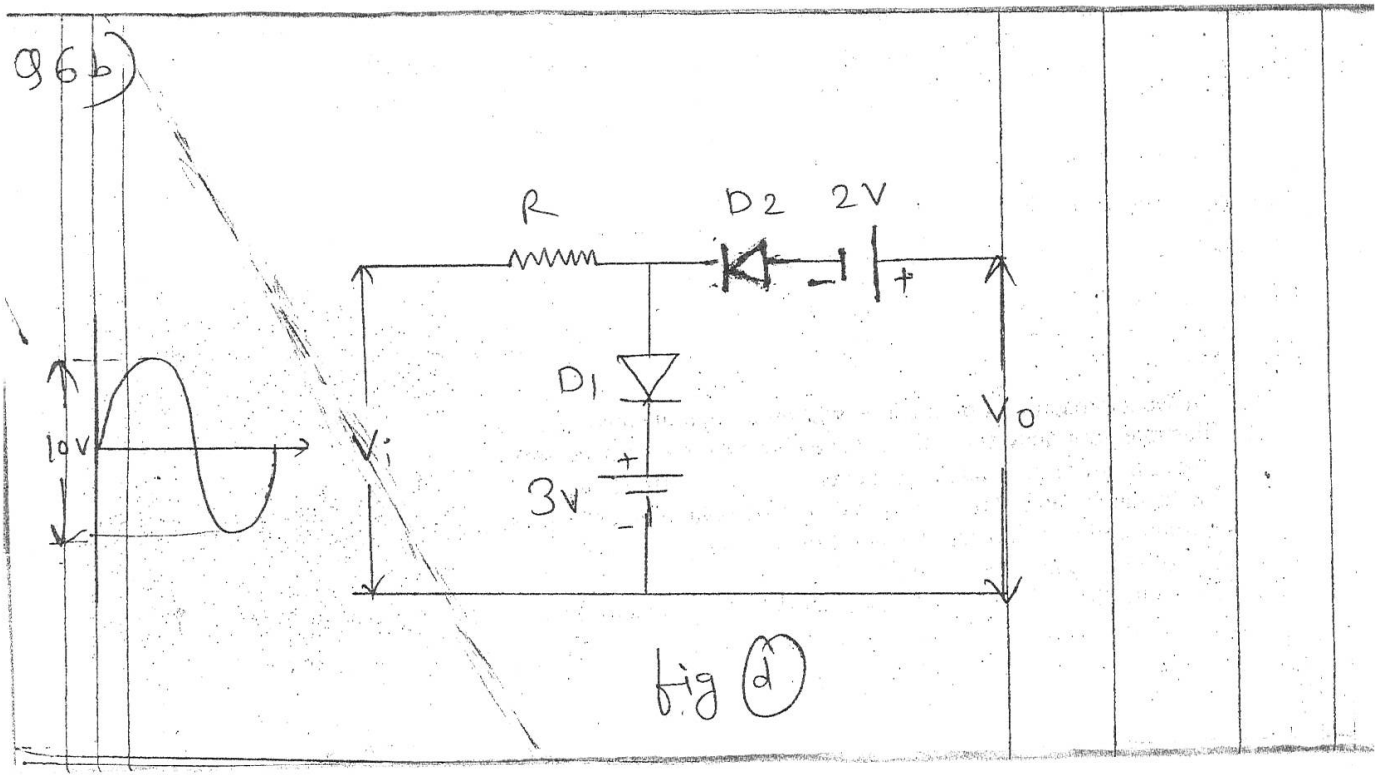
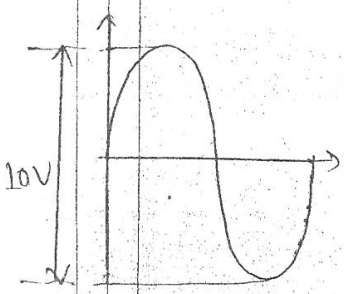


fig (d)

Q5 f)



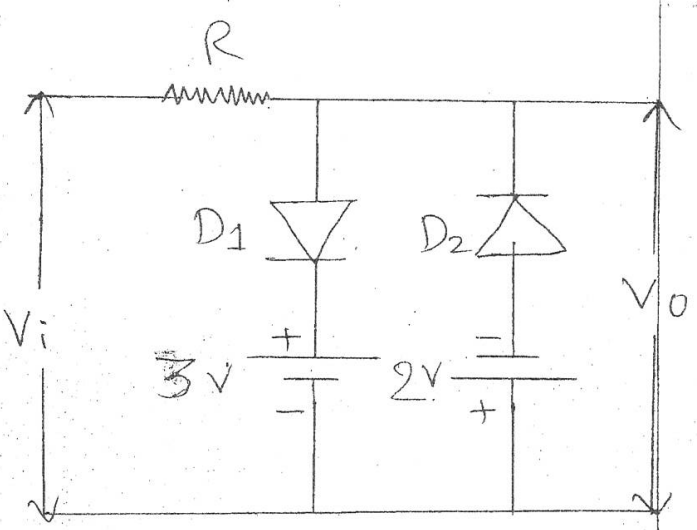


Fig (a)

Q6 a)

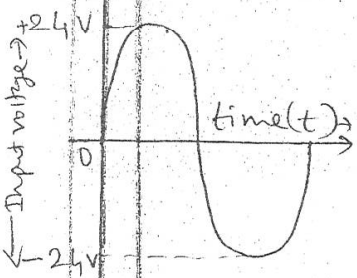


fig (b)

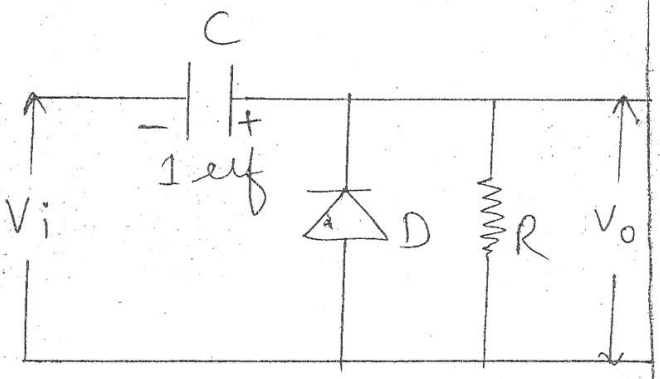


fig (c)

[4|5]

P.T.O.

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ODD TERM END EXAM NOV./ DEC. -2017

EXAM SEAT NO. | | | | | | |

LEVEL : - **THIRD** PROGRAM : **INFORMATION TECHNOLOGY**
COURSE CODE :- **ITE313**
COURSE NAME :- **COMPUTER GRAPHICS**
MAX. MARKS : **80** TIME : **3 HRS.** DATE :- **23 / 11 / 2017**

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

Marks

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

a) Write syntax of initgraph ( ) function in C.

b) Enlist applications of computer graphics.

c) Define 2D Translation.

d) Define 2D Rotation.

e) Define 2D Reflection.

f) Define 2D Scaling.

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

a) Describe working of CRT with its diagram.

b) Describe display file with its structure.

c) Write DDA line drawing algorithm.

d) Write Bresenham circle generation algorithm.

e) Describe 2D transformation matrix for scaling and reflection.

f) Translate a Δ ABC by 5 units in x direction where coordinates are A (5,5) , B(10,5), C(10,10)

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

a) Describe working of flat panel display with neat diagram.

b) Write Bresenham line drawing algorithm.

c) Write midpoint circle generation Algorithm.

d) Write flood fill algorithm for polygon filling.

e) Explain 2D rotation matrix with example.

f) Give 3D transformation matrix for Translation, Rotation.

P.T.O

Q.4 Attempt any **FOUR** (08)

a) Define normalization transformation.

b) Define view port.

c) Define line clipping and list types of line clipping algorithm.

d) State characteristics of Bezier Curve.

e) Define curve.

f) Define display and list types of display.

Q.5 Attempt any **FOUR** (16)

a) Write steps for Cohen-Sutherland algorithm for line clipping.

b) Explain viewing transformation..

c) State characteristics of B-spline.

d) Explain curve and how curve generated.

e) Describe need of graphics standards.

f) Compare Raster scan display and Random scan display.

Q.6 Attempt any **FOUR** (16)

a) Write steps for midpoint subdivision algorithm for line clipping.

b) Write steps for Sutherland. Hodgeman algorithm for polygon clipping.

c) Explain line clipping algorithm.

d) Write steps for arc generation using DDA algorithm.

e) Explain Random scan display.

f) State advantages of graphics standards.

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ODD TERM END EXAM NOV. / DEC. 2017

EXAM SEAT NO. | | | | | | |

LEVEL : - **FIFTH** PROGRAM : **INFROMATION TECHNOLOGY**

COURSE CODE :- **ITE403**

COURSE NAME :- **DATA STRUCTURE**

MAX. MARKS : **80** TIME : **3 HRS.** DATE :- **24 / 11 / 2017**

Instruction :-

1) Answer to 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

Marks

Q.4 Attempt any **FOUR** (08)

a) Define Big 'O' and Omega 'Ω' notation.

b) Define data structure and give its classification

c) Define sorting. Give its type.

d) State application of stack.

e) Define stack overflow and stack underflow condition.

f) Write diagrammatic representation of circular queue.

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

a) Write the operations performed on data structure.

b) What is searching and writes its importance?

c) Write a program for bubble sort.

d) Convert the following expression into postfix form with illustration of all steps
(Note: ↑ indicate exponent operator)
B ↑ C * (D/E) + F/G

e) Write a program to perform push, POP and display operation on stack.

f) Write a program for insert, delete and display operation perform on queue.

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

a) Explain complexity of algorithm. Describe time and space complexity of algorithm.

b) Write a program for linear search.

c) Elaborate the steps for performing quick sort for given elements of array :

35 10 20 40 50 45

d) Write a program to find factorial of entered number using recursion.

e) Explain priority queue with example.

f) Write and explain application of queue.

P.T.O

Section – II	Marks

Q.4 Attempt any **FOUR** (08)

a) State the advantages of linked list over array.
b) List applications of binary tree.
c) Define the term path matrix.
d) What is mean by complete graph?
e) List features of hashing function.
f) State use of hashing.

Q.5 Attempt any **FOUR** (16)

a) Explain terminologies Node, Address, pointer, Null pointer and Information related to linked list.
b) Write an algorithm for Insertion and deletion operations on linear linked list.
c) Write a note on complete binary tree and strictly binary three.
d) Explain sequential representation of graphs.
e) Explain mid-square and folding method of hash function.
f) Write a note on collision resolution by linear probing.

Q.6 Attempt any **TWO** (16)

a) Write a C/CPP program that implements operations of stack using linked list.
b) Explain traversing methods of tree data structure.
c) Explain shortest path algorithm with example.

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ODD TERM END EXAM NOV. / DEC. 2017

EXAM SEAT NO. | | | | | | |

LEVEL : - **FOURTH** PROGRAM : **INFORMATION TECHNOLOGY**

COURSE CODE :- **ITE405**

COURSE NAME :- **LINUX**

MAX. MARKS : **80** TIME : **3 HRS.** DATE :- **09 / 12/ 2017**

Instruction :-

1) Answer to 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

Marks

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

a) What is Kernel? What's its role?

b) What is Su command?

c) Discuss info command.

d) How to check login sessions?

e) What is use of chown & chgrp?

f) Discuss roles in SELinux.

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

a) What is file system for Linux? Also discuss file formats of Linux.

b) Discuss networking connectivity, multitasking and GUI features for Linux.

c) How to list directories with permission? Discuss ls in details?

d) Describe compression of files using Bzip2 , bzcat.

e) Discuss on and how to set data and time.

f) Discuss policies in SELinux.

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

a) What are basic hardware requirement of Linux? Discuss partitioning.

b) How to copy and move file using commands? Give an example also.

c) Discuss head and tail utility.

d) Discuss standard input and output.

e) Explain redirection using example.

f) Explain Tools in SELinux.

P.T.O

Section – II	Marks

Q.4 Attempt any **FOUR** (08)

a) List commands used for printing.

b) Which packages used in Linux for working with graphics?

c) Define Shell.

d) Give structure of Shell command line.

e) List predefined variables in Shell programming.

f) Give the syntax of case statement.

Q.5 Attempt any **FOUR** (16)

a) Explain Built-in commands of Linux.

b) Explain if ..... then.....else statement with example.

c) List and explain bash Shell features. (any four)

d) Explain GIMP tool in detail.

e) Describe root account and Fdisk utility of Linux.

f) How to check system specification in Linux OS?

Q.6 Attempt any **FOUR** (16)

a) Explain Administrative configuration files.

b) Describe the term Administering Linux system.

c) Explain Emacs editor.

d) Explain Shell command line.

e) How to declare and access array variables in Shell script? Explain.

f) List and explain string pattern matching in Shell script.

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Section – II Marks

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ODD TERM END EXAM NOV/DEC -2017

EXAM SEAT NO. | | | - | | | |

LEVEL: **FIRST** PROGRAM: **EE/IE/E&TC/IT**

COURSE CODE: **CCF102/CCE102/R103/R104/X102/X108** COURSE NAME: **ENGINEERING PHYSICS**

MAX. MARKS: **80** TIME: **3 HRS.** DATE: **11/12/2017**

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

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QN	SQN	Question Text	RUA	Co CCF102-	Mark
Q.1		Attempt any **FOUR**			**(08)**
	a)	State and explain Hookes law of elasticity.	R	1	
	b)	Steel is more elastic than rubber. Explain.	U	1	
	c)	Define density and specific gravity.	R	1	
	d)	State effect of temperature and Adulteration on surface tension.	R	1	
	e)	Define free oscillations and forced oscillations.	R	2	
	f)	Define i) Nanoscale ii) Nanometer	R	3	
Q.2		Attempt any **FOUR**			**(16)**
	a)	Explain behavior of wire under continuously increasing load.	U	1	
	b)	A wire of diameter 4mm and length 2m extends by 2mm when a force of 10 N is applied. Find Young's modulus of the wire.	A	1	
	c)	State and explain Newton's law of viscosity. Define coefficient of viscosity and derive its S.I unit.	U	1	
	d)	Define capillary action. Give its three examples.	R	1	
	e)	Define i) Cohesive force ii) Adhesive force iii) Molecular Range iv) Sphere of influence.	R	1	
	f)	i) Write any two examples of Nano structured material. ii) Write any two characteristics of Transverse wave.	U	2	
Q.3		Attempt any **FOUR**			**(16)**
	a)	Derive expression for coefficient of viscosity of liquid by stokes method.	A	1	
	b)	Explain Laplace's molecular theory for surface tension.	U	1	
	c)	i) State Stokes law. ii) Define velocity gradient with S.I. Unit.	R	1	

P.T.O

	d)	Define i) Amplitude ii) Wave period iii) Frequency iv) Wavelength.	R	2	
	e)	Define longitudinal wave and Transverse wave. Give one examples each.	R	2	
	f)	State any four applications of Nanotechnology.	R	3	
Q.4		Attempt any **FOUR**			**(08)**
	a)	Define i) dispersion ii) dispersive power.	R	4	
	b)	State and explain Ohm's law.	R	4	
	c)	Draw a neat sketch of a Coolidge X-ray tube.	R	5	
	d)	Mention any two applications of optical fiber.	R	6	
	e)	When a resistance of 262Ω is connected in the right gap of a meter bridge. The balancing length is found at 48cm from the left end. Calculate the resistance in the left gap.	A	4	
	f)	Draw a neat sketch showing the structure of an optical fiber.	R	6	
Q.5		Attempt any **FOUR**			**(16)**
	a)	Derive the prism formula.	A	4	
	b)	State any four characteristics of photo-electric effect.	U	5	
	c)	Mention any four applications of laser	R	5	
	d)	Explain the propagation of light through an optical fiber.	U	6	
	e)	State any four properties of X-rays.	R	5	
	f)	When two resistances are connected in series the effective resistance is 100Ω but when connected in parallel the effective resistance is 24 Ω. Calculate the two resistances.	A	4	
Q.6		Attempt any **FOUR**			**(16)**
	a)	Derive an expression for equivalent resistance, when three resistances are connected in parallel.	A	4	
	b)	With the help of a neat diagram explain the construction of a photo-cell	U	5	
	c)	State and explain four properties of laser.	U	5	
	d)	Mention any four advantages of optical fiber over conventional metal conductors.	R	6	
	e)	For an equilateral prism the angle of minimum deviation in 39^0. Calculate its refractive index.	A	4	
	f)	When a light of wavelength 5400^0A is incident on a metal plate, electrons are emitted with zero velocity. Calculate the threshold frequency and work function. (Given : h=6.625 x10^{-34}Js, C=3 x10^8 m/s)	A	5	

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ODD TERM END EXAM NOV. / DEC. 2017

EXAM SEAT NO. | | | | | | |

LEVEL : - **FOURTH** PROGRAM : **INFORMATION TECHNOLOGY**

COURSE CODE :- **ITE406**

COURSE NAME :- **JAVA PROGRAMMING**

MAX. MARKS : **80** TIME : **3 HRS.** DATE :- **11 / 12/ 2017**

Instruction :-

1) Answer to 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 Marks

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

a) Enlist features of Java.

b) Define vector.

c) State the use of final keyword.

d) Write syntax of an interface.

e) List different system packages in Java.

f) State any two differences between class and interface.

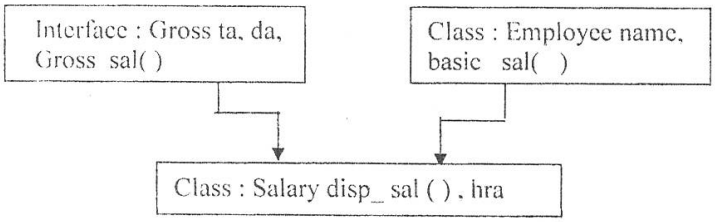
Q.2 Attempt any **FOUR** (16)

a) Define package. State how to create and access user defined package in Java.

b) Explain with example single level inheritance.

c) Give different data types and their storage size available in Java.

d) Write a program to implement following inheritance.



e) Write a program to implement a vector class and method for adding and removing elements. After remove display remaining list.

f) Define a class item having data member code and price. Accept data for one object and display it.

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

a) Write a program to find sum of all integers greater than 100 and less than 200 that are divisible by 7.

b) Explain following methods of string class with their syntax
i) Substring ( ) ii) Compare To ( )

c) Design a package containing a class which defines a method to find area of rectangle. Import it in Java application to calculate area of rectangle.

d) Compare if and switch statement.

e) Explain how classes in Java system packages can be accessed.

f) Explain with example protected and private protected access specifier.

P.T.O

Section – II

Marks

Q.4 Attempt any **FOUR** (08)

a) Write a Java code to display a frame.

b) What is exception?

c) How is Java's co-ordinate system is organized?

d) List common run time errors.

e) What is the use of GridBagLayout ( ) class?

f) List various mouse events.

Q.5 Attempt any **FOUR** (16)

a) Explain the syntax of draw Rect ( ) & fill Rect ( ) with example.

b) Write an applet to accept username in the form of parameter and print Hello < username>.

c) Explain Life-cycle of thread.

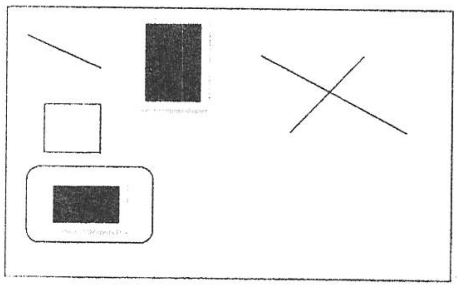
d) Describe the steps involved in developing and running applet.

e) Explain any four methods of checkBox class.

f) Explain role of event listener interface in handling events of Java.

Q.6 Attempt any **FOUR** (16)

a) Write a program to display following output.



b) Explain various attribute of <Applet > tag.

c) Explain following methods i) Suspend ( ) ii) Yeild ( ) iii) Setpriority ( ) iv) Wait ( ).

d) How to we put an applet into web page? Explain.

e) Explain FlowLayout manager with example.

f) Explain role of Action listener interface in handling action event.

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ODD TERM END EXAM NOV. / DEC. 2017

EXAM SEAT NO. | | | | | | |

LEVEL : - **FOURTH** PROGRAM : **INFORMATION TECHNOLOGY**

COURSE CODE :- **ITE402/IT302**

COURSE NAME :- **SOFTWARE ENGINEERING**

MAX. MARKS : **80** TIME : **3 HRS.** DATE :- **07 / 12 / 2017**

Instruction :-

1) Answer to 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 Marks

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

a) List evolving role of software (any four)

b) Describe the term software engineering.

c) Draw prototyping model.

d) List phases of waterfall model.

e) Define requirement engineering.

f) State different sizes estimations.

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

a) State and explain role of management in development.

b) Describe RAD (rapid application development) model with diagram.

c) State and explain characteristics / categories on which selection of suitable model is based.

d) Describe the term interviews in requirement elicitation.

e) Explain data dictionaries.

f) Define function count. Explain its use in size estimation.

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

a) Identify and explain different reasons for why it is difficult to improve s/w process.

b) Draw and explain spiral model.

c) Describe the term brainstorming in requirement elicitation.

d) Define following terms.:- i) Relationships in ER diagram ii) candidate keys.

e) Define typical s/w risks in Risk analysis.

f) Explain LOC in size estimation.

P.T.O

Section – II

Marks

Q.4 Attempt any **FOUR** (08)

a) List types of coupling.

b) Write any two objectives of Design.

c) Define what is testing?

d) List software quality features.

e) What is ripple effect?

f) List places of software maintenance.

Q.5 Attempt any **FOUR** (16)

a) Explain Bottom-up and Top-down design.

b) Explain conceptual & technical design.

c) Explain unit testing in detail.

d) Write any four point difference between verification and validation.

e) Explain categories of maintenance.

f) Describe modified program testing.

Q.6 Attempt any **FOUR** (16)

a) Explain syntaic and semantic model.

b) Define following term. i) Code efficiency ii) Memory efficiency.

c) Explain the basic concept of White box testing.

d) Explain following terminologies i) error ii) mistake iii) bug iv) fault.

e) Explain maintenance process with diagram.

f) Explain potential solutions to maintenance problems.

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GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.

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ODD TERM END EXAM NOV. / DEC. 2017

EXAM SEAT NO. | | | | | | |

LEVEL : - **FOURTH** PROGRAM : **INFORMATION TECHNOLOGY**

COURSE CODE :- **ITE401/IT301**

COURSE NAME :- **NETWORK ADMINISTRATION**

MAX. MARKS : **80** TIME : **3 HRS.** DATE :- **05 / 12 / 2017**

Instruction :-

1) Answer to 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

Marks

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

a) List any four network medium.

b) Draw diagram of an enterprise network consisting of multiple LAN's.

c) State use of ARP?

d) Define Name space.

e) List and draw objects types of active directory.

f) State use of principal names.

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

a) Explain needs of network design overview.

b) List and explain DHCP objectives.

c) Explain network printing issues & administration.

d) Describe purpose of DNS with diagram.

e) Explain how to install DNS server in windows server 2003.

f) Describe domains, trees and forest.

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

a) Explain how to select computer for designing home or small office.

b) Explain ISDN with diagram.

c) Describe public switched telephone network (PSTN)

d) Explain Resolver and its type.

e) Describe question record of DNS with diagram.

f) Explain DNS and active directory.

P.T.O

Section – II

Marks

Q.4 Attempt any **FOUR** (08)

a) List any four types of virus.

b) What is mean by drive manipulation?

c) What is use of NETSTAT command?

d) List types of firewall.

e) Which are the advantages of IP security?

f) Define IP security.

Q.5 Attempt any **FOUR** (16)

a) Explain driver updates and software updates.

b) Describe preventing virus infections.

c) Explain NET-START & NET-STOP OS utility.

d) Write a note on NET-SESSION and NET-WATCHER OS utility.

e) Explain IP Sec key management.

f) Explain AH-tunnel mode with diagram.

Q.6 Attempt any **TWO** (16)

a) List and explain backup hardware devices.

b) Describe following TCP/IT utilities. i) Ping ii) Trace route iii) Route.

c) List types of firewall & explain any one of them with diagram.

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GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.

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ODD TERM END EXAM NOV. / DEC. -2017

EXAM SEAT NO. | | | | | | |

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

COURSE CODE :- **ITF305 / ITE305 / IT206**

COURSE NAME :- **DATABASE MANAGEMENT SYSTEM**

MAX. MARKS : **80** TIME : **3 HRS.** DATE :- **06/ 12 / 2017**

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> Question No. R> Remembering, U> Understanding, A> Application.

QN	SQN	Question Text	R/U/A	CO Code ITF305	Marks
Q.1		Attempt any **FOUR**			08
	a)	List four DDL commands.	R	1	
	b)	Define Entity and Entity sets.	U	2	
	c)	Define primary key.	U	2	
	d)	Describe concept of index in database.	U	2	
	e)	State use of BETWEEN operator.	U	2	
	f)	List advantages of using stored procedure.	U	2	
Q.2		Attempt any **FOUR**			16
	a)	Describe DBMS Vs file system.	U	1	
	b)	Explain structure of relational database.	U	2	
	c)	Consider the following database Employee (emp_id, emp_name, emp_city, emp_addr, emp_dept, join_date). i) Display the emp_id of employee who live in city Kolhapur or Pune. ii) Change employee name 'Ajit' to 'Aarav'.	A	2	
	d)	Describe how to delete data from table with example.	A	3	
	e)	Explain conditional control structure in PL/ SQL.	U	3	
	f)	Enlist advantages of PL/SQL over SQL.	U	3	
Q.3		Attempt any **FOUR**			16
	a)	Explain role of database Administrator.	U	1	
	b)	Describe entity relationship model.	U	1	
	c)	Describe project and set difference operations in relational algebra.	U	2	
	d)	Explain Inner join & outer joint with example.	U	2	
	e)	Write PL/SQL program to find the square of a number given by user using while_loop.	A	3	
	f)	Define database trigger with example.	U	2	

P.T.O.

<table>
<tr><th>Q N</th><th>S Q N</th><th>Question Text</th><th>R/ U/ A</th><th>CO Cod e ITF305</th><th>Mark s</th></tr>
<tr><td>Q.4</td><td></td><td>Attempt any FOUR</td><td></td><td></td><td>08</td></tr>
<tr><td></td><td>a)</td><td>State the purpose of normalization.</td><td>R</td><td>4</td><td></td></tr>
<tr><td></td><td>b)</td><td>List properties of Boycee codd normal form.</td><td>R</td><td>4</td><td></td></tr>
<tr><td></td><td>c)</td><td>Draw state diagram of transaction.</td><td>R</td><td>5</td><td></td></tr>
<tr><td></td><td>d)</td><td>Define serializability.</td><td>R</td><td>5</td><td></td></tr>
<tr><td></td><td>e)</td><td>Define shared mode and exclusive mode lock.</td><td>R</td><td>5</td><td></td></tr>
<tr><td></td><td>f)</td><td>State various reasons of database failure.</td><td>R</td><td>5</td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Q.5</td><td></td><td>Attempt any FOUR</td><td></td><td></td><td>16</td></tr>
<tr><td></td><td>a)</td><td>Discuss the measures of cost.</td><td>U</td><td>5</td><td></td></tr>
<tr><td></td><td>b)</td><td>Explain database system recovery using check points</td><td>U</td><td>5</td><td></td></tr>
<tr><td></td><td>c)</td><td>Give example of two-phase locking protocol and explain.</td><td>A</td><td>5</td><td></td></tr>
<tr><td></td><td>d)</td><td>Compare BCNF & 3NF.</td><td>U</td><td>4</td><td></td></tr>
<tr><td></td><td>e)</td><td>Discuss immediate database modification.</td><td>U</td><td>5</td><td></td></tr>
<tr><td></td><td>f)</td><td>List and explain states in Query Processing.</td><td>U</td><td>5</td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Q.6</td><td></td><td>Attempt any FOUR</td><td></td><td></td><td>16</td></tr>
<tr><td></td><td>a)</td><td>Explain with example concurrent execution.</td><td>U</td><td>5</td><td></td></tr>
<tr><td></td><td>b)</td><td>Explain Lock-complexity matrix.</td><td>U</td><td>5</td><td></td></tr>
<tr><td></td><td>c)</td><td>List and explain AICD properties.</td><td>U</td><td>5</td><td></td></tr>
<tr><td></td><td>d)</td><td>List and explain classification of database failure.</td><td>U</td><td>5</td><td></td></tr>
<tr><td></td><td>e)</td><td>List all Functional dependencies satisfied by following relation.
<table>
<tr><th>A</th><th>B</th><th>c</th></tr>
<tr><td>a1</td><td>b1</td><td>c1</td></tr>
<tr><td>a1</td><td>b1</td><td>c2</td></tr>
<tr><td>a2</td><td>b1</td><td>c1</td></tr>
<tr><td>a2</td><td>b1</td><td>c3</td></tr>
</table></td><td>A</td><td>4</td><td></td></tr>
<tr><td></td><td>f)</td><td>Explain shared mode lock.</td><td></td><td></td><td></td></tr>
</table>

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ODD TERM END EXAM NOV./ DEC. -2017

EXAM SEAT NO. | | | | | | |

LEVEL : - **THIRD** PROGRAM : **INFORMATION TECHNOLOGY**
COURSE CODE :- **ITE306**
COURSE NAME :- **COMPUTER NETWORK**
MAX. MARKS : **80** TIME : **3 HRS.** DATE :- **20 / 11 / 2017**

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

Marks

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

a) What do you mean by passive network?

b) Define computer network.

c) Define multi point network.

d) What do you mean by active Hub?

e) Define Guided media with example.

f) Define sky propagation with diagram.

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

a) Explain Peer to Peer Network.

b) Explain Tree topology in detail.

c) Compare OSI & TCP/IP model.

d) What are the steps of finding spanning tree in Bridge?

e) Explain fiber optic cable with diagram.

f) Explain Radio wave in detail.

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

a) What are the applications of computer networks?

b) Explain centralized and distributed computing.

c) Explain Transparent Bridge.

d) Explain Wide Area Network (WAN) in detail.

e) Explain following terms i) Bridge ii) Router.

f) Define line of sight propagation with diagram.

P.T.O.

Q.4 Attempt any **FORU** (08)

a) State any two features of Token ring.

b) What is function of network layer?

c) What is role of BOOTP?

d) List protocols of application layer.

e) What is cryptography?

f) What is symmetric key cryptography?

Q.5 Attempt any **FOUR** (16)

a) Write a note on token bus, also state its advantages and disadvantages.

b) Explain 10 base 5 in detail.

c) Draw and explain TCP/IP protocol suite.

d) Compare TCP & UDP.

e) Draw and explain network security model.

f) Discuss active attacks.

Q.6 Attempt any **FOUR** (16)

a) Write a note on Ethernet IEEE 802.3.

b) Explain features of gigabit Ethernet.

c) Write a note on SMTP.

d) Discuss class full addressing in detail.

e) Explain various security services.

f) Explain substitution cipher technique with examples.

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ODD TERM END EXAM NOV. / DEC. -2017

EXAM SEAT NO. | | | | | | |

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

COURSE CODE :- **ITF303/ ITE303**

COURSE NAME :- **DATA COMMUNICATION**

MAX. MARKS : **80** TIME : **3 HRS.** DATE :- **02/ 12 / 2017**

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> Question No. R> Remembering, U> Understanding, A> Application.

QN	SQN	Question Text	R/U/A	CO Code ITF303	Marks
Q.1		Attempt any **FOUR**			**08**
	a)	Describe data representation.	U	1	
	b)	Define phase and frequency.	R	3	
	c)	What is Attenuation?	R	2	
	d)	State pulse code modulation.	U	3	
	e)	Classify digital transmission modes.	U	3	
	f)	State Bipolar – AMI	U	3	
Q.2		Attempt any **FOUR**			**16**
	a)	State the characteristics of data communication.	R	1	
	b)	Draw and describe TCP/IP Model.	R	1	
	c)	Explain analog signal with respect to wavelength, time and frequency domain.	U	1	
	d)	Describe transmission of digital signals.	R	2	
	e)	Explain the characteristics of line coding schemes.	R	3	
	f)	Draw and explain serial transmission modes.	U	3	
Q.3		Attempt any **FOUR**			**16**
	a)	Explain communication system components.	U	1	
	b)	Write note on data flow.	U	1	
	c)	Note down the applications of digital signals	A	2	
	d)	Explain transmission impairments with example.	A	2	
	e)	Write the applications of parallel transmission.	U	3	
	f)	Explain unipolar – NRZ line coding scheme with example.	A	3	

P.T.O.

QN	SQN	Question Text	R/U/A	CO Code ITF303	Marks
Q.4		Attempt any **FOUR**			**08**
	a)	Define single bit error.	U	5	
	b)	Enlist techniques of analog to analog conversion.	R	4	
	c)	Explain the term error control	U	6	
	d)	An analog signal carries 4 bits per signal element. If 1000 signal elements are sent per second, find the bit rate/	A	4	
	e)	What are aspects of digital to analog conversion?	R	4	
	f)	Enlist protocols of Noiseless channel and Noisy channel	R	6	
Q.5		Attempt any **FOUR**			**16**
	a)	Explain frequency shift keying with neat diagram.	U	4	
	b)	Explain phase modulation with neat diagram.	U	4	
	c)	Explain the procedure of error detection using simple parity check code.	A	5	
	d)	State Go back N Automatic Repeat Request protocol for noisy channel.	U	6	
	e)	Explain the term minimum hamming distance. Give example.	A	5	
	f)	Explain the procedure of error detection using cyclic redundancy check.	U	5	
Q.6		Attempt any **FOUR**			**16**
	a)	State property of linear block code.	R	5	
	b)	State property of cyclic code.	R	5	
	c)	Explain the term analog to analog conversion.	R	4	
	d)	How many sequence numbers are used to number the frames in stop and wait automatic repeat request protocol? Justify your answer.	A	6	
	e)	Define multiplexing. Enlist types of multiplexing.	R	6	
	f)	State framing and variable size framing.	R	6	

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GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.

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ODD TERM END EXAM NOV. / DEC. -2017

EXAM SEAT NO. | | | | | | |

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

COURSE CODE :- **ITF304 / ITE304**

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

MAX. MARKS : **80** TIME : **3 HRS.** DATE :- **04/ 12 / 2017**

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> Question No. R> Remembering, U> Understanding, A> Application.

QN	SQN	Question Text	R/ U/ A	CO Code **ITF304**	Marks
Q.1		Attempt any **FOUR**			**08**
	a)	State syntax of inline function.	R	1	
	b)	Enlist applications of OOP.	R	1	
	c)	State structure of simple C ++ program.	R	1	
	d)	Define Tokens and Keywords in C++.	R	1	
	e)	What is the use of default arguments in function?	R	2	
	f)	State general form of a member function definition outside the class.	R	2	
Q.2		Attempt any **FOUR**			**16**
	a)	Write a program for swapping of two characters.	A	1	
	b)	Explain working of function with respect to default argument and const argument.	U	2	
	c)	Describe constructor with its declaration.	U	2	
	d)	Write a program for employee class using parameterized constructor for basic-salary. Input data for one employee & display it.	A	2	
	e)	Write a program for student class which calculates percentage of three subjects and display data for five students using array of objects.	A	2	
	f)	Explain memory allocation of objects.	U	2	
Q.3		Attempt any **FOUR**			**16**
	a)	Write a program to overload function area to calculate area of circle, rectangle and triangle.	A	1	
	b)	Explain basic data types and derived data types in C++ (give examples)	U	1	
	c)	Explain dynamic initialization of objects using constructor.	U	2	
	d)	Write a program to show use of static member function. Write output.	A	2	
	e)	Write a program using class which takes time in hours and minuts for single object. Add time for two objects and display addition. (object as an function argument)	A	2	
	f)	Write a program to demonstrate use of copy constructor.	A	2	

P.T.O.

QN	SQN	Question Text	R/U/A	CO Code ITF304	Marks
Q.4		Attempt any **FOUR**			**08**
	a)	Define overloading.	U	3	
	b)	State need of virtual base class.	U	4	
	c)	What is use of abstract class?	U	4	
	d)	Define pointer.	U	5	
	e)	What is run time polymorphism?	U	5	
	f)	Enlist objects and functions for unformatted input and output	U	6	
Q.5		Attempt any **FOUR**			**16**
	a)	Explain the concept of pointer to object with example.	A	5	
	b)	Write a program to implement single inheritance.	A	4	
	c)	State any four rules of operator overloading.	R	3	
	d)	Write a program to overload '>' operator to compute length of two string.	A	3	
	e)	Explain different file modes.	U	6	
	f)	Explain following formatted I/O operations with example i) Width ( ) ii) Precision ( ).	U	6	
Q.6		Attempt any **TWO**			**16**
	a)	Explain three types of type conversion.	U	3	
	b)	Explain Hybrid Inheritance. Write a program to Implement Hybrid Inheritance.	A	4	
	c)	What is "this pointer" concept? Explain the concept of pointer to derived class object.	U	5	

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GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.

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ODD TERM END EXAM NOV. / DEC 2016

EXAM SEAT NO. | | | | | | |

LEVEL : - **FOURTH** PROGRAM : **INFORMATION TECHNOLOGY**

COURSE CODE :- **ITE405/IF305/IT403/6308**

COURSE NAME :- **LINUX**

MAX. MARKS : **80** TIME : **3 HRS.** DATE :- **25 / 11 / 2016**

Instruction :-

1) Answer to 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 Marks

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

a) What is mean by 'open source'?

b) Write partition names of linux.

c) How to check login session on linux?

d) List the compressing and decompressing commands.

e) Write the output of $ ls – l/lpr command.

f) State use of chown command.

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

a) Write note on Kernel & Shell.

b) Compare find and locate command with example.

c) Write a note on uses of rmdir and cd command with example.

d) Which command is used to change permissions of files or directory? Explain with example.

e) Describe hard Link and Soft Link.

f) Define SELinux & List users in SELinux.

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

a) Explain file system of linux with neat diagram.

b) How to install linux O.S.?

c) Explain CP & mv command with example.

d) Describe uses of ls command with example.

e) Explain data command with options.

f) Explain tools used in SELinux.

P.T.O.

Section – II	Marks

Q.4 Attempt any **FOUR** (08)

a) List commands used for printing documents.

b) List packages included in open office.

c) Define the term Shell.

d) Give structure of Shell command line.

e) List control structures in Shell script.

f) How to match string pattern in Shell script?

Q.5 Attempt any **FOUR** (16)

a) List & explain predefine variables in terms of Shell programming.

b) Explain how to run script from current directory with example.

c) Explain use of following :- i) The? special character. ii) The * special character.

d) How we can manipulate images with GIMP tool? Explain in detail.

e) Explain the term RAID in detail.

f) Which commands are used for checking system specifiction? Explain in detail.

Q.6 Attempt any **FOUR** (16)

a) Describe root account and Fdisk utility of Linux.

b) How to mount device on Linux OS? Explain with use of commands.

c) Enlist different types of editors? Explain any one in detail.

d) List and explain bash Shell features.

e) List and explain arithmatic evolution in Shell script.

f) How to declare and access array variables in Shell script? Explain in detail.

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GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.

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ODD TERM END EXAM NOV./ DEC -2016

EXAM SEAT NO. | | | | | | |

LEVEL : - **FIRST** PROGRAM : **INFORMATION TECHNOLOGY**

COURSE CODE :- **ITE108/IF104/IT113**

COURSE NAME :- **BASIC ELECTRONICS**

MAX. MARKS : **80** TIME : **3 HRS.** DATE: - **03 / 12 / 2016**

Instruction:-

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

Marks

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

a) Define intrinsic semiconductor. Give two examples.

b) Classify filters. Define filter.

c) Give construction and symbol of PNP and NPN transistor.

d) Draw PN junction diode construction, showing depletion region. Draw symbol of PN diode.

e) List the types of configurations in transistor. Draw any one of them.

f) Define i) Cut off region. ii) Saturation region.

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

a) Draw effect of forward biasing on depletion region and explain.

b) Explain working of centre tapped full wave rectifier with 'C' filter with help of circuit diagram.

c) List biasing methods of transistor and give advantages of each.

d) Draw V-I characteristics of P-N diode and explain.

e) Compare half wave rectifier and centre tapped full wave rectifier (4 points)

f) Define i) AC load line ii) DC Load line. iii) Q point iv) Stability.

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

a) Draw V-I characteristics of zener diode and explain.

b) Define i) Ripple factor ii) Rectifier Efficiency.

c) Draw output characterstics of NPN transistor in common emitter configuration and explain.

d) Give operating principle of zener diode. Give two applications of zener diode.

e) Explain collector to base bias in transistor.

f) Define i) Dopping ii) Insulator iii) Extrinsic semiconductor. iv) Semiconductor.

(P.T.O.)

Q.4 Attempt any **FOUR** (08)

a) Define i) Gain ii) Bandwidth

b) State different types of multistage amplifier.

c) Draw schematic symbol of E-MOSFET.

d) Draw construction diagram of P-channel JFET.

e) Give the classification of FET.

f) Define i) Line regulation ii) Load regulation.

Q.5 Attempt any **FOUR** (16)

a) Draw and explain signle stage common emitter amplifier.

b) Draw circuit diagram of RC coupled amplifier. State its any two applications.

c) Draw and explain construction of N-channel JFET.

d) Describe working of n-channel D-MOSFET with diagram.

e) Draw block diagram of DC regulated power supply and explain function of each block with waveform.

f) Construct a dual power supply capable of giving ±12V using 78 XX and 79XX series IC's.

Q.6 Attempt any **FOUR** (16)

a) Draw frequency response of single stage amplifier. Why gain falling at high frequency?

b) Compare BJT and JFET (any 4 points)

c) Draw drain characteristics and transfer characteristics of JFET.

d) Define Regulator. Explain the need of regulator.

e) Draw circuit of transistorised shunt voltage regulator and explain its working.

f) With the help of neat circuit diagram explain the working of zener diode as voltage regulator.

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GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.

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ODD TERM END EXAM NOV. / DEC 2016

EXAM SEAT NO. | | | | | | |

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

COURSE CODE :- **ITE507/IF402/ITE405/6403**

COURSE NAME :- **MOBILE COMMUNICATION**

MAX. MARKS : **80** TIME : **3 HRS.** DATE :- **01 / 12 / 2016**

Instruction :-

1) Answer to 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 Marks

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

a) Define Antena.

b) Define SDMA.

c) Define short term and long term fading.

d) Draw neat-labelled diagram of slotted Aloha.

e) Define supplementary services of GSM.

f) Draw GSM architecture.

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

a) Write a note on location dependant services.

b) Write a note on cellular system.

c) Explain Mobile services in GSM.

d) Explain TDM.

e) Explain hidden and exposed terminals.

f) Write a note on 3G Network system architecture.

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

a) List and explain mobile and wireless devices.

b) Write a note on signal propogation with neat diagram.

c) Write a note on global system for mobile communication. (GSM).

d) Explain spread spectrum technique.

e) Explain frequency division multiple access (FDMA)

f) Explain Teleservices in GSM.

(P.T.O.)

Section – II	Marks

Q.4 Attempt any **FOUR** (08)

a) Write Advantages of infra-red transmission.

b) State use of foreign agent (FA) in mobile IP.

c) Draw diagram of basic DHCP configuration.

d) List advantages of I-TCP (Indirect-TCP)

e) Define slow start of traditional TCP.

f) Draw WAP architecture.

Q.5 Attempt any **FOUR** (16)

a) Explain user secnarious for wireless personal area networks.

b) Describe bluetooth piconet with diagram.

c) Explain IP packet delivery.

d) Write a note on quick 'solution' of mobile IP.

e) Explain Mobile- TCP.

f) Write a note on coda file system.

Q.6 Attempt any **TWO** (16)

a) Explain infrastructure and ad-hoc networks with diagram.

b) Describe Snooping-TCP with neat diagram.

c) Write a note on security issues in mobile computing.

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ODD TERM END EXAM NOV-DEC -2016

EXAM SEAT NO. | | | | | | |

LEVEL: **THIRD.** PROGRAM: **INFORMATION TECHNOLOGY.**

COURSE CODE: **ITE304/IF204/IT204.** COURSE NAME: **OOP USING C++**

MAX. MARKS: **80** TIME: **3 HRS.** DATE: **28 /11/2016.**

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.

Marks

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

a) What is meant by OOP?
b) Enlist any four applications of OOP.
c) What is meant by inline function?
d) Define function overloading in C++.
e) Define class with syntax.
f) Define static member function.

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

a) Explain identical structure of C++ program.
b) What is function prototype? Explain with one example.
c) Explain array of object with example.
d) Explain the concept of friend function.
e) State any four characteristics of constructor.
f) Explain Parameterized Constructers with example.

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

a) Describe any four basic concepts of OOP.
b) Explain default arguments in C++ with one example.
c) Enlist different ways we can define member function in class. Also give its Syntax.
d) Write a program to declare a class 'Book 'having data members as book-name , price and number of pages. Accept this data for two objects & display name of book having greater price.
e) What is copy constructors? Explain with one example.
f) Explain the concept of constructor with default arguments.

Q.4 Attempt any **FOUR** **(08)**

a) Define-operator overloading.
b) List various modes opening a file.
c) How will you detect end-of-file?
d) What does 'this' pointer point to?

P.T.O.

e) What is the meaning of following code?

```
int a [10];
int *p;
p=& a [0];
p++;
```

f) Explain the term- runtime polymorphism.

Q.5 Attempt any **FOUR** **(16)**

a) Explain concept of virtual function.

b) Write and explain syntax of single inheritance.

c) Explain overloading of binary operators through member functions with example.

d) How do properties of following 2 derived classes differ?

1) Class D : protected B {....}

2) Class A :public C {....}

e) Write a C++ program to overload `+` operator for adding 2 Date class objects using friend function.(Assume necessary data members)

f) Explain two ways of opening a file.

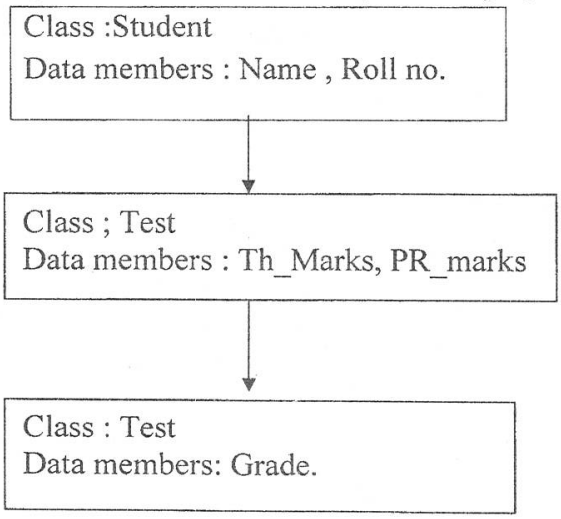
Q.6 Attempt any **TWO.** **(16)**

a) Explain rules for overloading operators.

b) 1) Explain pointer to object with example (4 marks.)

2) Write a C++ program to open a text file and write 5 names in it.(04 marks)

c) Identify following inheritance & write a C++ program to implement it. Assume necessary member functions to input & display members.



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ODD TERM END EXAM NOV./ DEC -2016
EXAM SEAT NO. | | | | | | |

LEVEL : - THIRD PROGRAM : INFORMATION TECHNOLOGY
COURSE CODE :- ITE306/IF207
COURSE NAME :- COMPUTER NETWORK
MAX. MARKS : 80 TIME : 3 HRS. DATE: - 24 / 11 / 2016

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

Marks

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

a) What do you mean by Active Network?
b) Enlist different Network services.
c) Draw and explain Bus topology.
d) Draw ATM Cell format and explain.
e) Enlist different applications of twisted pair cables.
f) What is multimode fiber optic cable?

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

a) Explain Client server Network.
b) Explain Metropolitan Area Network (MAN) in detail.
c) Explain Architecture of ATM with its virtual connections.
d) Explain cloud computing in detail.
e) Explain coaxial cable with diagram.
f) What are the advantages of fiber optic cable?

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

a) Explain Centralizd and Distributed Computing.
b) What are the advantages of Computer network?
c) Explain Start topology in detail.
d) Explain OSI Reference Model.
e) Explain Internet layer and Network Access Layer of TCP/IP Model.
f) Explain the term Infrared in detail.

[P.T.O.]

Q.4 Attempt any **FOUR** (08)

a) What are the goals of Fast Ethernet?

b) List down the protocols available at network layer.

c) What is the use of address resolution protocol?

d) What is Netid and Hostid?

e) What is symmetric key cryptography?

f) What is substitution cipher?

Q.5 Attempt any **FOUR** (16)

a) Draw and explain ethernet frame format.

b) Explain 10 BaseT & 10 BaseF with diagram.

c) What is classfull addressing? Explain.

d) Explain any two applications layer protocols.

e) What are the components of cryptography? Explain.

f) Explain RSA.

Q.6 Attempt any **FOUR** (16)

a) Write a short note on Gigabit Ethernet.

b) Explain Token Ring with neat diagram.

c) What are the functions of ICMP & IGMP protocol?

d) What is subnetting? Explain.

e) What are the security services?

f) Explain shift cipher with example

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ODD TERM END EXAM NOV-DEC -2016

EXAM SEAT NO. | | | | | | |

LEVEL: **FIRST** PROGRAM: **INFORMATION TECHNOLOGY**

COURSE CODE: **ITE104/IF105/IT112** COURSE NAME: **'C' PROGRAMMING**

MAX. MARKS: **80** TIME: **3 HRS.** DATE: **23/11/2016**

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) Enlist relational operators in C.

b) Define – variable & constant.

c) State benefits of user- defined function.

d) What is entry- controlled loop?

e) How is a variable declared in C? Give example.

f) State rules for specifying name of a variable in C.

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

a) Write and explain syntax of else_if ladder.

b) Explain use of break statement with example.

c) i) What is recursion?

ii) What is a formal parameter?

d) Write a C program to calculate area of circle Radius is entered by user.

e) Explain primary data types in C with example.

f) 1) Write C code for following expression (02)

i) area= $\pi r^2 + 2\pi r h$

ii) P=(Q+R) (D+E)/S

2) Write output of following program- Justify your answer. (02)

```
main ( )
 {
  int a=100, b=200;
  pritf("%d",(a>b)? a:b);
 }
```

P.T.O

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

a) i) Explain syntax & use of i) scanf ( ) ii) putchar ( ) (04)

ii) Write a C program to implement max( ) function to display maximum of 2 numbers entered by user call function from main ( ). (04)

b) Explain syntax for defining function with example.

c) i) Explain syntax of 'while' statement. Draw flowchart of while. (04)

ii) Write a program to calculate factorial of a number entered by user. (04)

Q.4 Attempt any **FOUR** **(08)**

a) Enlist types of arrays.

b) Write general syntax for declaring one-dimensional array.

c) Explain declaration of string variables.

d) With syntax explain use of strcpy ( ) function.

e) Give the meaning of: int *ptr.

f) What is pointer?

Q.5 Attempt any **FOUR** **(16)**

a) Write a program to copy contents of one array into another array.

b) Explain initialization of two dimensional array with example.

c) Explain strcpy ( ) function in detail with one example.

d) Write a program to print the string in reverse order.

e) Define structure & give syntax for declaring structure.

f) Explain how pointers are accessed.

Q.6 Attempt any **FOUR** **(16)**

a) Write a 'C' program for addition of two 3 x 3 matrix.

b) Declare one-dimensional 5 elements integer array & initialize all values.

c) Write a program to demonstrate four string handling functions.

d) Define string & explain how declare & initialize string variables.

e) Write general syntax for structure & define a structure student having member variables as rollno, name, & class.

f) Explain the concept of pointer arithmetic operations with example.

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ODD TERM END EXAM NOV-DEC -2016

EXAM SEAT NO. | | | | | | |

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

COURSE CODE: **ITE313** COURSE NAME: **COMPUTER GRAPHICS**

MAX. MARKS: **80** TIME: **3 HRS.** DATE: **30/11/2016**

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.

Marks

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

a) Define – scaling. Write 2D scaling matrix.

b) Enlist graphics file formats (any four)

c) What is principle behind boundary fill algorithm?

d) Which limitations of DDA line generation algorithm are overcome in Bresenham's line generation algorithm?

e) Translate a polygon with coordinates A (2, 5), B (7, 10) and C (10, 2) by 3 units in x direction and 4 units in y direction. Calculate resultant coordinates.

f) Which information is contained in display file?

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

a) List and explain applications of computer graphics.

b) Explain 3D rotation with example.

c) What are steps to rotate an object about an arbitrary axis?

d) How does DDA algorithm for line drawing work?

e) What is importance of homogenous coordinate matrix?

f) To draw a line from point (5, 5) to (13, 9) using Bresenham's algorithm, calculate intermediate pixel positions.

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

a) Write and explain scan line conversion algorithm for polygon filling.

P.T.O

b) Describe steps to rotate an object about an arbitrary point with example.

c) i) Explain working of vector scan display. (04 Marks)

ii) Write & explain syntax of following C Graphics functions. (04 Marks)

i) drawarc ( )

ii) drawpoly ( )

Q.4 Attempt any **FOUR** **(08)**

a) What is line clipping?

b) What is viewing transformation?

c) Define windowing.

d) State any two disadvantages of generating arc using DDA algorithm.

e) Write any two advantages of Bezier curve.

f) What is GUJ?

Q.5 Attempt any **FOUR** **(16)**

a) Explain midpoint subdivision algorithm.

b) Explain how visibility of line is decided using region codes in Cohen-Sutherland line clipping algorithm.

c) Explain normalization transformation.

d) With neat diagram explain B-spline curve.

e) What are advantages for random scan?

f) Explain need for graphics standard.

Q.6 Attempt any **TWO** **(16)**

a) Explain Cohen- Sutherland line clipping algorithm.

b) Explain DDA algorithm for arc generation.

c) a) Compare between roster scan & random scan display. (04 Marks)

b) What are advantages of graphics standard? (04 Marks)

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ODD TERM END EXAM NOV./ DEC -2016
EXAM SEAT NO. | | | | | | |

LEVEL : - THIRD PROGRAM : INFORMATION TECHNOLOGY
COURSE CODE :- ITE307/IF208/IT208/6208
COURSE NAME :- OPERATING SYSTEM
MAX. MARKS : 80 TIME : 3 HRS. DATE: - 05 / 12 / 2016

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

Marks

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

a) Define operating system.

b) State the function of operating system in error detection.

c) What is context switch?

d) Enlist categories of system programs.

e) Explain the term – I/O bound process.

f) Draw a neat diagram to show queaeing diagram representation of process scheduling.

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

a) What is role of operating system in I/O management and main memory management?

b) Explain features of parallel systems.

c) With neat diagram explain process state transition.

d) What are advantages and limitations of layered operating system structure?

e) Compare between batch systems and multiprogrammed systems.

f) Explain MS DOS layer structure with neat diagram.

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

a) i) Which information is stored in process control block? (04)

ii) Explain the process of system boot. (04)

b) i) List and explain system calls related to file management. (04)

ii) Explain process termination. (04)

c) Explain advantages of distributed systems.

(P.T.O.)

Q.4 Attempt any **FOUR** (08)

a) What are the basic memory management techniques?

b) Define i) throughput ii) turnaround time.

c) State any 4 characteristics of I/O devices.

d) Define-maskable and non-maskable interrupt.

e) What is file? State its types.

f) What are different methods of file access?

Q.5 Attempt any **FOUR** (16)

a) Explain the structure of file and directory in brief.

b) Explain polling.

c) Explain swapping in details.

d) List scheduling algorithms. Explain any two with example.

e) Explain concept of virtual memory.

f) Explain I/O burst and CPU burst cycle.

Q.6 Attempt any **FOUR** (16)

a) What is deadlock? Explain necessary condition for deadlock.

b) Write note on DMA.

c) Write note on segmentation.

d) State the rules for naming files. How file security is achieved?

e) Explain caching.

f) State the difference between pre-emptive and non pre-emptive scheduling.

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ODD TERM END EXAM NOV./ DEC -2016

EXAM SEAT NO. | | | | | | |

LEVEL : - **FIRST** PROGRAM : **INFORMATION TECHNOLOGY**

COURSE CODE :- **ITEF104**

COURSE NAME :- **BASIC ELECTRONICS**

MAX. MARKS : **40** TIME : **2 HRS.** DATE: - **03 / 12 / 2016**

Instruction:-

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

Marks

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

a) Draw the symbol of P-N junction diode and zener diode.

b) What is the need of filters?

c) Define resistor. State its types.

d) Draw the neat diagram of single stage amplifier.

e) Compare between insulator and conductor (any 2 points)

f) State the types of transistor configurations.

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

a) Draw and explain the construction of carbon film resistor.

b) Explain the formation of N-type extrinsic semiconductors.

c) With neat diagram, explain the operation of N-P-N transistor.

d) With neat diagram, explain aluminium electrolytic capacitor.

e) Explain series inductor filter with suitable diagram.

f) With neat block diagram, explain regulated power supply

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

a) With neat diagram, explain operation of half wave rectifier.

b) Compare between air core and iron core inductor. (any 4 points)

c) Explain how transistor acts as a switch.

d) Write the colour coding of following resistors.

i) 4.7 kΩ ± 5% ii) 10Ω ± 10% iii) 33 kΩ ± 10% iv) 3.3 kΩ ± 5%

e) Draw and explain V-I characteristics of zener diode.

f) Explain with neat diagram transistor shunt voltage regulator.

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ODD TERM END EXAM NOV. / DEC 2016

EXAM SEAT NO. | | | | | | |

LEVEL : - **FOURTH** PROGRAM : **INFORMATION TECHNOLOGY**

COURSE CODE :- ITE402/IF302/IT302

COURSE NAME :- **SOFTWARE ENGINEERING**

MAX. MARKS : **80** TIME : **3 HRS.** DATE :- **22 / 11 / 2016**

Instruction :-

1) Answer to 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 Marks

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

a) List evolving role of software.

b) Define software Engineering.

c) State problems of waterfall model.

d) What is mean by interface and system requirements?

e) List special features of function count.

f) What is risk in softwre risk management?

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

a) Explain the changing nature of software.

b) Explain Rapid application development (RAD) model diagram.

c) Describe spiral model with diagram.

d) Write a note on functional and non-functional requirements.

e) Describe data dictionaries.

f) Explain activities during software project planning.

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

a) Describe program VS software.

b) Explain build and fix model with diagram.

c) Explain crucial steps for requirements engineering.

d) Write a note on brain storming in requirements elicitation.

e) Write a note on cost estimation.

f) Explain the principle of Albrecht function point analysis.

[P.T.O.]

	Section – II	Marks

Q.4 Attempt any **FOUR** (08)

a) What is design?

b) What is code efficiency?

c) List levels of testing.

d) What is SQA?

e) What is Bug?

f) List the categories of maintenance.

Q.5 Attempt any **FOUR** (16)

a) Explain Bottom-Up and Top-down design strategy.

b) Explain modularity.

c) Explain i) Unit Testing. ii) Integration Testing.

d) Explain Test case and Test suit in detail.

e) What is importance of program understanding in Maintenance process?

f) What is modefied programTesting?

Q.6 Attempt any **FOUR** (16)

a) What is Hybrid design strategy?

b) Explain objective of design.

c) What are Software Quality Activities?

d) Explain Acceptance Testing in detail.

e) What is Maintability? Why it is required?

f) What is Ripple Effect?

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ODD TERM END EXAM NOV./ DEC -2016

EXAM SEAT NO. | | | | | | |

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

COURSE CODE :- **ITE310/IF209/IT209**

COURSE NAME :- **SYSTEM PROGRAMMING**

MAX. MARKS : **80** TIME : **3 HRS.** DATE: - **02 / 12 / 2016**

Instruction:-

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

Marks

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

a) Define compiler.

b) Draw neat diagram to show front end of a toy compiler.

c) Distinguish between multiprocessing and multiprogramming.

d) What is function of loader?

e) What is function of Assembler?

f) What is positional parameter? Give example.

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

a) What is formal system?

b) Define IR. Write it's significance.

c) What are features of assembly language?

d) Explain classification of grammer.

e) Explain the pass structure of assembler.

f) Explain flow control during expansion in macro expansion.

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

a) What are the functions and facilities provided by operating system?

b) Difference between program interpretation and program execution.

c) Explain types of assembly language statement with example.

d) Describe the functions performed by back end of toy compiler.

e) What is forward reference? How problem of forward referenced is resolved in single pass assemblers?

f) Explain lexical expansion of macro with example.

(P.T.O.)

Q.4 Attempt any **FOUR** (08)

a) Define impure interpreter.

b) What are the limitations of static memory allocation?

c) Define self relockting programmes.

d) What are the components of object module?

e) List phases of program development.

f) Define feature of word processor.

Q.5 Attempt any **FOUR** (16)

a) Explain parameter passing mechanisms.

b) Describe role of compiler in compilation of function call.

c) Explain uses of interpreter.

d) How does linker resolve external references in a program?

e) Which software tools are used in program design and coding?

f) Explain various ways of implementing command dialog.

Q.6 Attempt any **FOUR** (16)

a) Describe programming environment.

b) Explain structure of user interface with neat sketch.

c) Explain non-relocating program and Binary Program.

d) Explain translated link and load time address.

e) How dynamic memory allocation is implemented? Write its advantages.

f) List and explain components involved in interpreter?

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ODD TERM END EXAM NOV-DEC -2016

EXAM SEAT NO. | | | | | | |

LEVEL: FIFTH | PROGRAM: INFORMATION TECHNOLOGY

COURSE CODE: ITE503/IF405/IT408 | COURSE NAME: MANAGEMENT OF INFORMATION SYSTEM

MAX. MARKS: 80 | TIME: 3 HRS. | DATE: 24/11/2016

Instruction:-

1) Answer to two sections must be written in separate section answer book provided.
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.

Section – I **Marks**

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

a) Draw the conceptual view of MIS?

b) Define MIS

c) What is product strategy?

d) What are the types of rationality?

e) List down the classes of system

f) Draw the general model of MIS.

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

a) Write a short note on MIS & the user.

b) Explain the concept of corporate planning.

c) Explain any four dimensions of planning.

d) What is organizational decision making? Explain with example.

e) Write note on Herbert Simon model?

f) Explain the system concept with neat labelled diagram.

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

a) Explain physical view of MIS.

b) What are the characteristics of system approach?

c) Which are the factors affecting tools of planning? Explain any two factors.

d) Explain dimensions used for measuring the information quality.

e) Explain any two methods for deciding decision alternatives.

f) Write a note on general model of MIS.

P.T.O

Section – II

Marks

Q.4 Attempt any **FOUR** **(08)**

a) What is asking or interviewing?

b) What are the approaches to MIS development?

c) Draw the diagram of system engineering scope.

d) What are the basic elements of business process?

e) List down the inputs for personnel management

f) What controls are achieved in personnel management?

Q.5 Attempt any **FOUR** **(16)**

a) What are the contents of MIS plan? Explain.

b) What delays in business process? Explain.

c) Write a short note on relevance of information technology.

d) Explain transaction processing in information system.

e) Write a short note on TQM of information system.

f) Explain material management in detail.

Q.6 Attempt any **FOUR** **(16)**

a) What are the features contributing to failures?

b) Write short note on MIS & BPR.

c) What is business process re-engineering? Explain.

d) Write short note on human factor & user interface.

e) What is data processing in information system?

f) Explain marketing management in detail?

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GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.

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ODD TERM END EXAM NOV./ DEC -2016

EXAM SEAT NO. | | | | | | |

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

COURSE CODE :- **ITE303**

COURSE NAME :- **DATA COMMUNICATION**

MAX. MARKS : **80** TIME : **3 HRS.** DATE: - **24 / 11 / 2016**

Instruction:-

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

Marks

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

a) Draw diagram to show components of Data communication.

b) Enlist various Forms of data representation.

c) What are the causes of noise in signal?

d) Explain the term periodic and non-periodic signal.

e) Explain the term Digital to Digital conversion.

f) Enlist various line coding schemes.

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

a) Compare between serial and parallel transmission.

b) Describe delta modulation with neat diagram.

c) Explain transmission impairments.

d) Explain Nyquist bit rate formula for noiseless channel.

e) State and explain various components of data communication.

f) Explain the terms:- Simplex, half duplex and full duplex.

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

a) Explain Features of LAN & MAN.

b) Explain Shannon capacity for noisy channel.

c) Explain characteristics of sine wave with neat diagram.

d) Explain pulse code modulation with neat diagram.

e) Explain synchronous transmission.

f) Explain asynchronous transmission.

P.T.O.

Q.4 Attempt any **FOUR** (08)

a) Explain the term- analog to analog conversion.

b) Compare between single bit error and burst error.

c) What is role of carrier signal in analog transmission?

d) What is forward error correction?

e) An analog signal carries 4 bits per signal element. If 1000 signal elements are sent per second, find bit rate.

f) What is function of data link layer in flow control?

Q.5 Attempt any **FOUR** (16)

a) Explain Amplitude-shift-keying with neat diagram.

b) i) State property of linear block code. (02)

ii) What is minimum hamming distance? Give example. (02)

c) Describe error detection using checksum with example.

d) Why is sequence number necessary for a frame for noisy channels?

e) In a communication sysem using CRC for error detection, given a data word 1001 and divisor 1011.

i) Show generation of codeword at sender site

ii) Show checking of codeword at receiver site.

f) What is role of sliding window in Go-back-N Automatic Repeat Request protocol?

Q.6 Attempt any **TWO** (16)

a) Describe stop-and-wait protocol for a noiseless channel.

b) i) Explain frequency modulation with neat diagram. (04)

ii) With neat diagram, explain synchronous Time division multiplexing. (04)

c) Describe error detection using simple parity check code. Give example.

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ODD TERM END EXAM NOV. / DEC 2016

EXAM SEAT NO. | | | | | | |

LEVEL : - **FIFTH** PROGRAM : **INFORMATION TECHNOLOGY**
COURSE CODE :- **ITE504**
COURSE NAME :- **MULTIMEDIA TECH.**
MAX. MARKS : **80** TIME : **3 HRS.** DATE :- **19 / 11 / 2016**

Instruction :-
1) Answer to 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

Marks

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

a) What is video conferencing?

b) List any four audio file formats used in multimedia.

c) What are trimming and splicing?

d) What is extrude and lathing effect?

e) What is the principle of Animation?

f) Write any two features provided by AVI.

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

a) Write a short note on messaging and chatting.

b) Differentiate between MIDI Audio and Digital Audio (any four points)

c) Write a short note on Bitmap file format.

d) Define the term 3D drawing and rendering.

e) Explain the computer Animation technique.

f) How the Quick Time is made?

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

a) Explain the use of multimedia in business and school.

b) What are the advantages of MIDI audio?

c) Write the difference between vector-Drawn and Bitmaps.

d) What are the steps required for shooting and editing videos?

e) What is MPEG format?

f) What are the features provided by painting and drawing tools?

[P.T.O.]

Section – II	Marks

Q.4 Attempt any **FOUR** (08)

a) What is computer based training?

b) List down any two problems of multimedia in training.

c) What are the cost benefits of multimedia in training?

d) What is on-demand information?

e) Define object technology.

f) List two different approches to binding of messages to method.

Q.5 Attempt any **FOUR** (16)

a) What are the human factors on multimedia applications?

b) Write a note on Kiosks.

c) Write a note on tools for multimedia objects.

d) Explain object oriented database.

e) Explain methods of Licensing.

f) What are the actions taken by manager to avoid having to deal with third party copyright owner?

Q.6 Attempt any **TWO** (16)

a) Explain multimedia on Network.

b) Write a note on multimedia data management.

c) Explain the following term i) Copyright ii) Electronic trading.

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ODD TERM END EXAM NOV. / DEC 2016

EXAM SEAT NO. | | | | | | |

LEVEL : - **FOURTH** PROGRAM : **INFORMATION TECHNOLOGY**

COURSE CODE :- **ITE406/IF306/IT402/6305**

COURSE NAME :- **JAVA PROGRAMMING**

MAX. MARKS : **80** TIME : **3 HRS.** DATE :- **15 / 11 / 2016**

Instruction :-

1) Answer to 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 Marks

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

a) Why is Java known as platform independent and portable language?

b) What is use of conditional operator? Give example.

c) State any two differences between class and interface.

d) What is a vector? How is it different from array?

e) When do we declare a method or class as 'final'?

f) How does Java differ from C++? (any four points)

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

a) Explain use of labelled break statement with example.

b) How will you add interface to a package?

c) i) Explain the term-static member. (02)

ii) What does finalize ( ) function do? (02)

d) Explain how classes in Java system packages can be accessed.

e) How are one dimentional arrays handled in Java? Give example.

f) What is scope of variable that is declared as i) Protected ii) Private protected.

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

a) i) Write a Java program to display sum of all odd numbers between 1 and 100. (04)

ii) Write a Java program to overload 'area ( )' method to calculate area of rectangle, circle and triangle. (04)

b) Explain steps to create a user defined package with example.

c) i) Explain syntax to define interface with example. (04)

ii) Write a program to sort an array of strings in alphabetical order. (04)

[P.T.O.]

Q.4 Attempt any **FOUR** (08)

a) List various Windows events.

b) What is benefit of Adapter Class?

c) What is use of finally statement?

d) What are advantages of Exception?

e) Explain function to draw an ellipse.

f) Explain syntax of draw roundRect ( ) method of graphics class.

Q.5 Attempt any **FOUR** (16)

a) Explain syntax of following with example

i) drawLine ii) drawRect iii) fillRect iv) drawArc.

b) Explain various attributes of <APPLET> tag.

c) Write a simple program to display welcome message on applet.

d) Explain the following methods related to thread i) Wait ( ) ii) notify( ).

e) Explain any four methods of checkBox class.

f) Explain role of event listener interface in handling events in Java.

Q.6 Attempt any **FOUR** (16)

a) Write a Java program to demonstrate use of WindowListener interface.

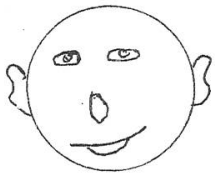
b) Explain how will you display menubar on frame with suitable example.

c) How will you create your own exception ? Explain with example.

d) Explain steps in building and executing an applet. Give example.

e) Write an applet to accept a username in the form of parameter and print Hello< usename>

f) Write a program to produce following output.



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ODD TERM END EXAM NOV/DEC 2016

EXAM SEAT NO. | | | | | | |

LEVEL : - **FOURTH** PROGRAM : **INFORMATION TECHNOLOGY**

COURSE CODE :- **ITE403/IF303/IT303**

COURSE NAME :- **DATA STRUCTURE**

MAX. MARKS : **80** TIME : **3 HRS.** DATE :- **18 / 12 / 2016**

Instruction :-

1) Answer to 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 o request.
6) Assume additional suitable data necessary.
7) Use of Mobile is strictly prohibited.

Section – I Marks

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

a) Define the term Big O.

b) What do you mean by linear data structure?

c) Explain the term sorting.

d) Define stack.

e) Convert following expression into PREFIX form (A+B ^D) / (E-F) +G.

f) Enlist basic operations on Queue.

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

a) Explain various operations on Data structure.

b) Consider the integer array 99 88 77 11 22 44 33 66 55 using binary search technique. Find position i) Data = 88 ii) Data = 89.

c) Write a C program to sort an integer array to implement linear search.

d) Explain representation of stack through array.

e) Explain the concept of recursion with example.

f) Explain FIFO structure of Queue with example.

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

a) Define complexity and its type.

b) Explain selection sort technique with algorithm and example.

c) Explain binary search technique algorithm and example.

d) Enlist application of stack and explain any one.

e) Explain the concept of priority Queue with example

f) Explain input restricted D queue with example

[P.T.O.]

Section – II Marks

Q.4 Attempt any **FOUR** (08)

a) Define circular linked list.

b) What is mean by descendent and ancestor of tree?

c) Define vertices and edges of graph.

d) Explain the term adjancency matrix.

e) What is use of hashing?

f) List features of hashing function.

Q.5 Attempt any **FOUR** (16)

a) State & explain purpose of doubly linked list.

b) Write algorithm for searching and insertion on linear linked list.

c) Explain operations of binary tree.

d) Write a note on multiway tree.

e) Explain mid-square and division method of hash function.

f) Write a C/CPP program to add, search and delete using any hash function.

Q.6 Attempt any **TWO** (16)

a) Write a C/CPP program that implements operations of Queue using linked list.

b) Explain following terminology related to tree

i) leaf node ii) height of tree iii) degree iv) level of node.

c) Write a note Depth in search and Breadth first search with example.

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EXAM SEAT NO. | | | | | | |

LEVEL : - **FOURTH** PROGRAM : **INFORMATION TECHNOLOGY**
COURSE CODE :- **ITE404/IF304/IT305**
COURSE NAME :- **WEB TECHNOLOGY**
MAX. MARKS : **80** TIME : **3 HRS.** DATE :- **19/ 11 / 2016**

Instruction :-
1) Answer to 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

Marks

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

a) List properties and methods of errors collection.

b) What is difference between session and application object?

c) State importance of web-config file.

d) Which information is contained in connection string?

e) How will you initialize session variable? Give example.

f) What are Remote Data Objects used for?

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

a) What is difference between ASP and ASP.Net?

b) List and explain any four properties of Textbox control.

c) Explain steps to connect to database using system DSN.

d) Explain use of following methods of server object with example

i) Execute ( ) ii) Transfer ( ).

e) What are advantages and disadvantages of cookies?

f) Explain syntax of open ( ) method of connection object.

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

a) i) Write ASP code to wirte cookies on client computer. (04)
ii) Compare between ADO and ADO.Net. (04)

b) Explain common events of session and application object.

c) Explain features of ASP.Net IDE.

[P.T.O.]

Section – II	Marks

Q.4 Attempt any **FOUR** (08)

a) What is dataset?

b) Enlist types of security.

c) What is Authentication?

d) What do you mean by principal object?

e) What is XML?

f) What is XML parser?

Q.5 Attempt any **FOUR** (16)

a) Write down advantages and disadvantages of XML.

b) Explain windows based Authentication.

c) Explain form based Authentication using a Database.

d) Write a procedure for creating an application which sends email.

e) Write a program to bind data to data grid view by using data adapter.

f) State the purpose of Data Reader Control. Explain it using ASP.Net.

Q.6 Attempt any **FOUR** (16)

a) Write down steps for manipulating database using ASP.Net using MS Access.

b) Explain web config file in detail.

c) Explain transaction is ASP.Net.

d) What is Imperative and Directive check in Role Base security?

e) Why XML has been used for development?

f) Explain XML as Meta Language.

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ODD TERM END EXAM NOV./ DEC -2016

EXAM SEAT NO. | | | | | | |

LEVEL : - **THIRD** PROGRAM : **INFORMATION TECHNOLOGY**
COURSE CODE :- **ITE308/IF212/IT212**
COURSE NAME :- **COMPUTER ARCHITECTURE & MAINTENANCE**
MAX. MARKS : **80** TIME : **3 HRS.** DATE: - **18 / 11 / 2016**

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

Marks

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

a) Enlist four steps of boot process.

b) State the use of HIM EM.SYS file.

c) Write difference between SIMM & DIMM.

d) Enlist any four components mounted on system board.

e) Define firmware.

f) List any four input devices located at the back of CPU.

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

a) Explain hardware inside the cabinet of computer system with diagram

b) Explain primary and secondary storage devices in brief.

c) Explain boot process with neat diagram.

d) Describe use of I/O addresses and memory addresses.

e) Explain CPU slots and sockets.

f) Explain types of system boards.

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

a) Explain following components i) ROM BIOS ii) flash ROM.

b) Explain CMOS settings and its purpose.

c) Explain Hard-disk subsystem.

d) Describe following entities i) 8-bit ISA bus ii) IRQ (Interrupt Request Number)

e) Describe physical memory in detail.

f) Explain following terms i) Virtual memory ii) RAM Drives.

P.T.O

Q.4 Attempt any **FOUR** (08)

a) What is need of defragmentation?

b) List any four general purpose utility softwares.

c) Which are the fundamental rules for PC troubleshooting? (any four)

d) State the types of parallel ports.

e) Define the term current.

f) What is mean by Resistance?

Q.5 Attempt any **FOUR** (16)

a) How a hard drive is logically organized to hold data?

b) Describe disk caching in detail.

c) Write a note on problems with keyboard and monitor.

d) Explain keyboard connectors and its functions (with diagram)

e) Explain any two types of UPS.

f) Write a note on AC & DC current.

Q.6 Attempt any **TWO** (16)

a) Explain followign DOS commands i) Mkdir ii) chdir iii) Attrib iv) Mirror.

b) Write a note on trobleshooting power supply & system board.

c) Explain following terms i) USB ii) UART Chips.

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ODD TERM END EXAM NOV-DEC -2016

EXAM SEAT NO. | | | | | | |

LEVEL: **SECOND** PROGRAM: **INFORMATION TECHNOLOGY**

COURSE CODE: **IF211** COURSE NAME: **MICROPROCESSOR**

MAX. MARKS: **80** TIME: **3 HRS.** DATE: **05/12/2016**

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) Why 8085 microprocessor is called as 8-bit microprocessor?

b) Draw the flag register format of 8085

c) Write the functions of following 8086 pins

i) $\overline{LOCK}$

ii) $\overline{TEST}$

d) Write any four features of 8086 microprocessor.

e) Write any four conditional branch instructions of 8086 microprocessor.

f) Write the operation of following instructions of 8086 microprocessor.

i) MOV AX, Y [BP][SI]

ii) ROR BL, CL

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

a) Explain the concept of segmentation of 8086 memory.

b) Draw the architecture of 8085 microprocessor.

c) Explain addressing modes of 8086 microprocessor.

d) With the help of diagram, explain maximum mode configuration of 8086.

e) Explain shift instructions of 8086 and give example of each.

f) Classify the instruction set of 8086 microprocessor & give example of each

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

a) Give silent features of 8085 microprocessor (any four)

P.T.O

b) Draw & explain 8086's PSW format

c) How pipelining is achieved in 8086 microprocessor

d) Give comparison between 8086 & 8085 (any four points)

e) Explain any four logical instructions of 8086.

f) Explain any two string related instructions and give example of each.

Q.4 Attempt any **FOUR** **(08)**

a) Define i) Algorithm ii) Flowchart

b) State the function of following assembler directives.

i) Assume

ii) DB

c) Define procedure.

d) List various techniques of I/O interfacing.

e) Draw address decoding logic to interface a memory of 32k x 8 size

f) State the meaning of following data declaration statement :

PRODUCT DW 2 DUP (0)

Q.5 Attempt any **TWO** **(16)**

a) Compare I/O mapped I/O and memory mapped I/O interfacing.

b) Describe the concept of macros using one example.

c) Describe the function of following ALP tools:

i) Editor

ii) Assembler

iii) Linker

iv) Debugger

Q.6 Attempt any **TWO** **(16)**

a) Write assembly language program to multiply two 16 bit numbers in the memory and store the result.

b) Write algorithm to add two 8-bit numbers and convert this algorithm into ALP.

c) Using diagram, describe how return address is pushed and poped using stack, in the execution of procedure.

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ODD TERM END EXAM NOV./ DEC -2016

EXAM SEAT NO. | | | | | | |

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

COURSE CODE :- **ITE305/IF206/IT206**

COURSE NAME :- **DBMS**

MAX. MARKS : **80** TIME : **3 HRS.** DATE: - **30 / 11 / 2016**

Instruction:-

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

Marks

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

a) What is mean by instances and schema?

b) Write select operation of relational algebra with example.

c) What is difference between IN & BET WEEN operators?

d) How to create not null constraint in SQLwith example?

e) Define add_monts ( ) of SQL with example.

f) List attribute types of cursor.

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

a) Describe database abstraction of database.

b) Explain the structure of relational database.

c) Write a note on set difference operation of relational algebra.

d) How to create foreign key intigrity constraint? Give example.

e) Explain syntax for creating stored functions with example.

f) Write a note on exception handling in PL/SQL.

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

a) Explain Entity Relationship model with example.

b) Write concept of index and its types. Explain with example.

c) Write and explain a PL/SQL block to find factorial of number entered by user.

(P.T.O.)

Q.4 Attempt any **FOUR** (08)

a) What is purpose of normalization?

b) What do you mean by functional dependency?

c) Enlist measures of query cost.

d) Explain the term lock compatibility matrix.

e) What does a typical log record consists of?

f) Describe the possible modes of failure of a transaction.

Q.5 Attempt any **FOUR** (16)

a) Explain the normalization of database using 1NF.

b) Describe the steps in processing a query with neat diagram.

c) Explain the concept of conflict serializability.

d) Explain the concept of deadlock with example.

e) Describe validation based protocol.

f) Describe the data transfer operations between disk and main memory.

Q.6 Attempt any **FOUR** (16)

a) Explain the normalization of database using BCNF.

b) Illustrate ACID properties of transaction.

c) When do two transactions conflict?

d) What is meant by a starving of a transaction? Explain with example.

e) Explain deffered databased modification.

f) What is benefit of using checkpoint in a log?

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ODD TERM END EXAM NOV-DEC -2016

EXAM SEAT NO. | | | | | | |

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

COURSE CODE: **ITE312/IF228/R228** COURSE NAME: **HIGHER MATHS**

MAX. MARKS: **80** TIME: **3 HRS.** DATE: **29/11/2016**

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) Show that $\Delta^2\left(\frac{1}{x}\right)=\frac{2}{x(x+1)(x+2)}$ (internal of differencing being unity)

b) Show that $\frac{\Delta^2}{E}x^3=6x$ $(Take\ h=1)$

c) Prove that $\Delta\left(\frac{1}{f(x)}\right)=\frac{-\Delta f(x)}{f(x)f(x+1)}$

d) Evaluate $\frac{\partial z}{\partial x}$ *and* $\frac{\partial z}{\partial y}$ *if* $z=xy^2-y\sin(xy)$

e) Find $\frac{\partial^2 z}{\partial x^2}$ *if* $z=\tan^{-1}\frac{y}{x}$

f) Using Euler's theorem prove that $x\frac{\partial f}{\partial x}+y\frac{\partial f}{\partial y}+z\frac{\partial f}{\partial z}=2f$ *where* $f(x,y,z)=\frac{\left(4x^3+2y^2z\right)}{(x+2y+3z)}$

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

a) Show that $\Delta^n u_x=\left(e^{ah}-1\right)^n e^{ax+b}$ *where* $u_x=e^{ax+b}$ (h being interval , n differencing)

b) Express $f(x)=x^4-2x^3-x$ in terms of factorial polynomial, hence find $\Delta^3 f(x)$ *at* $x=5$

c) Using Newton's forward Interpolation formula estimate the number of students who obtained marks between 40 & 45, given that

Marks	35	45	55	65	75
No.of.students	31	42	51	35	31

d) Find the missing term using only forward difference table in the following table.

x	1	2	3	4	5
y	-1	-3	1	---	51

e) Estimate f(42) from the following table using Newton's Backward Interpolation formula

x	20	25	30	35	40	45
f(x)	354	332	291	260	231	204

f) Find f (301) by using suitable Interpolation formula from the following table.

x	300	304	305	307
y	2.4771	2.4829	2.4843	2.4871

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

a) If $u=\log\left(x^3+y^3+z^3-3xyz\right)$ *show that* $\left(\frac{\partial}{\partial x}+\frac{\partial}{\partial y}+\frac{\partial}{\partial z}\right)^2 u=-\frac{9}{(x+y+z)^2}$

b) If $u=x^y$ *find* $\frac{\partial^3 u}{\partial x^2\partial y}$

P.T.O.

c) Verify Euler's theorem by actual differentiation for $f(x,y,z) = 3x^2yz + 5xy^2z + 4z^4$

d) If $u = \sec^{-1}\left(\frac{x^3 - y^3}{x+y}\right)$ *show by Euler's theorem that* $x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y} = 2wtu$

e) If $u = xyz, v = xy + yz + zx$ *and* $w = x + y + z$ *compute* $J\left(\frac{u,v,w}{x,y,z}\right)$

f) If $\begin{matrix} x = r\sin\theta\cos\phi \\ y = r\sin\theta\sin\phi \\ z = r\cos\theta \end{matrix}$ Show that $J\left(\frac{x,y,z}{r,\theta,\phi}\right) = r^2\sin\theta$

Q.4 Attempt any **FOUR** **(08)**

a) Solve: $\frac{d^2y}{dx^2} + 3\frac{dy}{dx} + 2y = 0$ *find c.f*

b) Solve: $(2D+1)^2 y = 0$ *find c.f*

c) Solve: $(D^3 - 5D^2 + 8D - 4)y = 0$ *find c.f*

d) In a sample of 100 bulbs, if 5% of the electric bulbs are defective, using poissons distributions find the mean.

e) A fair coin is tossed 5times, what is the probability of getting exactly 3 heads.

f) Solve $(D^3+1)y=0$

Q.5 Attempt any **FOUR** **(16)**

a) Solve: $\frac{d^2y}{dx^2} - y = (1 + e^{-x})^2$

b) Solve: $(D^2 - 5D + 6)y = \sin 3x$

c) Solve: $(D^3 - 2D + 4)y = 3x^2 - 5x + 2$

d) Solve: $(D^4 + 5D^2 + 4)y = \cos\left(\frac{x}{2}\right).\cos\left(\frac{3x}{2}\right)$

e) If the probability that a new born child is male is0.6. Find the probability that in a family of 5 children there will be exactly 3 boys.

f) Solve the following L.P.P graphically.

Minimise : $40x_1 + 60x_2$

subject to: $4x_1 + x_2 \geq 10$

$3x_1 + 2x_2 \geq 12$

$4x_2 \geq 20$

Q.6 A] Attempt any **TWO** **(08)**

a) If the probability that an individual suffer a bad reaction from a certain injection is 0.001. Determine the probability that out of 2000 individuals.

i) Exactly 3

ii) More than 2 will suffer a bad reaction

b) Sacks of sugar packed by automatic loader have an average weight at 100kg with standard deviation of 0.25kg. Assuming a normal distribution, find the chance of getting a sack weighing less than 99.5 kg.
(Area from z=0 to z=2 is 0.4772)

c) If 10% bolts produced by a machine are defective. Calculate the probability that out of a sample selected at random of 10 bolts, not more than one bolt will be defective.

B] Attempt any **ONE** **(08)**

a) Food X contains 6 units of vitamin A and 7 units of vitamin B per gram and costs 12 paise per gram. Food Y contains 8 unit of vitamin A & 12 units of vitamin B per gram and costs 20 paise per gram. The daily minimum requirement of vitamin A & vitamin B are 100 units & 120 units respectively. Formulate and solve this as L.P.P to minimise the cost of product.

b) A manufacturer produces tricycle & bicycle of each which must be processed thought two machines A & B. Machine A has a maximum 120 hours available & Machine B has a maximum of 180 hours available. Manufacturing a tricycle requires 6 hours on machine A& 3 hours on machine B. Manufacturing a bicycle requires 4 hours on machine A & 10 hours on machine B. If profits are Rs.45 for a tricycle &Rs.65 for bicycle. Determine the no. of bicycles & tricycles that should be manufactured in order to maximise the profits.

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