F.Y.B.Sc.(IT) (SEM-I) February, 2019 Feb 2019

P4–Exam.–2019-1-79

Con. 561–19.

Professional Communication Skills

NX–6057

(3 Hours) [Total Marks : 100

N.B.: (1) **All** questions are **compulsory**.
(2) **Figures** to the **right** indicate **full** marks.

Q. 1 (A) Say whether the following statements are true or false: 5

(i) Upward communication provides feedback from the subordinates to their seniors.
(ii) A poster combines pictures and words.
(iii) Auditory symbols are sound signals like whistles, bells.
(iv) Reading is actually a very complex process that requires a great deal of concentration.
(v) A summary is a condensed account of the essential information of a piece of writing.

Q. 1 (B) Fill in the blanks : 5

(i) The full form of e-mail is ..... .
(ii) Every communication must have a sender and a ..... .
(iii) Brochure is a type of ..... .
(iv) When an employee wants to leave an organisation, he submits a letter of.... .
(v) Name any one physical barrier to communication ..... .

Q. 2) (A) What is meant by visual communication? Explain each method giving examples. 15

OR

(B) Write notes on **any three** of the following:

(i) Clarity in communication
(ii) Importance of gestures in communication.
(iii) Completeness in communication.
(iv) Disadvantages of oral communication.
(v) Face-to-face communication.

Q. 3 (A) Define the concept of Barriers to Communication. Discuss types of barriers to communication and also give methods to overcome them. 15

OR

(B) Write notes on **any three** of the following:

(i) Gender barriers
(ii) Barriers to effective listening
(iii) Causes of Inattention
(iv) Poor hearing as a barrier
(v) Overcoming barriers in the mind.

[TURN OVER

Q. 4 (A) Wanted a Software Programmer in Tata Consultancy Ltd. Vikhroli, Mumbai. Candidate should be a first class science graduate with Computer Programming as a major subject. Preference will be given to a candidate with some experience. Apply with details to the HR Manager. **15**

OR

Q. 4 (B) Write notes on **any three** of the following :

(i) Merits of a bio-data
(ii) E mails
(iii) The You Attitude in the application letter
(iv) Role of a chairman in conduct of a meeting
(v) A memorandum or memo.

Q. 5 (A) The Peacock Garment Co., Mumbai has been receiving many complaints from customers from Pune and Satara about late delivery of goods and shortage in goods despatched from your factory in Navi Mumbai. As the In-charge of this factory, write this report to the Manager looking into the complaints and on how you will improve the performance of your factory. **15**

OR

Q. 5 (B) Write notes on any **three** of the following :–

(i) Uses of Dictionary
(ii) Importance of definitions.
(iii) Guidelines for writing instructions
(iv) Types of summaries
(vi) An Abstract.

Q. 6 (A) Read the passage given below and write its summary. Give your summary a title. **15**

When we survey our lives and efforts we soon observe that almost the whole of our actions and desires are bound up with the existence of other human beings. We notice that whole nature resembles that of the social animals. We eat food that others have produced, wear clothes that others have made, live in houses that others have built. The greater part of our knowledge and beliefs has been passed on to us by other people though the medium of a language which others have created. Without language and mental capacities, we would have been poor indeed comparable to higher animals.

We have, therefore. to admit that we owe our principal knowledge over the least to the fact of living in human society. The individual if left alone from birth would remain primitive and beast like in his thoughts and feelings to a degree that we can hardly imagine. The individual is what he is and has the significance that he has. not much in virtue of the individuality. but rather as a member of a great human community. Which directs his material and spiritual existence from the cradle to grave.

OR

Q. 6 (B) Write notes on any **three** of the following :

(i) Guidelines for an effective presentation
(ii) Types of reading
(iii) Importance of visual aids in presentation
(iv) Good speaking skills
(v) Importance of listening.

Q. 7 (A) Write notes on any **three** of the following: **15**

(i) Importance of proof reading
(ii) Acronyms
(iii) Transition words
(iv) Hyphenation and its use in language
(v) Importance of revising your work.

OR

Q. 7 (B) (i) Proof read the following paragraph to make it into a meaningful and readable piece of literature **8**

i would like to sincerely apologize for not making it to your birthday party at 10th February. I Had to rush out of ton to attend animportant business meting. Had it not been so important, I will never have missed your party.

I hope you understand my situation and forgive me. Ido look forward to other occasions for us to celebrate to get ther.

With best wishes

Your friend, Raj.

Q. 7 (B) (ii) Do as directed : **2**

a. Give the full form of
PTO; Dr.

2

b. Give the Arabic numerals of
C; VI

3

c. Give plural forms of
Brother; leaf ; story.

[TURN OVER

(3 Hours) [Total Marks : 80

N.B.: (1) There are **eight** questions in this paper.
(2) **All** questions carry **equal** marks.
(3) **Figures** to the **right** indicate **full** marks.

Q1. (a) Distinguish between verbal and non-verbal communication. **10**

OR

(b) What are the 7Cs of communication? Explain each of them in brief.

Q2. (a) What is communication barrier ? Discuss each of them in brief. **10**

OR

(b) Explain the role of body language in making the interpersonal communication effective.

Q3. (a) Wanted an assistant manager for a Phoenix Software Pvt. Goregaon, Mumbai. **10**
Candidates must be good at drafting and should preferably have software background or qualifications along with B. Sc. (IT). Preference will be given to the candidates having previous experience. Apply along with bio-data.

OR

(b) What is Memorandum? Imagine that one of your subordinates is involved misconduct while on duty. Draft a memo to be issued to him.

Q4. (a) Imagine that you are a Manager of Modi Continental Pvt. Ltd., Mumbai. You are **10**
required to draft a notice along with agenda for Scheduled Annual General Body Meeting.

OR

(b) Draft an attractive brochure to sale a new laptop configures with latest hardware and the software.

Q5. (a) You have been appointed as Chairman to the committee appointed to investigate in **10**
to the possible causes and damages arising out of recent fire that broke out in your office at New Delhi. Draft a detailed investigative report on behalf of the committee.

OR

(b) Draft an instruction manual to use your newly developed website.

Q6. (a) What are the essential elements of email writing? Draft an email inviting your **10**
friends and colleagues for your brother's marriage.

OR

(b) Read the following paragraph and summaries it using the main points and relevant details:

English education and English language have done immense goods to India, inspite of their glaring drawbacks. The notions of democracy and self-government are the born of English education. Those who fought and died for mother India's freedom were nursed in the cradle of English thought and culture. The West has made contribution to the East. The history of Europe has fired the hearts of our leaders. Our struggle for freedom has been inspired by the struggles for freedom in England, America and France. If our leaders were ignorant of English and if they had not studied this language, how could they have been inspired by these heroic struggles

for freedom in other lands? English, therefore, did us great good in the past and if properly studied will do immense good in future.

English is spoken throughout the world. For international contact our commerce and trade, for the development of our practical ideas, for the scientific studies, English-is indispensable "English is very rich in literature," our own literature has been made richer by this foreign language. It will really be a fatal day if we altogether forget Shakespeare, Milton, Keats and Shaw.

Q7. (a) What is note taking and note making? Discuss the various steps involved in making and taking notes. **10**

OR

(b) What is precis writing? Read the following paragraph and make a draft of the precise writing:

It is physically impossible for a well-educated, intellectual, or brave man to make money the chief object of his thoughts just as it is for him to make his dinner the principal object of them. AU healthy people like their dinners, but their dinner is not the main object of their lives. So all healthy minded people like making money ought to like it and enjoy the sensation of winning it; it is something better than money.

A good soldier, for instance, mainly wishes to do his fighting well. He is glad of his pay-very properly so and justly grumbles when you keep him ten years without it-till, his main mission of life is to win battles, not to be paid for winning them. So of clergymen. The clergyman's object is essentially baptize and preach not to be paid for preaching. So of doctors. They like fees no doubt—ought to like them; yet if they are brave and well-educated the entire object to their lives is not fees. They on the whole, desire to cure the sick; and if they are good doctors and the choice were fairly to them, would rather cure their patient and lose their fee than kill him and get it. And so with all the other brave and rightly trained men: their work is first, their fee second-very important always; but still second.

Q8. (a) Discuss the SQ3R method of reading in detail. **10**

OR

(b) Read the following paragraph and edit it to make it meaningful:

I sat in the sofa in his office. The young manlooked vaguely familiar for me. I knew I hadmet him somewhere but could not place it. I wondered whether Ihad taughtthis boy.

When I had meet my student after manyyears I oftenfail to recognize them. They looked verydifferent and mature.

The man smiled on me. There was a dimple onhis cheekand then I knew who he was. He was some ofthe two kidswhich used to work in a garage a decade back.He sat downopposite me, closed his eyes or started tellinghis story.

F.Y.B.Sc.(IT) (SEM-I) February.2019

Con. 571-19. Applied Mathematics-I NX-6160

(3 Hours) [Total Marks: 80

N.B. : (1) All Questions are Compulsory.

(2) Each question carries 10 marks.

(3) Internal choices are there in each question.

(4) Figures to the Right indicate Full marks.

Q.1 Attempt any Two: 10

(a) Find the Rank of the matrix $A=\begin{bmatrix}4 & 2 & 3 & 1\\ 1 & 7 & -3 & 2\\ 3 & 1 & 2 & 1\end{bmatrix}$ 05

(b) Derive the formula for n^{th} derivative of $y=\log(ax+b)$ and hence find n^{th} derivative of $y=\log(3x)$ 05

(c) If $u=\log(x^2+y^2)$ verify $\frac{\partial^2 u}{\partial x \partial y}=\frac{\partial^2 u}{\partial y \partial x}$ 05

Q.2 (a) Solve the following system of equations 06

$7x+5y-3z=16,\ 3x-5y+2z=-8,\ 5x+3y-7z=0$

(b) Show that the matrix $A=\begin{bmatrix}\cos\alpha & \sin\alpha\\ -\sin\alpha & \cos\alpha\end{bmatrix}$ is Orthogonal. 04

OR

(b) Find the inverse of $A=\begin{bmatrix}3 & 1\\ 2 & 1\end{bmatrix}$ by using Adjoint method. 04

[TURN OVER

Q.3 (a) Find the Eigen values of the matrix $A=\begin{bmatrix}1 & 2 & 3\\ 2 & 0 & -3\\ 3 & -3 & 2\end{bmatrix}$ 06

(b) Show that the Vectors $X_1=(-1,0,1)$,$X_2=(0,3,0)$ & $X_3=(0,0,1)$ are linearly Independent. 04

OR

(b)Verify Cayley Hamilton theorem for the matrix $A=\begin{bmatrix}1 & 2\\ 0 & 1\end{bmatrix}$ 04

Q.4 (a) Find unit normal to the Surface $x^2y^3z^2 = 7$ at (1, 1, 1). 06

(b) Find div(curl $\bar{F}$) if $\bar{F}$ =yz i + y^2 j + xz k 04

OR

(b) Find div($\bar{F}$) at (1,1,1) if $\bar{F}$ =xyz i + x y^2 j + (xy) k 04

Q.5 (a) $\left(x\tan\frac{y}{x} - y\sec^2\frac{y}{x}\right)dx + x\sec^2\frac{y}{x}dy = 0$ 06

(b) Solve $\frac{dy}{dx} = \frac{a}{x-y}$ 04

OR

(b) Solve $\frac{dy}{dx} - y = e^x$ 04

Q.6 (a)Find Particular solution of $(D^2+1)y=0$ $y(0)=2, y'(0)=3$ 06

(b) Solve $(D^2-2D+1)\ y=x$ 04

OR

(b) Solve $(D^2+D+2)\ y=Cos2x$ 04

Q.7 (a) State & Verify Lagrange's mean value theorem for $f(x)=2x-x^2$ in $[-1,1]$. 06

(b) Verify Rolle's theorem for $f(x)=Sinx$ in $[0, 2\pi]$. 04

OR

(b) Prove that equation $xe^x=1$ has at least one real root. 04

Q.8 (a) Solve $(D^2-7D+6)y=2sin3x$ 06

(b) Find Stationary points for $f(x, y)= x^2+y^2$ 04

OR

(b) Find nth derivative of $y=(x+2)^3e^{2x}$ by Leibnitz rule. 04

[Turn Over

Con. 571. NX-6160

(3 Hours) [Total Marks: 100

N.B. : (1) All Questions are Compulsory.

(2) Figure to the Right indicate marks.

Q.1 Attempt any **One**: 10

(a) Convert the Matrix $A=\begin{bmatrix}3 & 2 & -1 & 6 & 2\\ 1 & 1 & 2 & 4 & -5\\ 2 & 1 & 6 & 7 & 3\end{bmatrix}$ into Normal form and hence find its rank.

(b) Derive the formula for n^{th} derivative of $y=\frac{1}{ax+b}$ and hence find n^{th} derivative of

$$y=\frac{2x-3}{(x+1)(x+2)}$$

Q.2 Attempt any **Three**: 15

(a) Show that the matrix $A=\begin{bmatrix}\frac{1+i}{2} & \frac{-1+i}{2}\\ \frac{1+i}{2} & \frac{1-i}{2}\end{bmatrix}$ is Unitary.

(b) Express the matrix $A=\begin{bmatrix}-1 & 2\\ 1 & 3\end{bmatrix}$ as sum of symmetric and skew symmetric matrices.

(c) Find the inverse of $A=\begin{bmatrix}2 & -1\\ 4 & 3\end{bmatrix}$ by using Adjoint method.

(d) Solve the following system of equations

$5x+3y+7z=4,\quad 3x+26y+2z=9,\quad 7x+2y+10z=5$

Q.3 Attempt any **Three:** 15

(a) Is the matrix $A=\begin{bmatrix}2 & 1 & 3\\ 1 & 4 & -6\\ 3 & -6 & -3\end{bmatrix}$ diagonalizable. Justify.

(b) Show that the Vectors $X_1=(2,2,1)$, $X_2=(2,-1,0)$ & $X_3=(4,1,1)$ are linearly dependent.

(c) Find Eigen values of the Matrix $A=\begin{bmatrix}0 & 2 & 1\\ 1 & 0 & -1\\ 0 & 1 & 3\end{bmatrix}$

(d) Verify Cayley Hamilton theorem for the matrix $A=\begin{bmatrix}1 & 3\\ 2 & -1\end{bmatrix}$

Q.4 Attempt any **Three:** 15

(a) Find div($\bar{F}$) at (2,-1,1) if $\bar{F} = sin(xy)\,i + x\,y^2\,j + (z-y)\,k$

(b) Show that for any vector field $\bar{F}$, div (curl $\bar{F}$)=0.

(c) Find grad(f) at (1, 1 ,1) if $f=xy^2 + z\,y + zx$

(a) Find unit normal to the Surface $x^2+y^2+z^2 = 1$ at (1, 2, 3)

Q.5 Attempt any **Three:** 15

(a) Solve $\frac{dy}{dx} = Cos(x+y)$

(b) Solve $(x+y)dx - (x-y)dy = 0$

(c) Solve $\frac{dy}{dx} + 2xy = x$

(d) Solve $\frac{dy}{dx} - \frac{y}{x} = x^2$

[Turn Over

10

Q.6 Attempt any **Three**: 15

(a) Solve $(D^2+2D+1)y=e^{2x}$

(b) Find Particular solution of $(D^2 + D - 6)y = 0$ satisfying the conditions $y(0)=1$, $y'(0) = 0$

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

(d) Solve $(D^2+4)y=Cos3x$

Q.7 Attempt any **Three**: 15

(a) Verify Lagrange's mean value theorem for $f(x)=(x+1)(x-1)$ in $[-1,1]$.

(b) Verify Rolle's theorem for $f(x)=Sinx$ in $[0, \pi]$

(c) Find n^{th} derivative of $y=e^x Cosx2x$

(d) If $u=x^3y^2$, Show that $\frac{\partial^2 u}{\partial x \partial y} = \frac{\partial^2 u}{\partial y \partial x}$

F.Y.B.Sc (IT) (SEM-I) February, 2019

Fundamental of Digital Computing

p3–D-upq–2019-IDOL 2019-1

Con. 563–19. NX–6086

(3 Hours) [Total Marks : 80

N.B. : (1) There are **8** questions in this paper.
(2) **All** questions are **compulsory**.
(3) **Each** question carries **10** marks.
(4) **Internal** choices are there in **each** question.
(5) **Figures** to the **right** indicate **full** marks.

1. Attempt any **one** of the following questions. **10**
   (a) Write a short note on half adder and full adder with logic diagram.
   (b) Draw the symbol and write truth table for any 5 logic gates.

2. Write any **two** from the following :— **10**
   (a) Convert following numbers from decimal to octal.
   (i) 512 (ii) 785
   (b) Add using 2's complement $(9\text{-}6)_{10}$
   (c) Write a short note on binary coded decimal numbers.

3. Write any **two** from the following :— **10**
   (a) State and explain De Morgan's 2nd law with circuit diagram.
   (b) Why NAND gates are called as universal gates, and construct AND gate using only NAND gate.
   (c) Simplify the following SOP equation using K-map
   $F(A, B, C, D) = \Sigma m (1, 2, 9, 10, 11, 14, 15)$

4. Write any **two** from the following :— **10**
   (a) Write a short note on 4-to-1 channel multiplexer using logic gates.
   (b) Converts the following numbers from gray to binary.
   (i) 1001 (ii) 1110
   (c) Write a short note on De-multiplexer.

5. Write any **two** from the following :— **10**
   (a) Explain J-K flip-flop in detail.
   (b) Explain toggle flip-flop with block diagram.
   (c) Write a short note on binary ripple counter.

[TURN OVER

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6. Write any **two** from the following :— **10**
   (a) Explain the following term.
   (i) Arithmetic logical unit (ALU). (ii) Control Unit (CU)
   (b) Write a short note on ROM and PROM.
   (c) Write a short note on Cache Memory.

7. Write any **two** from the following :— **10**
   (a) Write a short note on window 7.
   (b) State and explain any 5 advantages of Linux OS.
   (c) Explain following commands in Linux OS.
   (i) rmdir (ii) mv (iii) pwd (iv) cp (v) ls.

8. Write any **two** from the following :— **10**
   (a) Subtract using 1's complement $(5\text{-}4)_{10}$
   (b) Write a short note on input and output devices.
   (c) Explain the different types of registers.

Con. 563–19.

(3 Hours) **[Total Marks : 100**

N.B. : (1) Question No. 1 is **compulsory**.
(2) **Every** question has an **option**.
(3) **All** questions carry **equal** marks.

1. Attempt the following questions. **10**
   (a) Write a short note on half adder.
   (b) Draw the symbol and write truth table for EX-OR and EX-NOR Gate.

2. Write any **three** from the following :— **15**
   (a) Convert following numbers from decimal to octal.
   (i) 1024 (ii) 800
   (b) Add using 2's complement $(6\text{-}4)_{10}$
   (c) Write a short note on binary coded decimal numbers.
   (d) Subtract using 1's complement $(7\text{-}1)_{10}$

3. Write any **three** from the following :— **15**
   (a) State and explain De Morgan's 1st law with circuit diagram.
   (b) Why NOR gates are called as universal gates, and construct AND gate using only NOR gate.
   (c) Prove the following laws of Boolean Algebra.
   $(AB + ABC)\,A\overline{B}C = 0$
   (d) Simplify the following SOP equation using K-map.
   $F(A, B, C, D) = \Sigma\, m\,(1, 2, 9, 10, 11, 14, 15)$

4. Write any **three** from the following :— **15**
   (a) Write a short note on full adder.
   (b) Write a short note on 4-to-1 channel multiplexer using logic gates.
   (c) Converts the following numbers from binary to gray.
   (i) 1001 (ii) 1110
   (c) Write a short note on De-multiplexer.

[TURN OVER

(14)

5. Write any **three** from the following :— **15**

(a) Explain R-S flip-flop in detail.

(b) Explain toggle flip-flop with block diagram.

(c) Write a short note on binary ripple counter.

(d) Explain any one shift register in detail.

6. Write any **three** from the following :— **15**

(a) Explain the following term.

(i) Arithmetric logical Unit (ALU) (ii) Control Unit (CU).

(b) Write a short note on ROM and PROM.

(c) Write a short note on Secondary Storage.

(d) Write a short note on input and output devices.

7. Write any **three** from the following :— **15**

(a) What are the types of OS ? Explain Real time and embedded OS in detail.

(b) Write a short note on window 7.

(c) State and explain any 5 advantages of Linux OS.

(d) Explain following commands in Linux OS.

(i) rmdir (ii) mv (iii) pwd (iv) cp (v) ls.

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F.Y.B.Sc.(IT) (SEM-I) February, 2019

Electronic and Communication Technology

P4–Exam.–2019-1–84

Con. 564–19.

NX–6089

(3 Hours)

[Total Marks : 100

N.B.: (1) **All** questions are **compulsory**.
(2) **Figures** to the **right** indicates **full** marks.

Q.1 Compulsory question : **10**

(a) Draw and explain V-I characteristics of zener Diode.
(b) Give the types of semiconductor with example.

Q.2 Attempt any **three** question from the following : **15**

(a) Explain working of P-N junction diode in forward bias and draw its characteristics.
(b) What do you mean by oscillator ? Explain RC phase shift oscillator.
(c) Explain balance modulator to generate AM.
(d) Explain PRE emphasis and DE emphasis.

Q.3 Attempt any **three** question from the following : **15**

(a) Explain the full wave rectifier using P-N junction diode and sketch its output waveforms.
(b) What is an extrinsic semiconductor?
(c) What do you mean by digital multiplexing? Explain TDM technology.
(d) Draw the functional Block diagram of IC 555.

Q.4 Attempt any **three** question from the following : **15**

(a) Draw and explain Block diagram of PWM.
(b) Explain zener diode as voltage regulator.
(c) Write a short note on FDM.
(d) Explain astable multivibrator using IC 555.

Q.5 Attempt any **three** question from the following : **15**

(a) Explain pulse amplitude modulation waveforms with suitable timing diagrams.
(b) Explain PSK in detail.
(c) Draw the frequency response of single stage CE amplifier and derive equation for voltage gain.
(d) What is optical fiber? Explain its type.

Q.6 Attempt any **three** question from the following : **15**

(a) What is digital communication technique ? Explain any one in detail.
(b) Explain the half wave rectifier using P-N junction diode and sketch its output waveforms.
(c) Explain cascade amplifier.
(d) Give the difference between AM and FM.

Q.7 Attempt any **three** question from the following : **15**

(a) With the help of circuit diagram explain common emitter amplifier.
(b) Write a short note on lasers.
(c) Explain any one biasing methods of transistor.
(d) What do you mean by sampling? State and explain sampling theorem.

[TURN OVER

Con. 564–19.

NX–6089

(3 Hours)

[Total Marks : 80

N.B.: (1) **All** questions are **compulsory**.
(2) **Figures** to the **right** indicates **full** marks.

Q.1 Compulsory question : **10**
(a) Explain the full wave rectifier using p n junction diode and sketch its output waveforms.
(b) Discuss the types of semiconductor with example.

Q.2 Attempt any **two** question from the following : **10**
(a) What do you mean by oscillator ? Derive expression for frequency of oscillation of RC phase shift oscillator.
(b) Explain PRE emphasis and DE emphasis.
(c) Write a short note on FDM.

Q.3 Attempt any **two** question from the following : **10**
(a) Sketch and explain V-I characteristics of zener Diode.
(b) What do you mean by digital multiplexing? Explain TDM technology.
(c) Draw the functional diagram of IC 555.

Q.4 Attempt any **two** question from the following : **10**
(a) Draw and explain Block diagram of PWM.
(b) Explain zener diode as voltage regulator.
(c) Explain balance modulator to generate AM.

Q.5 Attempt any **two** question from the following : **10**
(a) Explain FSK in detail.
(b) Draw the frequency response of single stage CE amplifier and derive equation for voltage gain?
(c) What is optical fiber? Explain its uses.

Q.6 Attempt any **two** question from the following : **10**
(a) List digital communication techniques and explain anyone of it in detail.
(b) Explain the half wave rectifier using p n junction diode and sketch its output waveforms.
(c) Explain pulse amplitude modulation waveforms with suitable timing diagrams.

Q.7 Attempt any **two** question from the following : **10**
(a) With the help of circuit diagram explain common emitter amplifier.
(b) Write a short note on lasers.
(c) What do you mean by sampling? State and explain sampling theorem.

Q.8 Attempt any **two** question from the following : **10**
(a) Give the difference between AM and FM.
(b) Explain working of P-N junction diode in forward bias condition and draw its characteristics.
(c) Explain any one biasing methods of transistor.

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F.Y.B.Sc.(IT)(SEM-I) February, 2019

Introduction to c++ Programming

Con. 565–19. NX–6099

(3 Hours) [Total Marks : 100

N.B. : (1) There are **six** questions in this paper.
(2) **All** questions are **compulsory**.
(3) Figures to the **right** indicates **full** marks.

1. Answer the Following (attempt any **two**)
   (a) Write a program to display even numbers between the ranges of 1 to 50. 5
   (b) Write short note on scope resolution operator. 5
   (c) What are operators in c++ ? Explain Relation operators. 5

2. Answer the Following.
   (a) Explain the Break and continue statement in c++ 6
   (b) What are manipulators? explain with example. 4
   OR
   (c) Write a program to find the Fibonacci series of first 10 numbers. 4

3. Answer the Following :
   (a) Explain the function overloading with an example. 5
   (b) Explain the following loop control statement in C++ 5
   (i) Break statement (ii) Continue statement
   (c) Explain the selection statement in C++ with an example? give syntax for each 5
   (i) If else statement (ii) Switch case statement
   (d) Explain the loop structures in C++ with an example. 5
   (i) For loop (ii) do-while loop

4. Answer the Following.
   (a) What do you mean by function prototype ? 5
   (b) Explain the inline function with example. 5
   (c) Write a program in C++ to find the sum of two numbers using functions. 5
   (d) What are actual and formal arguments used in function. 5

5. Answer the Following.

(a) What are functions recursive in c++ ? 5

(b) What is call by value explain with example. 5

(c) What are arrays explain with the types. 5

(d) Explain how to declare and initializing and access elements in arrays. 5

6. Answer the Following.

(a) Explain any two string handling functions with the help of examples. 5

(b) Explain any four member functions of vector. 5

(c) What is a vector ? How do you access elements of a vector ? 5

(d) What are pointers ? Give the advantages of using pointers. 5

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Con. 565–19. NX–6099

(3 Hours) [Total Marks : 80

N.B. : (1) There are 8 questions in this paper.
(2) **Each** question carries **10** marks.
(3) **Internal** choices are there in **each** question.
(4) **Figures** to the **right** indicate **full** marks.

1. Answer the Following (attempt any two 10 marks)
   (a) Define Algorithm with the help of suitable example. **5**
   (b) Write short note on scope resolution operator. **5**
   (c) What are operators in C++ ? Explain Relational operators. **5**

2. Answer the Following. (**10** marks)
   (a) Explain the Break and continue statement in C++ **6**
   (b) What are manipulators? explain with example. **4**

   OR

   (c) Write a program to find the Fibonacci series of first 10 numbers. **4**

3. Answer the Following (**10** marks)
   (a) Explain the following loop control statement in C++ **10**
   (i) Break statement (ii) Continue statement

   OR

   (b) Explain the selection statement in C++ with an example? give syntax for each **10**
   (i) If else statement (ii) Switch case statement

4. Answer the Following (**10** marks)
   (a) What is call by value explain with example. **6**
   (b) Explain any four built in functions in C++ with examples. **4**

   OR

   (c) Explain how to declare, initialize and access elements in arrays. **4**

[TURN OVER

5. Answer the Following (10 marks)

(a) What do you mean by function overloading with example ? **10**

OR

(b) Explain function with example. Explain the actual and formal arguments Used in function **10**

6. Answer the Following (attempt any two **10** marks)

(a) Write a program in c++ to find sum and average of 10 array elements. **5**

(b) What is a vector? How do you access elements of a vector ? **5**

(c) What are pointers? Give the advantages of using pointers. **5**

7. Answer the Following (attempt any two **10** marks)

(a) Explain 1) getchar() 2) getch() 3) gets() 4) putchar() 5) puts() **5**

(b) Explain pointers in c++ with the help of example. **5**

(c) Write a note on structures with the help of example. **5**

8. Answer the Following (attempt any two **10** marks)

(a) Write a program in c++ using function for swapping two numbers. **5**

(b) Write a recursive function for factorial of given number. **5**

(c) Write a program to sort the numbers in ascending or descending order. **5**

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F.Y.BSc (IT) (Sem-I)