ARKA JAIN University, Jharkhand
1st Semester Final Examination – 2018-19

Subject : Introduction to Computer Science	**Course:** BCA & B.Sc IT
	Full Marks : 70
Time : 3 Hours	**Pass Marks:** 28

- Candidates are required to give their answers in their own words as far as practicable.
- Question Paper is divided into **Three Parts –A, B & C**
- **Part-A** is compulsory.
- **Part- B** contains **SIX** questions out of which **FOUR** questions are to be answered.
- **Part- C** contains **SIX** questions out of which **THREE** questions are to be answered.

PART A

Q1). All questions are compulsory

A] Multiple Choice Questions : (10x1=10)

1. Which of the following is a part of the Central Processing Unit?
   a) Printer
   b) Key Board
   c) Mouse
   d) Arithmetic & Logic Unit

2. Junk e-mail is also called
   a) Spam
   b) Spoof
   c) Sniffer script
   d) Spool

3. What type of computers are client computers (most of the time) in a client-server system?
   a) Mainframe
   b) Mini-computer
   c) Microcomputer
   d) PDA

4. Where are data and programme stored when the processor uses them?
   a) Main Memory
   b) Secondary Memory
   c) Disk Memory
   d) Programme Memory

5. What does DMA stand for?
   a) Distinct Memory Access
   b) Direct Memory Access
   c) Direct Module Access
   d) Direct Memory Allocation

6. BCD is
   a) Binary coded Decimal
   b) Bit Coded Decimal
   c) Binary Coded Digit
   d) Bit Coded Digit

7. Which of the following is first generation of computer?
   a) EDSAC
   b) IBM-1401
   c) CDC-1604
   d) ICL-2900

8. SMPS stands for
   a) Switched Mode Power Supply
   b) Start Mode Power Supply
   c) Store Mode Power Supply
   d) Single Mode Power Supply

9. _____ is the functional key to display save –as box.
   a) F5
   b) F6
   c) F9
   d) F12

10. What type of virus uses computer hosts to reproduce itself?
    a) Time Bomb
    b) Worm
    c) Melissa Virus
    d) Macro Virus

B] Very Short question   (5x2=10)

   a) What is cache memory?
   b) What are the 2 Categories in Input Devices?
   c) What are the disadvantages of a Dot Matrix Printer?
   d) Explain pen drive.
   e) Explain zip drive.

PART B

Q2).   Answer any four: (4x5=20)

   a) Convert the following binary numbers to hexadecimal and octal
      (a) 10110
      (b) (b) 1011011011
      (c) 110110111.01111
      (d) 1101101101101.10110
      (e) 111001001.1100101

   b) What logic function is obtained by adding an inverter to the output of an AND gate? Explain with suitable example.

   c) What is the difference between a volatile memory and a Non-volatile memory?

   d) What do you mean by output devices? Explain any five-output devices with diagrams.

   e) What are search engines? With suitable example and explain.

   f) What do you understand by the term network topology?

PART C

Q3). Write the short notes on Digital Pen, Digital Camera, Scanners, Projector, and speech Recognition.

Q4). What are the essential components of a computer? Draw the schematic block diagram of a computer showing its essential components. Discuss the function of each component.

Q5). What are the important features of various generations of computers? Give some examples of computers for each generation.

Q6). What do you understand by Applications of Computer? What are the facilities provided by a modern Computer system?

Q7). What are transmission media? What are the different categories of transmission media?

Q8). What do you understand by operating system? What are the facilities provided by a modern operating system?

Subject :Business Communication

Time : 3 Hours

Course: BCA/BSCIT
Full Marks : 70
Pass Marks: 28

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PART A

Q.1) **All questions are compulsory**

A] Multiple Choice Questions :(10x1=10)

a)Web writing is a form of :

    i)Intrapersonal Communication
    ii)Interpersonal Communication
    iii)Public Communication
    iv)None of the above

b)People having low self esteem and hence not being able to communicate well is an example of

    i)Physiological Barrier
    ii)Psychological Barrier
    iii)Organisational Barrier
    iv)None of the above

c)Technical terms used by a financial analyst is an example of _____barrier to communication

    i)Organizational Barrier
    ii)Attitudinal Barrier
    iii)Physiological Barrier
    iv)None of the above.

d)Signs at the airport is an example of
    i)Audio Visual Communication
    ii)Signs and Symbols
    iii)Silence
    iv)All of the above

e)In this the information flows from one person to another in a sequential order

    i)Probability Chain
    ii)Cluster Chain
    iii)Single Strand Chain
    iv)Gossip Chain

f)_____ Communication lacks personal touch.

    i)Written Communication
    ii)Oral Communication
    iii)Non Verbal Communication
    iv)None of the above.

g)_____ refers to the process of translation of symbols encoded by the sender into ideas that can be understood.
    i)Encoding
    ii)Feedback
    iii) Decoding
    iv) None of the above.

h)_____ Barriers are behaviours or perceptions that prevent people from communicating effectively.

i)_____ involves haptics, kinesics, vocalics and chronemics.

j)A person who possesses a need to dominate others and distrust the motions of others is known as an _____

B] Very Short question(5x2=10)
    i)   What do you mean by Glossophobia?
    ii)   What is a Memoir?.
    iii)   State four forms of Written Communication used with clients.
    iv)   What do you mean by noise in the communication process? State two examples.
    v)   What is the purpose of Communication in an Organisation?

PART B

Q2. Answer any four: (4x5=20)\

i) State the strategies of becoming a better speaker.
ii) State a few tips of diary writing.
iii) What do you mean by jingle writing? State a few examples.
iv)What is informal communication channel? State the informal communication channel chains
v)List a few limitations of oral communication.
vi) What is the importance of communication in an organization?

PART C

Answer any three: (3x10=30)

Q.3) Why is Public speaking important in your life? Elaborate.

Q.4) "It was New Year's Eve and little did she know it would mark a turning point in her life." Using the above lines plot a story of your own.

Q.5) What is Non-Verbal Communication? Explain the types of Non- Verbal Communication.

Q.6) State the Communication Barriers and list the ways to overcome it.

Q.7) What is meant by Formal Communication Channel? Explain briefly the structure (components) of Formal Communication Channel

Q.8) State the Pros and Cons of Written Communication.

ARKA JAIN University, Jharkhand
1st Semester Final Examination – 2018-19

Subject: Discrete mathematics

Time : 3 Hours

Course: BCA/BSC (IT)
Full Marks: 70
Pass Marks: 28

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- **Part- C** contains **SIX** questions out of which **THREE** questions are to be answered.
- **Part-D** is compulsory

PART A

Q1.) All questions are compulsory:-

A] Objective Answer Type   (5x1=5)

i) If set having' m' number of elements then total no of proper subset will be
   a) 2^{m-2}
   b) $2^m - 2$
   c) 2^{m+1}
   d) none of these

ii) let A be the set of all lines in a plane then the relation R={$(l_1, l_2):l_1||l_2$} is
   a) reflexive
   b) symmetric
   c) equivalence
   d) None of these

iii)) f:R$\rightarrow$ R and if f(x)=[x] then range of function will be

   a) R_+
   b) R
   c) Z
   d) None of these

iii) How many 5 digits telephone numbers can be constructed using the digits 0 to 9 each no starts with 67. and no digits appear more than once?
   a) 336
   b) 420
   c) 330
   d) None of these

v) if n is natural number then $1^3 + 2^3 + 3^3 \dots \dots \dots n^3$ is equal to

   a) $\frac{n(n+1)}{2}$
   b) $\frac{n(n+1)(2n+1)}{6}$
   c) $\left\{\frac{n(n+1)}{2}\right\}^2$
   d) None of these

B] Short Answer Type   (5x2=10)

   i) Define equivalence relation
   ii) Define essential quantifier?
   iii) If A={1,{2}} find p(A)
   iv) Define degree of vertices?
   v) Find n if $(n+2)! = 60(n-1)!$

PART B

Q2.)   Answer any four: (4x5=20)

   i) Using principal of mathematical induction prove that
   $$\frac{1}{2\cdot5} + \frac{1}{5\cdot8} + \frac{1}{8\cdot11} + \cdots \frac{1}{(3n-1)(3n+2)} = \frac{n}{(6n+4)}$$

   ii) If A=R-{2} and B=R-{1} if f: A→ B and $f(x) = \frac{x-1}{x-2}$ show that f is one-one onto. Hence find f^{-1}

   iii) how many words with meaning or without meaning can be formed from the letters of the word
   (i) All vowels occur together
   (ii) All vowels not occur together

   iv) Define conditional and biconditional statements with truth table? Also define converse, inverse and contra positive, of p→ q.

   v) . find the value of f(1),f(2),f(3),f(4), and f(5) if f(n+1)=3f(n) is defined recursively by f(0)=1 and for n=0,1,2,3......

   vi) *In* a single throw of two dice, find the probability that neither a doublets nor a total of 10 will appear.

   vii) Find the gcd of 119 and 272.also express the gcd as a linear combination of 119 and 272.

   viii) Show that the relation R on the set A={x: x∈Z, 0≤ x ≤ 12}, given by

   R= {(a, b):|a-b| is a multiple of 4} is an equivalence relation.

PART C

Answer any Three: (3x10=30)

Q3.) State and prove that de Morgan's theorem in general form?

Q4.) . Let f:X→ Y be a mapping and let A, B ⊆Y. then

   Prove that (I) $f^{-1}(A\cap B) = f^{-1}(A)\cap f^{-1}(B)$

   (ii) $f^{-1}(A\cup B) = f^{-1}(A)\cup f^{-1}(B)$.

Q5.) prove that the relation' congruence modulo n' in the set of integers is an equivalence relation?

Q6.) Using principal of mathematical induction prove that $(3^{2n+2} - 8n - 9)$ is divisible by 8.

.) An insurance company insured 2000 scooter drivers, 4000 car drivers and 6000 truck drivers. the probability of an accident involving a scooter ,a car and truck is 1/100 , 3/100, 3/20 respectively. One of the insured persons meets with an accident. What is the probability that he is a scoter driver?

Q8.) Prove that the set [0, 1] is uncountable.

PART D

Q9.) Consider the experiment of tossing a coin. If the coin shows head, toss it again but if   **(5x1=5)** It shows tail, then throw dice. Find the conditional probability of the event that the die shows number greater than 4 given that there is at least one tail.

Subject : Programming in C

Course: BCA/BSCIT
Full Marks : 70
Pass Marks: 28

Time : 3 Hours

- Candidates are required to give their answers in their own words as far as practicable.
- Question Paper is divided into **Three Parts –A, B & C**
- **Part-A** is compulsory.
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- **Part- C** contains **SIX** questions out of which **THREE** questions are to be answered.

PART A

Q.1)   **All questions are compulsory**

   A] Multiple Choice Questions :   (10x1=10)

a)   Which pair of functions below are used for single character I/O ?
   i) getchar() and putchar()
   ii) scanf() and printf()
   iii) input() and output()
   iv) None of these

b)   Which of the following is a keyword used for a storage class?
   i) printf
   ii) external
   iii) auto
   iv) scanf

c)   What will be the output of the following program?

```
void main( )
  {
     int x [ ] = {10,20,30,40,50};
     printf (" \n %d %d %d %d ", x [4] ,3[x] ,x[2] ,1[x] ,x[0] );
  }
```
   i) Error
   ii) 10 20 30 40 50
   iii) 50 40 30 20 10
   iv) None of these

d)   The size of an int variable in C is
   i) 8 bytes
   ii) 4 bytes
   iii) 2 bytes
   iv) 1 byte

e)   Which of the following is not a keyword of 'C' ?
   i) auto
   ii) register
   iii) int
   iv) function

ARKA JAIN University, Jharkhand

1st Semester Final Examination – 2018-19

Subject : Hindi

Time : 2 Hours

Course: BCA/BSCIT
Full Marks : 35
Pass Marks: 14

- Candidates are required to give their answers in their own words as far as practicable.
- Question Paper is divided into **Three Parts –A, B & C**
- **Part-A** is compulsory.
- **Part- B** contains **FOUR** questions out of which **THREE** questions are to be answered.
- **Part- C** contains **THREE** questions out of which **TWO** questions are to be answered.

PART A

Q.1) All questions are compulsory

A] Multiple Choice Questions :   (4x1=4)

(i) प्रेमचंद किस कहानी का रचयिता है ?

क) अनमोल   ख) परिवार

ग) विवाह   घ) फतिहा

(ii) असदखाँ की फिरौती कितने रुपये पर तय हुई ?

क) दो हज़ार   ख) तीन हज़ार

ग) चार हज़ार   घ) पाँच हज़ार

(iii) मृणालिनी किस कहानी की नारी पात्र है ?

क) फातिहा   ख) मंत्र

ग) कफ्तान साहब   घ) अनमोल

(iv) कप्तान साहब कहानी का नायक कौन था ?

क) भक्त सिंह   ख) जगत सिंह

ग) हिम्मत सिंह   घ) इनमे से कोई नहीं

BCA/BSCIT

B] Very Short question   (2x2=4)

(i)   अर्थ स्पष्ट करें:-

बड़ा हुआ तो क्या हुआ, जैसे पेड़ खजूर ।
पंछी को छाया नहीं, फल लागे अति दूर ॥

(ii)   निम्नलिखित शब्दों के दो दो पर्यायवाची शब्द लिखे:-

क) आशा

ख) किसान

PART B

Q.2) Answer any three   (3x5= 15)

(i)   अर्थ स्पष्ट करे:-

अभी उम्र कुल तेइस की थी, मनुज नहीं अवतारी थी,
हमको जीवित करने आयी बन स्वतंत्रताथी नारी-,
दिखा गई पथ, सिखा गई हमको जो सीख सिखानी थी,
बुंदेले हरबोलों के मुँह हमने सुनी कहानी थी,
खूब लड़ी मर्दानी वह तो झाँसी वाली रानी थी।।

(ii)   वचन की परिभाषा लिखे। उनके भेदो को उदाहरण सहित लिखे ?

(iii)   विपरीत शब्द लिखे :-

क *आर्द्र*

ख आमिष

ग अग्रज

घ अनुकूल

इ आतुर

(iv) *अपने मोहल्ले में फैली गंदगी की चर्चा करते हुए सफाई निरीक्षक के पास एक पत्र लिखे।*

PART C

Answer any two:

निबंध लिखे

(6X2= 12)

Q.3) वस्तु एवं सेवा कर   अथवा   स्वच्छ भारत अभियान

Q.4) निम्नलिखित शब्दावली का हिन्दी में अनुवाद करे

        (i)   DIRECTOR

        (ii)   ADVISER

        (iii)   OUTPUT

        (iv)   PAYMENT

        (v)   RISK

        (vi)   INPUT

Q.5) फातिहा कहानी का सारांश लिखे.

Subject: **IT Awareness**	Course: **BCA/BSCIT** Full Marks: 35
Time: 2 Hours	Pass Marks: 14

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PART A

Q.1)   **All questions are compulsory**

Multiple Choice Questions: (10x1=10)

a)   Larry Pages is associated with
   i)   TCS   ii)HCL   iii)Mind Tree   iv)Google

b) IC was used in

   i) First Generation Computers.   ii) Second Generation Computers
   iii)   Third Generation Computers IV) None

c) Turing Machine was invented by

   i) Alan Turing   ii) Charges Babbag   iii)Tim Berners Lee   iv) None

d) Machine Language is considered as

   i) Low level Language   ii) High Level   iii) Middle level   iv) None

e) Tata groups started

   i)   Wipro   ii)TCS   iii)Tech Mahindra   iv)Rolta

f)   Who is considered as first Lady computer

   i) Ada Lovelace   ii) Akana Hilium   iii) S willliams iv) None

g) WWW invented by

   i) Tim Berners Lee   ii) Larry Page iii) Nikulus Wirth   iv) None

h) Enigma Machine was used in

   i) First world war   ii) second world war   iii) ARPANET   iv) None

i) Imitation Game was based on the life of

    i) Tim Berners Lee   ii) Nikulas Wirth   iii) Alan Turin   iv) Ada Lovence

j) F C Kohli was associated with

    i)Tata group ii)Shiv Nadar iii)Sunil Bharti Mittal iv)None of above

PART B

Q.2) .   **Answer any Four:**

                                                                      (4x5=20)

i) Discuss the role Tim Berners Lee in the development of Internet?
ii) What do you mean by Y2K problem?
iii) What do you mean by IT services?
iv) Discuss the role of Alan Turing in development of computer science and technology?
v) What is the need of BPO?
vi) Discuss the role of Information Technology in Education

PART C

Q.3) what are the threats and challenges of Indian IT industry?

                                                                    (1x5 =5)