GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.

(An Autonomous Institute of Govt. Of Maharashtra)

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.
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7) Use of Mobile is strictly prohibited.

Q.1 Attempt any **FOUR** **Marks (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 GUI?

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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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 :- **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.
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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.
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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.
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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.
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6) Assume additional suitable data necessary.
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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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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)

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.

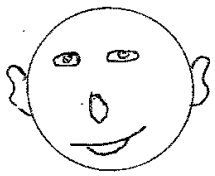
b) Explain how will you display menubar on frame with suitable example.

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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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 :- **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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ODD TERM END EXAM NOV. / DEC 2016

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

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 $x=r\sin\theta\cos\phi$, $y=r\sin\theta\sin\phi$, $z=r\cos\theta$ 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: $(2D+1)^2y=0$ *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 reactron 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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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.

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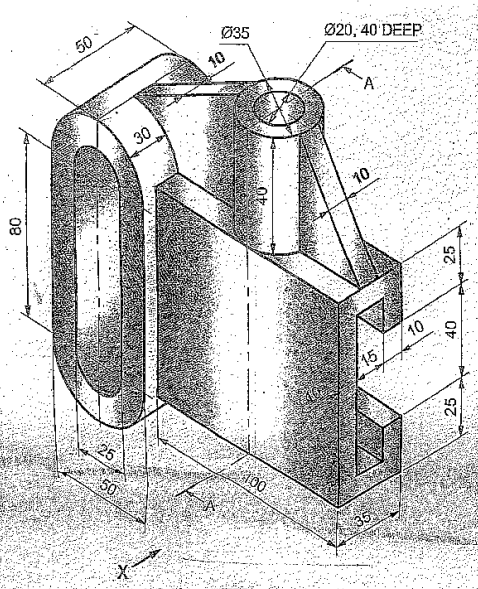


FIG. No. 1.

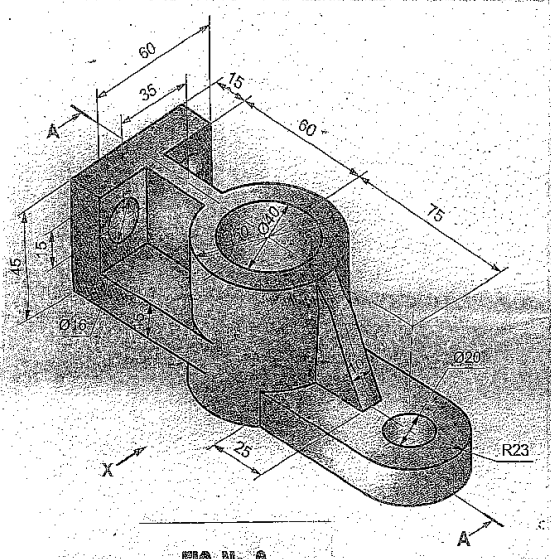


FIG. No. 2.

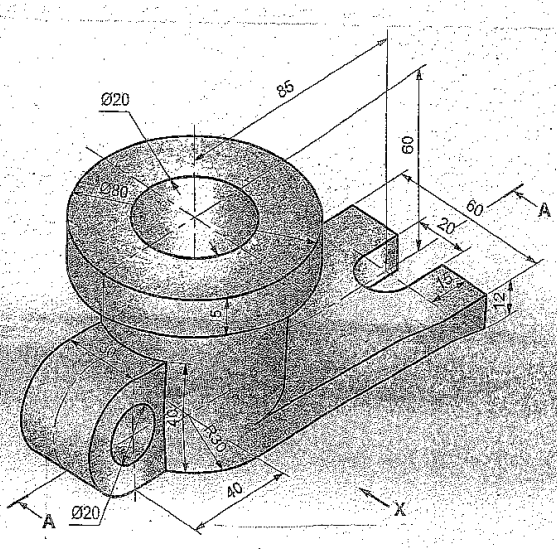
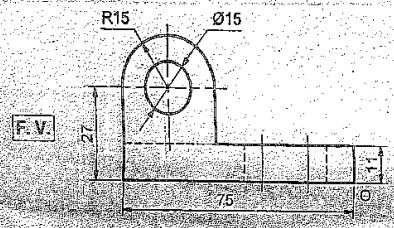


FIG. No. 3.



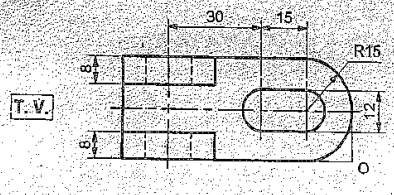
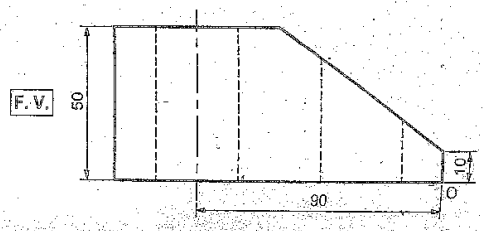


FIG. No. 4.



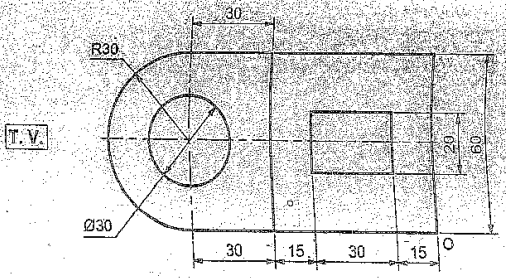


FIG. No. 5.

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ODD TERM END EXAM NOV. / DEC 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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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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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.
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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.

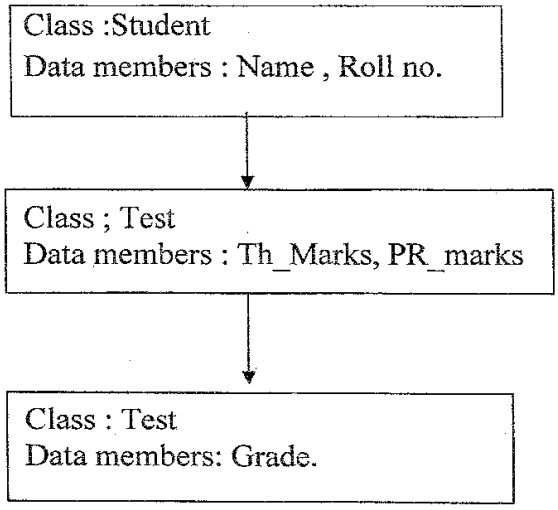
Q.6 Attempt any **TWO.** **(16)**

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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