May- June-

Roll No. [ ]

Total No. of Questions : 05

Total No. of Pages : 01

B.Voc. (Beauty Therapy and Aesthetics)/ B.A. (JAMC)/ BBA/(SIM)/ B.Com (Honours)/ BCA/ BHMCT (UGC)/ B.Sc. - Honours (Nutrition and Dietetics)/ B.Sc. (AI&ML)/ (Bio Technology)/ (Fashion Design)/ (Graphics & Web Designing)/ (IT)/(Medical Lab Sciences)/ BTTM (Sem-1)

ENGLISH

Subject Code : BTHU-103-18

M.Code : 75085

Date of Examination : 22-06-2023

Time : 3 Hrs.

Max. Marks : 60

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INSTRUCTIONS TO CANDIDATES :

1. All questions are COMPULSORY.
2. Q1, Q2 and Q3 carry TEN marks each.
3. Q4 and Q5 carry FIFTEEN marks each.

1. What is Communication? Explain in detail the types and modes of Communication.

2. How is Verbal communication different from non-verbal Communication? Discuss in detail the importance of non-verbal communication as a leader.

3. In FOUR sentences, summarise and paraphrase the following passage in an answer to the following question:

   How can smokers quit smoking? What steps can smokers follow to quit smoking?

   "No pain No gain". Quitting smoking needs a strong will and a lot of effort. Many smokers want to quit smoking. They know it is bad for their health. But it is difficult for them to do so. Doctors advise heavy smokers to reduce smoking gradually starting to cut down two to three cigarettes a day reaching the ultimate goal. Others find that chewing a gum keeps a smoker busy all day long and consequently, he can reduce the number of cigarettes consumed. Sports can improve the health and give smokers the strength to quit this bad habit. Some people go for group support where all smokers provide support for each other to quit smoking.

4. Write a letter to an applicant for the post of Chief Accountant to present himself for a personal interview.

5. You, as a marketing manager have been given the responsibility of conducting and preparing a market research to know the market potential of a new product which your company is intending to launch in the market in near future. Prepare a draft report.

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Roll No. [ ]

Total No. of Questions : 07 Total No. of Pages : 02

B.Sc. (IT)/ Graphics & Web Designing / BCA (Sem–1)

MATHEMATICS

Subject Code : UGCA-1901

M.Code : 76961

Time : 3 Hrs. Date of Examination : 17-06-2023

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Write briefly :**

a) Set builder method

b) Null set

c) Disjunction

d) Contradiction

e) Diagonal matrix

f) Arithmetic progression

g) Geometric mean

h) Show that $A \cup A^c = U$

i) If $A = \begin{bmatrix} 2 & 5 \\ 1 & 3 \end{bmatrix}$, $B = \begin{bmatrix} 1 & -1 \\ -3 & 0 \end{bmatrix}$, find $5A - 3B$.

j) Prove by an example that AB can be zero matrix when either of A and B is zero matrix.

(S3)-2730

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SECTION-B

2. a) Let $U=\{0,1,2,3,\ldots,9\}$, $A=\{x \in U: x$ is multiple of $3\}$, $B=\{x \in U: x^2-5 \geq$ Determine

i) $A \cap B$

ii) $A \cup B$

b) List all the members of the power set of the set $A=\{a,b,c,d\}$.

3. Prove $p \wedge (q \vee r) = (p \wedge q) \vee (p \wedge r)$

4. For what values of x, y, z, w

$$3\begin{bmatrix} x & y \\ z & w \end{bmatrix} = \begin{bmatrix} x & i \\ -1 & 2w \end{bmatrix} + \begin{bmatrix} 4 & x+y \\ z+w & 3 \end{bmatrix}$$

5. If $A = \begin{bmatrix} 1 & 0 & 2 \\ -1 & 2 & -3 \end{bmatrix}$, $B = \begin{bmatrix} 2 & 0 \\ 1 & -1 \\ 0 & -2 \end{bmatrix}$ verify that $(AB)' = B'A'$.

6. a) Prove that if a, b, c are in AP. then $a^2(b+c)$, $b^2(c+a)$, $c^2(a+b)$ are in AP

b) Insert 5 AMs between 9 and 27.

7. a) The sum of three terms of a GP is 21 and their product is 216.Find the term

b) Insert 5 GMs between 3 and 192.

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Roll No. [ ]

Total No. of Questions : 07

Total No. of Pages : 02

BCA (Sem–1)

PROBLEM SOLVING USING C

Subject Code : UGCA-1903

M.Code : 76963

Date of Examination : 12-06-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Write briefly :**

   a) Differentiate between Keywords and Identifiers.

   b) What are Symbolic Constants? Explain.

   c) What is meant by pseudo code?

   d) List any two unformatted input output functions.

   e) Write the syntax of WHILE loop in C.

   f) What are static variables? Give example.

   g) List out various file operations in C.

   h) Differentiate between Arrays and Structures in C.

   i) Define the term functions in C.

   j) Explain in brief about String functions in C.

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SECTION-B

2. What do you mean by Flowchart. Explain the different symbols used in a flowchart. How it differs from an Algorithm.

3. Explain the following operators with suitable examples :

   a) Arithmetic Operators

   b) Assignment and Conditional Operators

4. a) Write a C program to find sum of first ten natural numbers using FOR loop.

   b) What is meant by switch-case? Explain with the help of an example.

5. Explain the use of 'break' statement? Write a program to check whether a given number is prime using break statement?

6. **Explain the following concepts with suitable examples :**

   a) Structures and pointers.

   b) Passing structures to functions.

7. What is the difference between call by value and call by reference in relation to functions? Explain with the help of an example?

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BCA — Dec - 2022

Roll No. [ ]

Total No. of Questions : 07

Total No. of Pages : 02

BCA (2019 Batch) (Sem.–1)

PROBLEM SOLVING USING C

Subject Code : UGCA-1903

M.Code : 76963

Date of Examination : 14-01-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Write briefly :**

a) What do you mean by function prototype? How it is defined?

b) Compare local and global variables with example.

c) Explain the conditional operator with example.

d) Discuss structure of a C program.

e) What are header files? Why these are required? Give example.

f) What is the relationship between formal arguments and actual arguments?

g) What is a pointer? How a pointer variable is declared, initialized and accessed?

h) What are identifiers and keywords? Give example.

i) What is a constant? How it is declared and used?

j) Define Array? How 1-D and 2-D arrays are declared? Give example.

SECTION-B

2. a) Explain various data types of C with example. Give memory requirement of each.

b) Define recursion. Write a recursive function to compute factorial of a given number.

3. a) Explain if-else, nested-if and switch statements of C with examples.

b) Compare call by value and call by reference parameter passing with examples.

4. a) Draw a flow chart to print largest of 3 numbers.

b) What are constants and variables? Discuss the rules how constants and variables are defined. Give examples.

5. a) Define string. Explain various operations which can be applied on strings with examples.

b) What are two-dimensional arrays? How these are declared? Write a program to add two matrices.

6. a) What are pointers arrays? How you can declare and access 1-D and 2-D array elements using pointers? Discuss with examples.

b) Write a program using pointers to find largest element of the array.

7. a) Write a program to design a structure for 30 students of a class with Roll No, Name and Marks. Find the average marks of the class.

b) Explain various file operations available in C with examples.

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Total No. of Questions : 07

Total No. of Pages : 02

BCA / DCA / B.Sc.(IT) (Sem.–1)

MATHEMATICS – I

Subject Code : BSIT/BSBC-103

M.Code : 10045

Date of Examination : 14-01-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Write briefly:**

a) Explain with illustration :

i) Symmetric Matrix ii) Skew symmetric Matrix

iii) Transpose of a Matrix iv) Unitary Matrix

b) Let A = {1, 2, 3, 4, 5, 6} B = {2, 4, 6, 8} then show that $A \setminus B \neq B \setminus A$.

c) Define Recurrence relation with example.

d) Solve $S(k) - 2S(k-1) + S(k-2) = 0$ where $S(0) = 1$, $S(1) = 2$.

e). If p stands for the statement, "I do not like coffee" and q stands for the statement, "I like tea". Then what does $\sim p \wedge q$ stands for ?

f) Show that maximum number of edges in a single graph with h vertices is $\frac{n(n+1)}{2}$.

g) Find all the partitions for set A = {a, b, c}.

h) Explain the concept of propositions over a universe.

i) Find X and Y if $X + Y = \begin{bmatrix} 7 & -2 \\ 2 & 6 \end{bmatrix}$

$$X - Y = \begin{bmatrix} 3 & 0 \\ 2 & 3 \end{bmatrix}$$

j) Define sample and multigraph with an example.

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SECTION – B

2. a) A college awarded 38 medals in Foot-ball, 15 in basket ball and 20 medals in cricket. If there medals went to a total of 58 men and only three men got medals in all the three sports, how many received medal in exactly two of the three sports?

b) Let $A = \{x : x \text{ is multiple of } 2, x \in N\}$

$B = \{x : x \text{ is multiple of } 5, x \in N\}$

$C = \{x : x \text{ is multiple of } 10, x \in N\}$

Then find $A \cup (B \cap C)$, $(A \cap B) \cap C$, $A \cup (B \cup C)$.

3. a) Test the validity of :

Unless we control population, all advances resulting from planning will be nullified bu this must not be allowed to happen. Therefore we must somehow control population.

b) Prove that $[(p \to q) \times (q \to r)] \Rightarrow (p \to r)$ is a tautology,

4. a) If $A = \begin{bmatrix} 0 & 1 & 2 \\ 2 & 3 & 4 \\ 4 & 5 & 6 \end{bmatrix}$ and $k_1 = 1$, $k_2 = 2$ then verify that $(k_1 + k_2)A = k_1A + k_2A$.

b) If $A = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ a & b & -1 \end{bmatrix}$ then determine A^2.

5. Prove that an undirected graph possesses a Eulerian circuit if and only if it is conn and has its vertices of even degree.

6. a) Prove that associativity holds over conjunction by using propositional calculus.

b) Solve $S(k) - 7s(k-1) + 10S(k-2) = 6 + 8k$ with $S(0) = 1$ and $S(1) = 2$.

7. Use the principle of mathematical Induction to prove that

$$1.3 + 2.4 + 3.5 + \ldots + n(n+2) = \frac{n(n+1)(2n+7)}{6}$$ for any natural number n.

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Dec - 2022

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Total No. of Questions : 07

Total No. of Pages : 02

B.Sc. (IT / Graphics & Web Designing) / BCA (Sem.–1)

MATHEMATICS

Subject Code : UGCA-1901

M.Code : 76961

Date of Examination : 10-01-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Write briefly :**

a) Define Power Set with an illustration.

b) What are tautologies, contradiction and contingent statements in algebra of logic?

c) Define Conjunction, Disjunction, Conditional Operator and Bi-Conditional Operator.

d) Define Addition and Multiplication of matrices with an example.

e) Which term in the A.P. 5, 2, –1, ... is – 22?

f) If 1/ b+c, 1/c+a, 1/a+b are inn A.P. then prove that a^2, b^2, c^2 are in A.P.

g) In a G.P., the third term is 24 and sixth term is 192. Find the tenth term.

h) If A, B are any sets, then $A \cap B = B$ if $B \subset A$.

i) State De-Morgan's Law for difference of sets.

j) Define tautology with an example.

(S3)-2231

SECTION-B

2. a) For given $A = \begin{bmatrix} 2 & -1 \\ -1 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 4 \\ -1 & 1 \end{bmatrix}$, Is the following statement true or false $(A + B)^2 = A^2 + B^2 + 2AB$.

b) Find the values of x, y, z and w for given $3\begin{bmatrix} x & y \\ z & w \end{bmatrix} = \begin{bmatrix} x & 6 \\ -1 & 2w \end{bmatrix} + \begin{bmatrix} 4 & x+y \\ z+w & 3 \end{bmatrix}$.

3. a) Out of 400 boys of a school, 112 played cricket, 120 played hockey and 168 played football of these 32 played both football and hockey, 40 played cricket and football, 20 played cricket and hockey, 12 played all the three games. How many boys did not play any game and how many play only one game?

b) State and Prove De-Morgan's law of sets.

4. a) Find the value of a_7 from the recurrence relation with $a_n = 2\,a_{(n-1)} + 3$ with $a_0 = 6$

b) If a, b, c are in A.P. and b, c, d are in G.P. and $1/c$, $1/d$, $1/e$ are in A.P. Prove that a, c, e are in G.P.

5. a) If $A = \begin{pmatrix} 2 \\ -4 \\ 5 \end{pmatrix}$ and $B = (6\ \ 3\ \ -1)$ then verify that $(AB)' = B'A'$

b) If $A = \begin{pmatrix} 3 & 2 & 5 \\ 4 & 1 & 3 \\ 0 & 6 & 7 \end{pmatrix}$ Express A as the sum of two matrices such that one is symmetric and other is skew – symmetric.

6. a) If $A = \begin{pmatrix} 1 & 3 & 2 \\ 0 & 5 & 7 \\ 6 & 4 & 8 \end{pmatrix}$ find the value of $A^2 + 7A + 3I$ here I denotes identity matrix.

b) Prove that it is $A \subset B$ if and only if $B^c \subset A^c$ where c denotes complement of set.

7. a) Prove that $(p \wedge q) \wedge \sim(p \vee q)$ is a fallacy.

b) Check the validity of the argument :

If I work, I cannot study. Either I work or pass mathematics. I passed mathematics. Therefore, I study.

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May - June - 2023

Roll No. [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

Total No. of Questions : 11

Total No. of Pages : 04

B.Voc. (Child Caregiver) / B.A.(JAMC) / BBA / BBA (Business Economics) / BBA (Event Management) / BBA (Rural Development) / BBA (SIM) / B.Com (Hons) / BCA / BHMCT / B.Sc. Hons. (Microbiology / Nutrition and Dietetics / Artificial Intelligence & Machine Learning / Bio Technology / Environment Science / Fashion Design / Graphics & Web Designing / Information Technology / Medical Lab Sciences / Operation Theatre Technology / Radiotherapy Technology / Bachelor of Tourism and Travel Management) (Sem.–1)

HUMAN VALUES, DE-ADDICTION & TRAFFIC RULES

Subject Code : HVPE-101-18

M.Code : 93322

Date of Examination : 21-01-23

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is compulsory.
2. SECTION-B contains FIVE questions. Each question carry FOUR marks. Attempt All.
3. SECTION-C contains FIVE questions with internal choice. Each question carry SIX marks. Attempt All.

SECTION-A

(10 × 1 = 10)

1. **Fill in the Blanks/True/False :**

a. Physical facilities are necessary but ..... for humans.

भौतिक सुविधाएं मनुष्य के लिए आवश्यक हैं, लेकिन ..... हैं।

ਭੌਤਿਕ ਸਹੂਲਤਾਂ ਮਨੁੱਖ ਲਈ ਜ਼ਰੂਰੀ ਹਨ, ਲੇਕਿਨ ..... ਹਨ।

b. Animal order in nature contains ..... and .....

प्रकृति में पशु आदेश में ..... और ..... होता है।

ਕੁਦਰਤ ਵਿੱਚ ਪਸ਼ੂ ਆਦੇਸ਼ ਵਿੱਚ ..... ਅਤੇ ..... ਹੁੰਦਾ ਹੈ।

c. Self-exploration is the process for ..... Education.

आत्म–अध्ययन ..... शिक्षा के लिए प्रक्रिया है।

ਸਵੈ–ਅਧਿਐਨ ..... ਸਿੱਖਿਆ ਲਈ ਪ੍ਰਕਿਰਿਆ ਹੈ।

d. To be in a state of liking is .....

पसंद के हिसाब से एक अवस्था में होना ..... है।

ਪਸੰਦ ਦੇ ਹਿਸਾਬ ਵਲੋਂ ਇੱਕ ਦਸ਼ਾ ਵਿੱਚ ਹੋਣਾ ..... ਹੈ।

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e. Right understanding + ... = Mutual prosperity.

सही समझ + ... = पारस्परिक समृद्धि।

ਠੀਕ ਸਮਝ + ... = ਆਪਸੀ ਖੁਸ਼ਹਾਲੀ।

Dec-2022

f. Existence is nature submerged in space.

अस्तित्व अंतरिक्ष में डूबी हुई प्रकृति है।

ਅਸਤਿਤਵ ਅੰਤਰਿਕ ਵਿੱਚ ਸਮਾਈ ਹੋਈ ਕੁਦਰਤ ਹੈ।

g. There is no self-regulation in Nature.

प्रकृति में कोई आत्म–नियमन नहीं है।

ਕੁਦਰਤ ਵਿੱਚ ਕੋਈ ਆਤਮ–ਨਿਯਮਤਾ ਨਹੀਂ ਹੈ।

h. Developing ethical competence in individual ensures professional ethics.

व्यक्ति में नैतिक क्षमता का विकास पेशेवर नैतिकता सुनिश्चित करता है।

ਵਿਅਕਤੀ ਵਿੱਚ ਨੈਤਿਕ ਸਮਰੱਥਾ ਦਾ ਵਿਕਾਸ ਪੇਸ਼ੇਵਰ ਨੈਤਿਕਤਾ ਪੱਕੀ ਕਰਦਾ ਹੈ।

i. Holistic technologies should be eco-friendly and people-friendly.

समग्र प्रौद्योगिकियाँ पर्यावरण के अनुकूल और लोगों के अनुकूल होना चाहिए।

ਸਰਬਾਂਗੀ ਤਕਨੀਕਾਂ ਪਰਿਆਵਰਣ ਦੇ ਅਨੁਕੂਲ ਅਤੇ ਲੋਕਾਂ ਦੇ ਅਨੁਕੂਲ ਹੋਣੀਆਂ ਚਾਹੀਦੀਆਂ ਹਨ।

j. The value "care" is related with body.

मूल्य "ध्यान" शरीर के साथ संबंधित है।

ਮੁੱਲ "ਧਿਆਨ" ਸਰੀਰ ਦੇ ਨਾਲ ਸੰਬੰਧਤ ਹੈ।

SECTION-B

(5 × 4 = 20)

2. What are the basic guidelines of value education?

मूल्य शिक्षा की बुनियादी दिशा–निर्देश क्या हैं?

ਮੁੱਲ ਸਿੱਖਿਆ ਦੇ ਬੁਨਿਆਦੀ ਦਿਸ਼ਾ–ਨਿਰਦੇਸ਼ ਕੀ ਹਨ?

3. Explain harmony in family.

परिवार में तालमेल के बारे में बताएं।

ਪਰਿਵਾਰ ਵਿੱਚ ਤਾਲਮੇਲ ਦੇ ਬਾਰੇ ਵਿੱਚ ਦੱਸੋ।

4. Differentiate between intention and competence. How do we come to confuse between the two?

इरादा और क्षमता के बीच क्या अंतर है? कैसे हम गलती करते हैं?

ਇਰਾਦਾ ਅਤੇ ਸਮਰੱਥਾ ਦੇ ਵਿੱਚ ਕੀ ਅੰਤਰ ਹੈ? ਕਿਵੇਂ ਅਸੀਂ ਗਲਤੀ ਕਰਦੇ ਹਾਂ?

5. Explain competence in Professional-Ethics.

पेशेवर नैतिकता में क्षमता समझाएं।

ਪੇਸ਼ੇਵਰ ਨੈਤਿਕਤਾ ਵਿੱਚ ਸਮਰੱਥਾ ਸਮਝਾਓ।

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May - June - 2023

Roll No. _____ Total No. of Pages : 02

Total No. of Questions : 07

BCA (Sem–2)

ENVIRONMENTAL STUDIES

Subject Code : EVS-102-18

M.Code : 77421

Date of Examination: 30-05-2023

Time : 3 Hrs. Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Write Briefly :

a) What is hurricane?

b) Name sources of Acid Rain.

c) What is Bio-sphere?

d) Name two major air pollutants.

e) What is an Eco-Mark?

f) What is sustainable development?

g) Name two ACTS in reference to environmental science.

h) Define Soil pollution.

i) Define Ozone Layer.

j) What is Population Explosion?

SECTION-B

2. Explain the role of awareness of students & teachers to tackle various environmental issues.

3. What are Alternate Energy Resources? Discuss.

4. Explain the types of Ecological succession.

5. What is an Earthquake? What are the causes of earthquakes?

6. What is Rain water harvesting? What are its advantages?

7. What are 'Hot spots of Bio-diversity'? Name the hotspots of our country.

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Total No. of Questions : 07

Total No. of Pages : 02

BCA (Sem–2)

COMPUTER SYSTEM ARCHITECTURE

Subject Code : UGCA-1908

M.Code : 77416

Date of Examination : 02-06-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Answer very briefly :**

   a) Define a NOT and NAND gate using diagram.

   b) What is a K-Map and write its use in boolean algebra.

   c) Mention any two benefits of demultiplexer.

   d) Show a parallel binary adder using a circuit diagram.

   e) What is encoding and decoding?

   f) How can we remove a race around condition?

   g) Mention the features of RISC architecture.

   h) Name the types of buses used in computer system architecture.

   i) Why is D-Flip flop used?

   j) What is the need of a register in computer system architecture?

SECTION-B

2. Explain the Logic Gates : XOR, XNOR, NAND and NOR with neat diagram for each.

3. Compare the execution of half adder/subtractor with a full-adder/subtractor.

4. Simplify the expression using K-maps : $F(A,B,C) = \sum(1,3,5,6,7)$.

5. Show the logic diagram and explain J-K flip-flop and R-S flip-flop.

6. Explain in detail the Von Neumann architecture.

7. Describe the data movement among registers using bus in a 16-bit common bus system.

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BCA (Sem–2)

COMPUTER SYSTEM ARCHITECTURE

Subject Code : UGCA-1908

M.Code : 77416

Date of Examination : 02-06-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Answer very briefly :**

a) Define a NOT and NAND gate using diagram.

b) What is a K-Map and write its use in boolean algebra.

c) Mention any two benefits of demultiplexer.

d) Show a parallel binary adder using a circuit diagram.

e) What is encoding and decoding?

f) How can we remove a race around condition?

g) Mention the features of RISC architecture.

h) Name the types of buses used in computer system architecture.

i) Why is D-Flip flop used?

j) What is the need of a register in computer system architecture?

SECTION-B

2. Explain the Logic Gates : XOR, XNOR, NAND and NOR with neat diagram for each.

3. Compare the execution of half adder/subtractor with a full-adder/subtractor.

4. Simplify the expression using K-maps : $F(A,B,C) = \sum(1,3,5,6,7)$.

5. Show the logic diagram and explain J-K flip-flop and R-S flip-flop.

6. Explain in detail the Von Neumann architecture.

7. Describe the data movement among registers using bus in a 16-bit common bus system.

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BCA (Sem–2)

OBJECT ORIENTED PROGRAMMING USING C++

Subject Code : UGCA-1909

M.Code : 77417

Date of Examination : 05-06-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Write Briefly :**

a) Explain with suitable example, syntax of for loop in C++.

b) Define member functions.

c) What is late binding?

d) What is the need of overloading operators and functions?

e) Explain data abstraction and encapsulation.

f) What is class and instance?

g) Write difference between object and classes.

h) Write an example of multiple inheritance.

i) How to open a file?

j) State use of new operator.

SECTION-B

2. a) Write down the example to overload unary and binary operators in C++.

b) Explain use of pointer in C++.

3. Compare procedural programming with object oriented programming for what type of application is the procedural programming is suitable and for what type OOP is suitable? Justify your answer.

4. Explain public, private and protected access specifiers and show their visibility when they are inherited as public, private and protected.

5. Illustrate the concept of inheritance by defining three classes student, exam and result, where result is inherited from exam and exam is inherited from student. Write possible constructors to initialize the values. Write a main function to test the constructor execution by creating objects.

6. What does Overloading means in C++? What are different forms of overloading? Give an example of each.

7. What are various types of files? What are the various modes in which a file can be opened? Explain by giving examples.

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BCA (Sem.–2)

FUNDAMENTALS OF STATISTICS

Subject Code : UGCA-1907

M.Code : 77415

Date of Examination : 07-06-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Write briefly :**

   a) Statistics

   b) Primary and Secondary data

   c) Ogive

   d) Objectives of classification

   e) Rounding off data

   f) Discrete Frequency Sistribution

   g) Mean deviation

   h) Range and its Coefficient

   i) Hannonic mean

   j) Median.

SECTION-B

2. Discuss the functions and importance of statistics

3. What are the different methods of collecting data? Explain briefly the various sources of collecting secondary data.

4. What are the components of a statistical table? State the general rules for the construction of a table.

5. Calculate Mean and Mode from the following data :

Marks: Below	20	30	40	50	60	70	80	90
No. of students:	4	16	56	97	124	137	146	150

6. Prices of a particular commodity n five years in two cities are given below :

Price in City A:	20	22	19	23	16
Price in City B:	10	20	18	12	15

From the above data find which city had more stable prices.

7. a) Following is the data about the market share of four brands of TV sets sold in Jalandhar. Present the data by a pie diagram :

Brands of TV sets	Samsung	LG	Onida	Sony
Units sold in Jalandhar	480	360	240	120

b) Draw less than type Ogive for the following data :

Weight (in kgs)	40-45	45-50	50-55	55-60	60-65	65-70	70-75
No. of students	3	5	9	12	5	4	2

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BCA (Sem–3)

COMPUTER NETWORKS

Subject Code : UGCA-1913

M.Code : 78179

Date of Examination : 21-06-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Write briefly :**

a) Compare parallel and serial transmission.

b) What is half duplex in communication?

c) Differentiate between LAN and WAN.

d) Give an example of cloud.

e) Define Distortion.

f) Write the use of SLIP protocol.

g) Discuss CSMA/CD.

h) Write any one application of shortest path routing.

i) Discuss Leaky bucket algorithm.

j) Compare OSI reference model with TCP/IP model.

SECTION-B

2. Explain different topologies in networks. Which is the best network topology?

3. a) Compare message switching and packet switching.

   b) What is the use of Multiplexing? Compare FDM with TDM.

4. What is wireless transmission? Explain the functioning of different transmission methods.

5. What are the services provided by data link layer? How error can be detected and corrected during data transmission?

6. Explain the IEEE Ethernet standards used in computer networks with their working.

7. Write the functioning of Network Layer. Explain the use of Cryptography.

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BCA (Sem–3)

PC ASSEMBLY & TROUBLESHOOTING

Subject Code : UGCA-1919

M.Code : 78185

Date of Examination : 10-06-2023

Time : 3 Hrs. Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Write briefly :**

   a) Computer basic hardware.

   b) Peripheral Devices.

   c) Dot Matrix vs. Inkjet Printer.

   d) Microcomputer Software Requirement.

   e) LAN Printer.

   f) Scanner.

   g) [illegible]TOS.

SECTION-B

2. What is Computer and its different components and their operations?

3. What is processor? What are the different steps to replace and install new processor? Also discuss Dos and Don'ts during the replacement process.

4. What is the use of motherboards in PC and its types? What are the different steps to replace and install new motherboard?

5. What is the difference between primary and secondary memory? What are the different problems with memory and their troubleshooting?

6. What is booting and its types? How trouble shoot failed boot before the OS load?

7. What are the different peripheral devices? How to connect it with a computer?

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BCA/B.Sc. (IT) (Sem–3)

PROGRAMMING IN PYTHON

Subject Code : UGCA-1914

M.Code : 78180

Date of Examination : 01-06-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Write Briefly :**

a) How is class instantiation done in Python?

b) What are the various types of files supported by Python?

c) What are docstrings?

d) Explain the utility of default arguments.

e) Explain the use of return statement.

f) Can a function call another function? Give example.

g) Write a program to find whether a given number is even or odd using if-else statement.

h) Write a program to extract a substring from an input string.

i) Differentiate between = and ==.

j) What are identifiers? List the rules to name an identifier.

SECTION-B

2. Discuss the history and origin of Python language. List the limitations of Python. Also, write about the major applications of Python.

3. Write a detailed note on operators and expressions in Python. Write about precedence and associativity of operators.

4. Write down the properties of lists. Discuss different ways in which lists can be created. With the help of an example explain the concept of nested lists.

5. What are modules? How do you use them in Python programs? What are packages in Python?

6. Explain any three built-in exceptions with relevant examples. How are user-defined exceptions created in Python?

7. Write a detailed note on garbage collection. What is the need of destroying objects?

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BCA (Sem–4)

DATABASE MANAGEMENT SYSTEMS

Subject Code : UGCA1922

M.Code : 79726

Date of Examination : 21-06-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Write briefly :**

a) Why is the use of DBMS recommended? Explain by listing some of its major advantages.

b) What is the purpose of SQL?

c) Explain the concept of ACID properties in DBMS.

d) What is the different type of relationships in the DBMS?

e) What is BCNF?

f) What is DBMS?

g) Do we consider NULL values the same as that of blank space or zero?

h) What is distributed database?

i) How database triggers are used?

j) Explain the terms specialization and generalization.

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SECTION-B

2. What is the purpose of normalization in DBMS? How BCNF is different from 3NF? Explain with example.

3. What are the different types of keys in the database? Out of these keys which one are used in normalization. Explain any two normal forms using keys.

4. **Consider the Sailors-Boats-Reserves Database given below with name and fields:**

s (sid, sname, rating, age)

b (bid, bname, color)

r (sid, bid, date)

Write each of the following queries in SQL along with the explanation for each.

a) Find all sailor id's of sailors who have a rating of at least 8 or reserved boat with id 103.

b) Find the sailor id's of sailors with age over 20 who have not reserved a boat whose name includes the string "thunder".

c) Find the sailor id's of sailors whose rating is better than some sailor called Bob.

d) Find the colors of boats reserved by Albert.

5. Consider Dean Academic Affairs (DAA) office of your institute that maintains data about the following entities: (a) courses, including number, title, credits, syllabus and prerequisites; (b) course offerings, including course number, year, semester, section number, instructor(s), timings and classroom; (c) students, including student-id, name and program and (d) instructors, including identification number, name, department and title. Further, the enrolement of students in courses and grades awarded to students in each course they are enrolled for must be appropriately modelled. Construct an E-R diagram for the DAA office. Document all assumptions that you make about the mapping constraints. Can we have a weak entity in the given scenario?

6. What is concurrency management? Explain 2PL in detail.

7. Explain join dependency and how they are maintained?

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BCA / B.Sc. (Information Technology) (Sem–4)

WEB DESIGNING

Subject Code : UGCA1927

M.Code : 79731

Date of Examination : 19-06-2023

Time : 3 Hrs. Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **What will the output of following code segment be?**

   a. What is hypertext?

   b. How do you change text style in HTML?

   c. What do you mean by ordered list?

   d. What is the purpose of the colspan attribute of the <th> tag?

   e. Which tag is used to define a link?

   f. What is external document reference?

   g. What does the src attribute of <frame> specify?

   h. What is reset button?

   i. What do you mean by user defined object?

   j. What is String object?

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SECTION-B

2. Create an HTML document to describe an unordered list of at least four states. Each element of the list must have a nested list of at least three cities in the state.

3. What is the purpose of cascading style sheets? Explain in detail.

4. Explain five basic formatting tags used to design an HTML document.

5. Create and test an HTML document that contains at least three lines of text. First line of the text must be green, second line must be blue and every noun must be yellow.

6. **Write a JavaScript for the following :**

   a. To reverse a string.

   b. To find the factorial of a given number.

7. **Create an HTML document that has a form with the following widgets :**

   a. A text widget to collect the user's name

   b. A collection of three radio buttons that are labeled as follows :

      i. Visa

      ii. Mastercard

      iii. Discover.

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BCA (Sem–4)

SOFTWARE ENGINEERING

Subject Code : UGCA1921

M.Code : 79725

Date of Examination : 15-06-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Write briefly :**

a) What is software? Explain with an example.

b) What is SRS and why it is used?

c) What is testing and when it is used?

d) What are the metrics used for software testing?

e) How decision tree is used in software engineering?

f) What are characteristics of a good software design?

g) How software cost estimation is done?

h) What is software maintenance?

i) Which metric is used for design model?

j) Define Software Engineering.

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SECTION-B

2. In 2017, a well-known organization 'A' is planning to develop a large product 'B'. Product 'B' would be comparable to a well-known Product 'C' but would be targeted to Operating system 'D'. At this time, no other vendor is planning to develop such product for operating system 'D'. What life cycle model would you use? Briefly justify you answer and also explain the model.

3. Discuss various metrics that are used for maintenance, give example.

4. Consider two components A and B. Two software engineers, Laurel and Hardy, measure the dependences between A and B. Laurel uses these dependences when computing cohesion, and Hardy uses these dependences when computing coupling. Laurel is considering a larger module C that contains both A and B as implementation details. Hardy is considering the implementaion of C, and thinking of A and B as modules. Out of Laurel and Hardy who is performing a sensible and useful computation and why?

5. What is software testing? Discuss the role of software testing during software life cycle and why is it so difficult?

6. What is the difference between White and Black Box testing? Discuss with an example.

7. a) What is software cost estimation and how it is measured. Give example to support your answer.

   b) What are properties of a good SRS. Give example to support your answer.

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BCA (Sem.–5)

PROGRAMMING IN PHP

Subject Code : UGCA-1929

M.Code : 90312

Date of Examination: 26-05-2023

Time : 3 Hrs. Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Write briefly :**

a) Which Tag is used to embed PHP in HTML program?

b) What is the basic syntax of PHP Program?

c) What is the Use of Hidden Field?

d) Define Dynamic Function.

e) How we can compare two strings in PHP?

f) Define Array.

g) What is the need of MySQL?

h) Define DML.

i) What is the need of POST method?

j) Write syntax of foreach() loop.

SECTION-B

2. Explain various types of data types we can use in PHP and how we can change data type with Set type?

3. Explain various string functions and write a program to check the input string is palindrome or not.

4. Explain various types of arrays and write a program to find greatest element from an array.

5. Explain various File handling functions of PHP & Write a program to copy one file into another.

6. Write a code in PHP to input Name, Roll no, Marks in the MySQL table. And also explain the steps to connect MySQL database with PHP program.

7. Discuss the basic concepts of graphics and write a program in PHP to draw Line, Rectangle, Arc and Polygon.

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BCA (Sem.–5)

COMPUTER GRAPHICS

Subject Code : UGCA-1934

M.Code : 90317

Date of Examination : 24-05-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Write briefly:**

a) What are the advantages and disadvantages of touch screen input devices?

b) How do virtual reality environments affect user perception and interaction with digital content?

c) How does anti-aliasing improve the quality of scan-converted circles?

d) What is the purpose of clipping in computer graphics and what are the common types of clipping?

e) What is the difference between affine and projective transformations in 3D graphics?

f) What are some of the challenges in implementing parallel projection in real-time app-lications?

g) How do algorithms for ellipse drawing differ from those for circle drawing?

h) What are some limitations of filling algorithms?

i) What advantages did CRT displays have over early flat panel displays?

j) How do DDA line drawing algorithm works?

SECTION-B

2. How do matrix operations represent 2D transformations, such as translation, rotation, scaling, and shearing? What are the resulting coordinates for the line segment with end points (3, 4) & (7, 5) rotated around the origin by 60 degrees counterclockwise?

3. What are some common circle-drawing algorithms and how do they work? Explain the concept of Mid-point.

4. How do CRT displays differ from modern flat panel displays? What is the difference between working of a LCD, LED and OLED flat panel display?

5. How do matrix operations represent 3D transformations, such as translation, rotation, scaling, and shearing? Illustrate. How do different 3D transformations differ from respective 2D transformations?

6. How do Cohen-Sutherland and Liang-Barsky clipping algorithms work, and what are their strengths and weaknesses? Given the line segment with endpoints (2, 5) and (12, 8), and the clipping region defined by the four inequalities x >= 3, x <= 9, y >= 2, and y <= 7, apply the Liang-Barsky algorithm to clip the line segment.

7. How do different input devices affect user interaction with computer systems? Discuss different types of modern day input devices.

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BCA (Sem–5)

PROGRAMMING IN JAVA

Subject Code : UGCA1932

M.Code : 90315

Date of Examination : 22-06-2023

Time : 3 Hrs. Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.**

SECTION-A

1. **Write briefly :**

   a) What are the benefits of OOP?

   b) How Java differs from C++?

   c) Write about Window Listener Event Handling.

   d) How web browsers are used in Java?

   e) What is JVM?

   f) What are Zagged Arrays?

   g) What is a Package? How Packages are useful in Java?

   h) Define polymorphism with an example.

   i) What is an Abstract class?

   j) How Java Byte Code makes it independent?

SECTION-B

2. **Explain the following :**

   a) Constructors and their syntax

   b) Methods Overloading

3. Discuss various loop statements and branching statements available in Java. Show their syntax.

4. Discuss various operators and expressions available in Java and write their syntax.

5. What is Java I/O handling? Write about data I/P and data O/P streams.

6. Create a Date class in Java having day, month and year data members. Create constructors for initializing data members, functions for validating date, getting values of data members and displaying the date.

7. Explain with examples, the various graphics methods supported by AWT. How color of an object can be changed?

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BCA (Sem.–5)
INTERNET OF THINGS
Subject Code : UGCA1933
M.Code : 90316
Date of Examination : 07-06-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :
1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Write briefly :**

   a. What is basic difference between M2M and IoT?

   b. Define term embedded system.

   c. What is the role of communication protocols in IoT systems?

   d. Define Raspberry.

   e. Define role of cloud based applications in IoT system.

   f. Explain role of IoT systems in home automation.

   g. Define network management protocols.

   h. Define SPI interface.

   i. Define NETCONF.

   j. What is the usage of M2M gateway?

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SECTION-B

2. Explain the different levels of IoT in detail with the help of suitable examples.

3. Propose an IoT solution for smart agriculture for a crop management (highlight the existing system where human interaction is involved and how an IoT system can overcome it), also explain how the proposed IoT solution will help the farmers to increase productivity of the crops.

4. Explain Domain specific IoTs-City and Environment.

5. Define need for IoT system management and explain simple network management protocols in detail.

6. Explain cloud storage models and communication APIs.

7. Explain the technologies and applications of IoT.

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BCA (Sem–6)

ANDROID PROGRAMMING

Subject Code : UGCA-1943

M.Code : 91681

Date of Examination : 29-05-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.**

SECTION-A

1. Answer the following :

a) List some features of Android operating system.

b) What content the values folder contains in the directory structure of an android project?

c) What is the use of Spinner View in Android?

d) List the attributes specified by activity element of AndroidManifest.xml file.

e) Give an example to use on Create() method.

f) List various components of a User Interface of an android project.

g) What are the four essential activity states during lifecycle of an android app?

h) Mention some key design principles for a mobile application development.

i) What do you mean by "Modifiability" in mobile applications?

j) What is Android Emulator?

SECTION-B

2. List and explain some commonly used layouts in Android with suitable examples.

3. Explain various components of the android architecture with neat diagram.

4. List and explain the steps to develop an android application using DatePicker widget.

5. What is the advantage of integrating cloud services for Android application development? Explain the integration process in detail.

6. a) List and discuss various testing methodologies used for mobile applications.

   b) Explain Mobile Software Engineering phases for mobile applications in detail.

7. **Write short notes on:**

   a) Leveraging Android XML

   b) Security issues in mobile applications.

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BCA (Sem–6)

INFORMATION SECURITY

Subject Code : UGCA 1948

M.Code : 91695

Date of Examination: 27-05-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Write Briefly :**

   a) What is Security Assurance?

   b) Define Intruder.

   c) Define role of cryptography.

   d) Who are called Computer Criminals?

   e) What is Information Security?

   f) What are Threats in Network?

   g) Explain Software Failures.

   h) Differentiate between authentication and authorization.

   i) What is an Attack?

   j) What are the Rights of Employees and Employers in Administering Security?

SECTION-B

2. Discuss the File protection mechanisms in detail?

3. Discuss different steps involved in Security System Development Life cycle?

4. With the suitable example illustrate the effect of Virus and their types the computer System.

5. Explain the principle of Public Key Cryptosystem? Write the fundamentals of RSA Algorithm?

6. Give the overview of Firewalls. What are its design principle and its types?

7. **Explain:**

   a) Electronic Mail Security

   b) Web Security.

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Total No. of Pages : 02

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Bachelor of Computer Applications (Sem.–6)

DIGITAL MARKETING

Subject Code : UGCA1947

M.Code : 91691

Date of Examination : 25-05-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Write briefly :**

   a) Marketing

   b) SEO

   c) Google rankings

   d) P-O-E-M Framework

   e) Blogging

   f) Social media engagement

   g) Role of adverts

   h) Display media

   i) Paid search

   j) LinkedIn marketing.

SECTION-B

2. What is the digital marketing landscape in India? What are the skills required in digital Marketing?

3. Discuss the various types of social media websites. What are the do's & don'ts of social media?

4. What are the various techniques of blogging? What blogging platforms would you recommend to a new blogger?

5. What is the role of adverts in Facebook marketing? How can the scheduling & targeting of adverts be done?

6. What is the history of web analytic tools? What are their pitfalls?

7. Discuss the various content creation tools & apps. What are the challenges of content marketing?

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Total No. of Questions : 07

Total No. of Pages : 02

BCA (Sem.–6)

CYBER LAWS & IPR

Subject Code : UGCA-1949

M.Code : 91696

Date of Examination : 18-05-23

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.**

SECTION-A

1. **Write briefly :**

a) What is the Computer Fraud and Abuse Act and how does it define computer crimes?

b) What is a trademark and how is it different from a copyright?

c) How are patents granted and what types of inventions can be patented?

d) What is the difference between a cybercrime and a traditional crime?

e) What is cyber bullying and what laws are in place to protect individuals from it?

f) What is identity theft and what laws are in place to protect individuals from it?

g) What is malware and what laws are in place to prevent its creation and distribution?

h) What are phishing and what are some common strategies used by cybercriminals to carry out phishing attacks?

i) What is ransomware and how can individuals and organizations protect themselves from it?

j) What is the Information Technology Act and when was it enacted in India?

SECTION-B

2. How has the Information Technology Act of 2000 impacted the development of India's IT and digital industries and what are some of the key provisions of the act that have helped to promote cyber security and data protection in the country?

3. What are some of the key issues related to online privacy, including data collection, surveillance and the use of personal information by third parties and what legal frameworks and technologies exist to protect privacy rights in the digital age?

4. How do open source software licenses, such as the General Public License (GPL), impact the distribution and use of software code and what are some of the key benefits and challenges of using open source software in commercial and non-commercial contexts?

5. How are patent disputes resolved and what legal remedies are available to patent holders in cases of infringement or misappropriation of patented technology by third parties?

6. What is a trademark and how does it differ from other types of intellectual property, such as patents and copyrights?

7. What are some of the key issues related to privacy rights in the digital age and what strategies can individuals and organizations use to protect their privacy rights in these contexts?

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Total No. of Pages : 2

Total No. of Questions : 07

B.Sc (GWD) (Sem.–6)

INTRODUCTION TO GAMING

Subject Code : UGWD-1918

M.Code : 92000

Date of Examination : 16-05-2023

Max. Marks : 60

Time : 3 Hrs.

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Write briefly :**

   a) How do you define the Gaming Industry?

   b) Which languages are must to develop a game?

   c) State some different genres of Gaming.

   d) Is there a career in Gaming Industry?

   e) State any 2 different roles which exist in Game development.

   f) Name a popular game and state the programming language used on it.

   g) What do you mean by Level design?

   h) What are Video game platforms?

   i) What Elements constitute a Game?

   j) State some real life examples of level design.

SECTION-B

2. Give introduction to different theories of Game Scripting in detail.

3. Illustrate the Case study of any popular Game showcasing all the concepts of game design and elements of a game.

4. Explain all the different roles of Game development in detail.

5. Illustrate a general overview of what fields exists in programming for games and how they differ from each other?

6. What is a Game? Explain its history by giving examples and popular titles used for it.

7. Explain all genres of Gaming in detail and different platforms where they exist and how they differ?

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Nov/ Dec -2023

BCA (Sem.–1)

PROBLEM SOLVING USING C

Subject Code : UGCA-1903

M.Code : 76963

Date of Examination: 12-12-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Write briefly :**

a) What is a variable? Illustrate with an example.

b) What is the importance of keywords in C?

c) Explain in brief about Symbolic Constants.

d). What are Nested loops?

e) What is use of switch statement in C?

f) Differentiate between Break and Continue statements.

g) Write advantages of Arrays.

h) What do you mean by function prototypes?

i) Differentiate between arrays and structures.

j) What are the uses of pointer?

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SECTION-B

2. **Write a detailed note on following :**

a) Flowcharts

b) Decision Trees

3. **Explain the following Operators in C Language with suitable examples :**

a) Arithmetic

b) Unary

c) Logical

4. **Explain the following control flow statements with a suitable C program :**

a) While

b) For

5. What do you mean by Recursion? What is the use of Recursion in C programs? Write a program to find factorial of a number using Recursion.

6. Write a detailed note on various storage classes available in C language.

7. a) What is a pointer? Explain how the pointer variable its declared and initialized?

b) Write a program in C to find the sum and mean of all elements in an array using pointers.

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B.Sc. (IT)/ Graphics & Web Designing / BCA (Sem–1)

MATHEMATICS

Subject Code : UGCA1901

M.Code : 76961

Date of Examination : 20-12-2023

Time : 3 Hrs. Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Attempt the following :**

a) Define Disjoint Set

b) If $A = \{1, 2\}$ & $B = \{2, 5\}$, find $A \cup B$.

c) Define Power set.

d) Write the negative statement of "Sun rises from east."

e) Write the truth table for Conjunction.

f) Define Square Matrix.

g) If $X = \begin{bmatrix} 2 & 3 \\ -1 & 4 \end{bmatrix}$ & $Y = \begin{bmatrix} 1 & 0 \\ -2 & 3 \end{bmatrix}$, then find $X + Y$.

h) If $A = \begin{bmatrix} -1 & 2 \\ -3 & 4 \end{bmatrix}$, Find the transpose of A.

i) Find the fourth term in the sequence 4, 9, 14, ... Of A.P.

j) Define Geometric mean.

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SECTION - B

2. If $U = \{1,2,3,4,5,6,7,8,9\}$, $X = \{1,2,7,8\}$ & $Y = \{2,5,8,9\}$. Find $X \cap Y$, $X - Y$, Y

3. Prove that : $p \wedge (q \vee r) = (p \vee q) V (p \wedge r)$.

4. If $X = \begin{bmatrix} 5 & 2 & -3 \\ 1 & 0 & 6 \\ -5 & 1 & 7 \end{bmatrix}$, $Y = \begin{bmatrix} 3 & -2 & 6 \\ 2 & 7 & -1 \\ 5 & 4 & 0 \end{bmatrix}$, then find XY.

5. If $A = \begin{bmatrix} 4 & 2 & -3 \\ 1 & 3 & -6 \\ -5 & 0 & -7 \end{bmatrix}$, $B = \begin{bmatrix} 0 & -2 & -1 \\ 1 & 3 & 0 \\ -5 & 0 & -7 \end{bmatrix}$, then find $4A - 3B$.

6. The 7th term of an A.P. is 20 and its 13th term is 32. Find the A.P.

7. The 3rd and 8th term of a G.P. are 4 and 128 resp. Find the G.P.

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B.Sc. (IT/ Graphics & Web Designing)/ BCA (Sem.–1)

FUNDAMENTALS OF COMPUTER AND IT

Subject Code : UGCA1902

M.Code : 76962

Date of Examination : 22-12-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1) **Write briefly :**

a) What is primary memory?

b) What is control panel?

c) What is the difference between System and Application software?

d) What is the difference between save and save as?

e) What is Booting Process?

f) Explain system bus.

g) Write the name of 5 components that we mostly see on a Motherboard.

h) Discuss use of Motherboard.

i) What for find and replace is used in Word?

j) Define cache memory.

SECTION-B

2. a) What is the difference between primary and secondary memory?

   b) What is the difference between a ROM and RAM?

3. What are the different types of charts in MS-Excel? And write steps to insert chart in Excel Sheet.

4. a) Convert $(A0B4)_{16}$ to $(?)_2$, $(?)_8$, $(?)_{10}$.

   b) Explain the printing mechanism of a laser printer.

5. a) What is the role of IT in education?

   b) Explain input and output devices.

6. **Write short note on :**

   a) Describe the complete process of Mail Merge.

   b) What is cell reference? Explain its advantages.

   Explain Electronic Payment and various methods of electronic payment.

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B.Voc.(Beauty Therapy and Aesthetics)/BA(J&MC)/ BBA/ BBA(SIM)/ B.Com. Hons./ BCA/BHMCT/ B.Sc.(Honours)/ B.Sc.(Nutrition & Dietetics)/ B.Sc.(AI&ML)/B.Sc. Biotechnology/B.Sc.(FD) /B.Sc.(Graphics & Web Designing) B.Sc.(IT)/ B.Sc.(MLS)/ BTTM (Sem.- 1)

ENGLISH

Subject Code : BTHU103-18

M.Code : 75085

Date of Examination: 01-01-2024

Time : 3 Hrs. Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. All questions are COMPULSORY.
2. Q1, Q2 and Q3 carry TEN marks each.
3. Q4 and Q5 carry FIFTEEN marks each.

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1. Elaborate theory of communication.
2. Differentiate in detail between personal and business communication.
3. **Read the following passage carefully and answer the questions that follow :**

Certain people consciously or unconsciously cherish the desire that some part of their work and of their accomplishment will outlive their own individual life. The influence which they have exercised on the world in which they lived, the concern which they have built up, the books which they have written, the work they have laid as a part of some scientific edifice, whose completion they themselves will not live to see all such things inspire the people that some aspect of themselves will outlast their own personal existence, the artist bequeaths his pictures, the scholar his contribution of knowledge while poets and composers are primarily concerned that posterity shall take pleasure in their creations. Statesmen envisage that particular agreement in whose development they themselves had played a crucial part will preserve their names for future generations. People are not unconcerned for their posthumous reputation. An old person is distinctly preoccupied with this question and keeps a zealous watch to ensure that his achievement is properly quoted and recorded.

a) What do certain people cherish about?

b) What does a statesman envisage?

c) What do old people do?

d) Use "edifice" and "bequeaths" in your own sentences.

e) Give main idea of the passage.

4. Write a letter to your friend about how to prevent youth from addiction to drugs. Discuss specifically what steps the society can take.
5. Draft a report on environmental pollution and how can we save the environment.

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BBA / B.Com (Hons) / BCA / BHMCT / B.Sc. Hons. (Microbiology / AI & Machine Learning / Bio Technology / Fashion Design / Graphics & Web Designing / IT / Medical Lab Sciences / Operation Theatre Technology)/ BTTM / M.Com (Sem.–1)

HUMAN VALUES, DE-ADDICTION & TRAFFIC RULES

Subject Code : HVPE-101-18

M.Code : 75087

Date of Examination : 04-01-24

Time : 3 Hrs. Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is compulsory.
2. SECTION-B contains FIVE questions. Each question carry FOUR marks. Attempt All.
3. SECTION-C contains FIVE questions with internal choice. Each question carry SIX marks. Attempt All.

SECTION-A (10 × 1 = 10)

1. Answer the following :

a. What is value education?
मूल्य शिक्षा क्या है?
ਮੁੱਲ ਸਿੱਖਿਆ ਕੀ ਹੈ?

b. What is prosperity?
समृद्धि क्या है?
ਖੁਸ਼ਹਾਲੀ ਕੀ ਹੈ?

c. What do you mean by physical facilities?
भौतिक सुविधाओं से आप क्या समझते हैं?
ਭੌਤਿਕ ਸਹੂਲਤਾਂ ਤੋਂ ਤੁਹਾਡਾ ਕੀ ਮਤਲਬ ਹੈ?

d. What is coexistence?
सह-अस्तित्व क्या है?
ਸਹਿਹੋਂਦ ਕੀ ਹੈ?

e. What is an all-encompassing solution?
सर्वव्यापी समाधान क्या है?
ਇੱਕ ਸਰਵਭੌਮਿਕ ਹੱਲ ਕੀ ਹੈ?

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f. What is self regulation?
स्वनियमन क्या है?
ਸਵੈ ਨਿਯਮ ਕੀ ਹੈ?

g. Differentiate between fame and respect.
प्रसिद्धि और सम्मान के बीच अंतर करें।
ਪ੍ਰਸਿੱਧੀ ਅਤੇ ਇੱਜ਼ਤ ਵਿਚਕਾਰ ਫ਼ਰਕ ਕਰੋ।

h. What is Animal Order?
जीव आदेश क्या है?
ਜੀਵ ਆਦੇਸ ਕੀ ਹੈ?

i. What is Mutual Prosperity?
पारस्परिक समृद्धि क्या है?
ਆਪਸੀ ਖੁਸ਼ਹਾਲੀ ਕੀ ਹੈ?

j. What is Utility-Value?
उपयोगिता-मूल्य क्या है?
ਉਪਯੋਗਿਤਾ-ਮੁੱਲ ਕੀ ਹੈ?

SECTION-B (5 × 4 = 20)

2. Write a short note on the concept of preservation.
संरक्षण की अवधारणा पर संक्षिप्त टिप्पणी लिखिए।
ਸੰਭਾਲ ਦੀ ਧਾਰਨਾ 'ਤੇ ਛੋਟਾ ਨੋਟ ਲਿਖੋ।

3. Explain harmony in family.
परिवार मे तालमेल के बारे में बताएं।
ਪਰਿਵਾਰ ਵਿੱਚ ਤਾਲਮੇਲ ਦੇ ਬਾਰੇ ਵਿੱਚ ਦੱਸੋ।

4. How there is Recyclability and Self-Regulation in Nature?
प्रकृति में आत्म नियमन और पुनरावृत्ति कैसे है?
ਕੁਦਰਤ ਵਿੱਚ ਆਤਮ-ਨਿਯਮਤਾ ਅਤੇ ਚੱਕਰੀ-ਕ੍ਰਮ ਕਿਵੇਂ ਹੈ?

5. What are the basic guidelines of value education?
मूल्य शिक्षा के बुनियादी दिशानिर्देश क्या है?
ਮੁੱਲ ਸਿੱਖਿਆ ਦੇ ਬੁਨਿਆਦੀ ਦਿਸ਼ਾਨਿਰਦੇਸ਼ ਕੀ ਹਨ?

6. What can be the basis of undivided society-the 'world family'?
अखण्ड समाज-'विश्व परिवार' का आधार क्या हो सकता है?
ਅਣਵੰਡੇ ਸਮਾਜ-'ਸੰਸਾਰ ਪਰਿਵਾਰ' ਦਾ ਆਧਾਰ ਕੀ ਹੋ ਸਕਦਾ ਹੈ?

SECTION-C (6 × 5 = 30)

7. Right understanding in the individuals is a basis for harmony in the family. Which is the building block for harmony in society? Give your comments.

व्यक्तियों में सही समझ ही परिवार में सामंजस्य का आधार है। समाज में समरसता का आधार कौन सा है? अपनी टिप्पणियाँ दीजिये।

ਵਿਅਕਤੀਆਂ ਵਿੱਚ ਸਹੀ ਸਮਝ ਪਰਿਵਾਰ ਵਿੱਚ ਸਦਭਾਵਨਾ ਦਾ ਆਧਾਰ ਹੈ। ਸਮਾਜ ਵਿੱਚ ਸਦਭਾਵਨਾ ਦਾ ਨਿਰਮਾਣ ਬਲਾਕ ਕਿਹੜਾ ਹੈ? ਆਪਣੀਆਂ ਟਿੱਪਣੀਆਂ ਦਿਓ।

OR

What is the need of Value-Education?

मूल्य शिक्षा की क्या जरूरत है?

ਮੂਲ ਸਿਖਿਆ ਦੀ ਕੀ ਲੋੜ ਹੈ?

8. Critically examine the state of society today in context with fulfillment of the comprehensive human goal.

व्यापक मानवीय लक्ष्य की पूर्ति के सन्दर्भ में आज समाज की स्थिति का आलोचनात्मक परीक्षण करें।

ਵਿਆਪਕ ਮਨੁਖੀ ਟੀਚੇ ਦੀ ਪੂਰਤੀ ਦੇ ਸੰਦਰਭ ਵਿੱਚ ਅੱਜ ਸਮਾਜ ਦੀ ਸਥਿਤੀ ਦੀ ਆਲੋਚਨਾਤਮਕ ਨਾਪ ਕਰੋ।

OR

How is a human-being co-existence of Self and Body? Explain Pre-Conditioning, Sensation and Natural-Acceptance.

देखा स्वयं और शरीर का सह-अस्तित्व कैसे है? पूर्व-मान्यता, संवेदना और प्राकृतिक-स्वीकृति समझाओ।

ਮਨੁੱਖ ਸਵੈ ਅਤੇ ਸਰੀਰ ਦਾ ਸਹਿ-ਅਸਤਿਤਵ ਕਿਵੇਂ ਹੈ? ਪੂਰਵ-ਮਾਨਤਾ, ਸੰਵੇਦਨਾ ਅਤੇ ਸਹਿਜ-ਸਵੀਕਾਰਿਤੀ ਸਮਝਾਓ।

9. Compare the Four Orders in Nature on the basis of their salient aspects.

मुख्य वस्तुओं के आधार पर प्रकृति में चार आदेशों की तुलना करें।

ਮੁੱਖ ਵਸਤੂਆਂ ਦੇ ਆਧਾਰ ਉੱਤੇ ਕੁਦਰਤ ਵਿੱਚ ਚਾਰ ਆਦੇਸ਼ਾਂ ਦੀ ਤੁਲਨਾ ਕਰੋ।

OR

What do you mean by reaction and response? Give some examples.

आपका प्रतिक्रिया और अनुक्रिया से क्या मतलब है? कुछ उदाहरण दें।

ਤੁਹਾਡਾ ਪੁਰਤਰ-ਕਿਰਿਆ ਅਤੇ ਪੂਰਤੀ-ਕਿਰਿਆ ਤੋਂ ਕੀ ਮਤਲਬ ਹੈ? ਇਸ ਦੇ ਕੁਝ ਉਦਾਹਰਣ ਦਿਓ?

10. What is happiness and prosperity? What are the wrong notions about attaining happiness and prosperity?

सुख और समृद्धि क्या है? सुख और समृद्धि को प्राप्त करने के बारे में गलत धारणा क्या है?

ਖੁਸ਼ੀ ਅਤੇ ਖੁਸ਼ਹਾਲੀ ਕੀ ਹੈ? ਖੁਸ਼ੀ ਅਤੇ ਖੁਸ਼ਹਾਲੀ ਨੂੰ ਪ੍ਰਾਪਤ ਕਰਨ ਦੇ ਬਾਰੇ ਗਲਤ ਧਾਰਨਾ ਕੀ ਹੈ?

OR

What are the problems faced due to the wrong notions about happiness and prosperity?

सुख और समृद्धि के बारे में गलत धारणाओं के कारण पेश आ रही समस्याएं क्या हैं?

ਖੁਸ਼ੀ ਅਤੇ ਖੁਸ਼ਹਾਲੀ ਦੇ ਬਾਰੇ ਗਲਤ ਧਾਰਨਾਵਾਂ ਦੇ ਕਾਰਨ ਕੀ ਸਮੱਸਿਆਵਾਂ ਪੇਸ਼ ਆ ਰਹੀਆਂ ਹਨ?

11. Draw the chart showing in detail, the different categories of units of nature in coexistence in space. What is your role in existence?

अंतरिक्ष में सह-अस्तित्व में प्रकृति की इकाइयों की विभिन्न श्रेणियों को विस्तार से दर्शाने वाला चार्ट बनाएं। अस्तित्व में आपकी क्या भूमिका है?

ਪੁਲਾੜ ਵਿੱਚ ਸਹਿ-ਹੋਂਦ ਵਿੱਚ ਕੁਦਰਤ ਦੀਆਂ ਇਕਾਈਆਂ ਦੀਆਂ ਵੱਖ-ਵੱਖ ਸ਼੍ਰੇਣੀਆਂ ਨੂੰ ਵਿਸਤਾਰ ਵਿੱਚ ਵਿਖਾਉਂਦੇ ਹੋਏ ਚਾਰਟ ਬਣਾਓ। ਹੋਂਦ ਵਿੱਚ ਤੁਹਾਡੀ ਕੀ ਭੂਮਿਕਾ ਹੈ?

OR

What in your opinion, is an effective way of ensuring prosperity in the family? What programs can you undertake in this respect?

आपकी राय में, परिवार में समृद्धि सुनिश्चित करने का एक प्रभावी तरीका क्या है? इस संबंध में आप कौन से कार्यक्रम अपना सकते हैं?

ਤੁਹਾਡੇ ਵਿਚਾਰ ਵਿੱਚ, ਪਰਿਵਾਰ ਵਿੱਚ ਖੁਸ਼ਹਾਲੀ ਨੂੰ ਯਕੀਨੀ ਬਣਾਉਣ ਦਾ ਇੱਕ ਪ੍ਰਭਾਵਸ਼ਾਲੀ ਤਰੀਕਾ ਕੀ ਹੈ? ਇਸ ਸੰਬੰਧ ਵਿਚ ਤੁਸੀਂ ਕਿਹੜੇ ਪ੍ਰੋਗਰਾਮ ਲੈ ਸਕਦੇ ਹੋ?

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BCA (Sem.–2)

FUNDAMENTALS OF STATISTICS

Subject Code : UGCA-1907

M.Code : 77415

Date of Examination: 17-11-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Answer briefly :**

a) Differentiate between primary data and secondary data.

b) How will you check the authenticity of secondary data?

c) *"Statistics can prove anything"* Discuss this statement.

d) Give formula to calculate mean, median and mode in individual discrete and continuous series.

e) Which method of Central tendency out of mean, median and mode do you consider to be the best and why?

f) The daily pocket allowance (in Rs) of 10 students is given below:

15	20	30	22	25	18	40	50	55	65

Calculate the A.M. by taking 40 as assumed mean.

g) Write down the formula to calculate D_7 and P_{45} in continuous series.

h) List down the merits and demerits of Median.

i) Importance of measure of Dispersion.

j) What is meant by Coefficient of Variation? What is its usefulness?

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SECTION-B

2. *"Statistics affects everybody and touches life at every place"* discuss the importance of statistics in light of the above stated statement.

3. Explain the various methods for collecting primary data and secondary data.

4. **From the following data construct histogram and frequency polygon:**

Life of bulbs(in hrs)	800 to 1000	1000 to 1200	1200 to 1400	1400 to 1600	1600 to 1800	1800 to 2000	2000 to 2200
No. of bulbs	6	10	24	30	20	6	4

5. A class of 16 boys and 16 girls were given a common intelligence test and the following marks were obtained :

Sr. No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Boys	15	35	43	46	48	48	49	50	55	56	60	64	71	75	80	85
Girls	10	30	45	52	55	58	61	61	63	69	70	72	74	75	75	90

Calculate the Median marks of boys and girls.

6. Calculate the Mode for the following data:

Class	20-24	25-29	30-34	35-39	40-44	45-49
Frequency	3	6	5	14	7	8

7. Compute standard deviation from:

Marks	Less than 10	20	30	40	50	60
No. of Females	8	12	20	26	35	50

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BCA (Sem.–2)

COMPUTER SYSTEM ARCHITECTURE

Subject Code : UGCA-1908

M.Code : 77416

Date of Examination : 21-11-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Write briefly :**

a) What are the various units of Digital Computer?

b) Explain AND and NOT gate with example.

c) What is Bus?

d) What is Shift register?

e) What is JK flip flop, explain with example?

f) What is register?

g) What are USB interfaces?

h) What are the various types of operations required for instructions?

i) What are memory reference instructions?

j) What are K-Maps?

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SECTION-B

2. Differentiate between RISC and CISC Architecture.

3. Draw and explain Full Adder and Full subtractor with example.

4. Explain Implementation of Boolean equations with Multiplexer.

5. Draw and explain D Flip flop and T Flip Flop.

6. Discuss in detail, the basic concepts of instructions and its executions.

7. Explain the three types of Buses in Computer architecture.

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BCA (Sem.–2)

OBJECT ORIENTED PROGRAMMING USING C++

Subject Code : UGCA-1909

M.Code : 77417

Date of Examination : 23-11-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Explain :**

   a) What is the basic structure of a C++program?

   b) What are the steps involved in execution of a C++program?

   c) What is difference between procedural and object oriented programming language?

   d) Differentiate between Private and Protected access specifiers.

   e) What is a destructor?

   f) What is difference between multiple and multilevel inheritance?

   g) Which operators of C++ cannot be overloaded?

   h) What do you mean by pure virtual function?

   i) What is binding and its types in C++?

   j) What are the various methods of opening files in C++?

SECTION-B

2. What is Object Oriented Programming? Explain in detail the different features of Object Oriented Programming.

3. What is a class? What is the relation between an object and a class? Write a program which shows how to define a class, how to access member functions and how to create and access objects in C++?

4. What do you mean by constructor? What are various types of constructors? Discuss in detail.

5. Define Inheritance. What are the various types of inheritances? Explain giving suitable examples.

6. What do you mean by operator overloading? How can you overload unary and binary operators? Explain giving suitable examples.

7. **Explain the following :**

   a) Late binding

   b) Virtual functions

   c) Abstract class

   d) Reading and writing a File.

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BCA / B.Sc. (IT)

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BCA (Sem.–2)

ENVIRONMENTAL STUDIES

Subject Code : EVS-102-18

M.Code : 77421

Date of Examination : 28-11-23

Time : 3 Hrs. **Max. Marks : 60**

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.**

SECTION-A

1. **Write briefly :**

a) Why is public awareness important in environmental management?

b) Define ecosystem. List the components of an ecosystem.

c) Define Biodiversity. Why do we need to conserve it?

d) List the effects of thermal pollution.

e) Differentiate between primary and secondary air pollutants, give two examples of each.

f) List any four strategies for urban water conservation.

g) What are the causes of acid rain?

h) List the mitigation measures of earth quake as a natural disaster.

i) List any four issues associated with effective implementation of environmental laws in India.

j) What is meant by population explosion?

SECTION-B

2. Sketch and explain the concept of ecological pyramid in Lake Ecosystem.

3. What are e-wastes? Explain the different types. How do you relate it to the urban consumerism?

4. Explain the strategies for effective solid waste management in your campus. Identify the different types of wastes, work out typical quantities and suggest possible final disposal methods.

5. Discuss the concept of sustainable development. Propose a strategy to implement the same in any developmental activity.

6. Discuss the environmental effects of urban transport. Consider the vehicular exhaust as a source of air pollution and explain the effects of the specific pollutants.

7. *"Developing or underdeveloped countries cannot afford the luxury of environmental conservation"*. Critically comment.

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BCA / B.Sc. (IT) (Sem–3)

DATA STRUCTURES

Subject Code : UGCA-1915

M.Code : 93333

Date of Examination : 23-12-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Answer briefly :**

a) What do you mean by an Algorithm?

b) What is difference between static and dynamic memory allocation?

c) What is a Pointer?

d) Explain PUSH and POP algorithm in a Stack.

e) What is the difference between Stack and Queue?

f) How double linked list is different from circular linked list?

g) What are various methods of tree traversal?

h) What is the purpose of the shortest path algorithms in a graph?

i) What is linear search?

j) List various collision resolution techniques in Hashing.

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SECTION-B

2. a) What do you mean by Data Structure? Explain various categories of Data Structure.

b) What do you mean by an Array? Differentiate between one dimensional and multi-dimensional arrays.

3. Define Queue. What are different types of queues? Explain insertion and deletion algorithms for a simple queue.

4. What do you mean by a Linked List? Discuss the representation of linked list in memory and basic operations of the Linked Lists.

5. **Write short notes on the following :**

a) Binary Tree

b) Binary Search Tree

c) Complete Binary Tree

d) B-Tree.

6. a) What do you mean by Graph? What are various methods for graph traversal?

b) Define Hashing. What are the different methods of computing Hash function?

7. What do you mean by Sorting? What are the various sorting methods? Discuss any one in detail with the help of an example.

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BCA (Sem–3)

PC ASSEMBLY AND TROUBLESHOOTING

Subject Code : UGCA1919

M.Code : 93334

Date of Examination : 15-12-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Write briefly :**

a) Discuss the purpose of BIOS in a Computer System.

b) What is the basic functionality of Arithmetic Logic Unit (ALU)?

c) Explain briefly about peripheral devices.

d) Discuss some problems that can occur in memory and how can they be addressed?

e) Write various steps to configure and upgrade a microcomputer.

f) Discuss briefly about various types of motherboards.

g) Mention briefly the steps required for sharing a printer on a Local Area Network (LAN) in a linux environment.

h) What is the role of device drivers in a computer system?

i) How do you troubleshoot a failed boot before an operating system is loaded?

j) Name a tool to diagnose hardware problems.

SECTION - B

2. Proviples camples of some common peripheral devices and explain how are they connoe cono the computers to enhance the functionality?

3. Whatre? Dtware? Differentiate between system software, application software and utility softwhe helth the help of examples.

4. Discus synrious symptoms in reference to motherboard related issues. Also discuss the key sshouldhat should be taken to resolve these issues.

5. Discle of c role of device drivers in the operation of printers and scanners. Differentiate betwent tyfferent types of drivers and explain when to use each type.

6. Explocess : process of booting. Discuss various types of booting along with advantages and li of easons of each and how do they impact the system startup?

7. Descus apprious approaches of installing and supporting I/O devices. In reference to I/O devics advscuss advantages and disadvantages of wired and wireless I/O devices.

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BCA/B.Sc. (IT) (Sem.–3)

PROGRAMMING IN PYTHON

Subject Code : UGCA1914

M.Code : 78180

Date of Examination : 19-12-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Write briefly :**

a) What is the significance of environment variables while installing Python?

b) Explain the concept of multiple assignments.

c) Explain briefly about scope and lifetime of a variable.

d) Write various use cases of Python data types.

e) Differentiate between a tuple and a list.

f) Explain anonymous function with the help of an example.

g) What is the difference between a module and a package?

h) Discuss the concept of 'raising' exceptions in Python and provide an example of how it can be used.

i) What is the purpose of the tell() and seek() methods in file handling?

j) Explain the concept of garbage collection in Python and its role in managing memory.

SECTION-B

2. What are the various features of Python? Discuss various advantages and limitations associated with it along with the applications.

3. Discuss Python's native data types. Provide insights into their features and detail methods and operations for manipulating these types.

4. What is a function? Explain different ways in which arguments can be passed to a function highlighting the advantage and disadvantage of each.

5. Explain the concept of file handling addressing the modes, attributes, encoding, opening and closing of files. Discuss how file pointers can be moved in the files using built-in functions to read/write data from/into files?

6. Explain the benefits associated with the concept of object-oriented programming over procedural language.

7. What are control statements? Explain break, continue and pass statements with the aid of an example.

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BCA (Sem.–3)

COMPUTER NETWORKS

Subject Code : UGCA-1913

M.Code : 78179

Time : 3 Hrs.

Date of Examination : 21-12-2023

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Write briefly :**

a) Differentiate between Circuit Switching and Packet Switching.

b) Write at least two advantages of Ring topology.

c) Explain in brief about leased lines.

d) Explain the term Noise and Distortion in reference to transmission impairments.

e) Explain the term Flow Control in Data link layer.

f) What is the need of Error detection? Explain in brief.

g) Why do we need congestion control?

h) Write at least two advantages of Token Bucket algorithm.

i) Explain in brief about TCP protocol.

j) Explain the term Cryptography in reference to presentation layer.

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SECTION-B

2. **Explain the following network topologies along with their advantages and disadvantages:**

a) Star

b) Bus

c) Mesh

3. **Write a detailed note on following Wired transmission**

a) Coaxial cables

b) Optical Fiber transmission

4. Explain in detail about the error detection and correction code.

5. **Explain the following protocols in detail :**

a) SLIP

b) PPP

6. a) Explain CSMA/CD in detail.

b) Write a detailed note on Congestion control policies.

7. **Write a detailed note on following in reference to Transport layer :**

a) Connection Establishment and release

b) Flow control and buffering.

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BCA (Sem–4)

SOFTWARE ENGINEERING

Subject Code : UGCA1921

M.Code : 79725

Date of Examination : 20-11-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.**

SECTION-A

1. **Write briefly :**

a) What is the primary goal of process models in software engineering?

b) What are the primary goals of structured analysis in the context of software design?

c) How does the concept of software cost estimation benefit project planning and management?

d) What are some characteristics of good software design and why are they important?

e) Can you name one specialized process model and describe a situation in which it would be the most suitable choice?

f) How are decision trees and decision tables useful in analyzing and representing complex decision-making processes?

g) Why is it important to establish a link between metrics and the quality assurance process in software engineering?

h) In software design, what is meant by the terms "cohesion" and "coupling," and why are they significant?

i) Why the Software Requirements Specification (SRS) is considered a crucial document in software engineering?

j) What are some common metrics used to evaluate the maintainability of software systems and how are they applied?

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SECTION-B

2. Discuss the evolution of software engineering and explain how the need for structured software development processes emerged? How has this evolution shaped the field of software engineering today?

3. Explain multifaceted role of a system analyst in the software development lifecycle, emphasizing their responsibilities in requirements gathering, analysis and communication with stakeholders. Provide examples to illustrate the challenges they may encounter and how to address them.

4. Good software design is characterized by several important features, including modularity, reusability and scalability. Provide a detailed explanation of these features and illustrate how each contributes to the success of software projects. Additionally, discuss the challenges and trade-offs that designers often encounter when striving to achieve these characteristics in software design.

5. Describe the activities involved in software maintenance, including corrective, adaptive, and perfective maintenance and explain the factors that drive the need for reengineering. Provide examples of real-world maintenance and reengineering scenarios and their challenges.

6. Compare and contrast the principles and practices of object-oriented design with those of functional programming in the context of software design. How do these different paradigms influence the design process, code structure and maintainability of software systems? Provide specific examples and scenarios where one approach may be more suitable than the other.

7. Metrics are essential for evaluating the effectiveness and efficiency of the software testing process. Describe various software testing metrics, such as defect density, test coverage and defect arrival rate. Explain their significance in assessing testing quality and the impact on software maintenance.

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BCA (Sem–4)

DATABASE MANAGEMENT SYSTEMS

Subject Code : UGCA1922

M.Code : 79726

Date of Examination : 22-11-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Answer briefly :**

   a) Cursors

   b) Functions

   c) Entity

   d) Hierarchical Model

   e) Transitive Dependency

   f) Locking

   g) Transaction

   h) Network Model

   i) Importance of DBMS

   j) DKNF.

SECTION-B

2. Explain in detail Concept of Data Modelling and Three Level Architecture of DBMS.

3. Explain in detail Different types of Definition Languages used in SQL along with their examples.

4. What do you understand by Normalization? Apply all its forms with a suitable example.

5. Explain in detail Different types of Joins with suitable examples.

6. Explain in detail Importance of Database Security and Integrity and Control.

7. Write a note on Distributed Database.

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BCA (Sem.–4)

OPERATING SYSTEMS

Subject Code : UGCA-1923

M.Code : 79727

Date of Examination : 24-11-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Write briefly :**

   a) Explain the role of kernel, in brief.

   b) Differentiate between program and process.

   c) Write at least two advantages of threads.

   d) Differentiate between Logical and Physical Address Space.

   e) Explain the term Internal Fragmentation, in brief.

   f) Define the term Demand Paging.

   g) What do you mean by device drivers?

   h) Explain in brief about the term seek time in reference to disk storage.

   i) List the various issues in Distributed Operating System.

   j) Define the term Multiprocessor Operating System.

SECTION-B

2. Write a detailed note on Evolution and types of Operating Systems.

3. a) Define process and explain the process states in details, with diagram.

   b) Define the term PCB. Describe the fields in a Process Control Block (PCB) in detail.

4. Explain, in detail about the Paging Scheme of Memory Management.

5. Write a detailed note on various page replacement algorithms.

6. **Write a detailed note on following in relation to file management:**

   a) File Access Methods

   b) File Protection.

7. Write a detailed note on Real-Time Operating System.

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BCA / B.Sc. (Information Technology) (Sem–4)

WEB DESIGNING

Subject Code : UGCA1927

M.Code : 79731

Date of Examination : 29-11-2023

Time : 3 Hrs. Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Write short note on the following:**

   a. What are Hyperlinks?

   b. What are the basic formatting tags?

   c. Define paired tags with one example.

   d. Explain the date formats in JS.

   e. What do you mean by Internet Addressing?

   f. What are JavaScript data types?

   g. Ordered and unordered lists.

   h. What is form?

   i. Compare HTML vs. DHTML.

   j. What are Internal CSS style sheets?

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SECTION-B

2. a) What is client side JavaScript? Write the syntax of writing JavaScript into HTML.

   b) By taking a suitable example, explain the use of Document Head and Body in HTML structure.

3. What are frames and their types in HTML? Explain with example.

4. Explain how browser communicates with a web server? When you click on a submit button of an HTML form, you find your form data appears in the web browser's URL address field. Is your form using method Get or POST?

5. Explain Looping statements available in JS with example. Write the difference between while and dowhile loop.

6. What is establishing connectivity on the Internet client IP address? Discuss in detail.

7. a) **Write a HTML source code to create a table using following attributes:**

   i) ROWSPAN

   ii) COLSPAN

   iii) Cellspacing

   iv) Cellpadding.

   b) Explain the difference between Cellspacing and Cellpadding.

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BCA (Sem.–5)

PROGRAMMING IN PHP

Subject Code : UGCA-1929

M.Code : 90312

Date of Examination : 24-11-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Write briefly :**

a) Clarify the difference of use of <? Php …….. and ……. ?>

b) Differentiate between echo and print statements with example of each.

c) What are superglobals in PHP? Give example of each.

d) What is the purpose of 'require' and 'include' directives in PHP. What is their importance and application? Explain with example.

e) How a session is started and terminated in PHP. Justify with example.

f) What are callback functions and how these are used in PHP?

g) How a database is created with PHP. Give one example

h) Depending upon getting system time, how will you great a user echoing with the message "Good……."$user

(MORNING/AFTERNOON/EVENING).

Write PHP script for the same.

i) What is 'debugging' in PHP?

j) What do you mean by operands and operators in PHP?

SECTION-B

2. What is the difference between numeric and associative arrays? Using PHP, display data items of an array in descending order using for and for each loops.

3. What is a session? How session is created in PHP. Justify your answer with examples.

4. Calculate sum of only 'EVEN' integer numbers stored in an array using recursive func in PHP.

5. Give properties and their values for the following elements:

'GET', 'POST', form, input, type, label.

6. How PHP development environment is configured to execute server-side scripting?

7. Write a PHP script to accept username, password and e-mail values and validate same.

Warn the user if user typing wrong e-mail address by alert message to re-type the co e-mail address. Display this process in a HTML page.

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BCA (Sem.–5)

PROGRAMMING IN JAVA

Subject Code : UGCA-1932

M.Code : 90315

Date of Examination : 25-11-2023

Time : 3 Hrs. Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Answer briefly :**

a) What are the benefits of OOP?

b) How does Java differ from C++?

c) Define Java tokens. Write a history of PHP.

d) What is Java API?

e) How do you declare a variable in Java, give an example.

f) What is the difference between a while and a do-while statement?

g) Define local scope and global scope of a variable with an example.

h) What is the use of static keyword?

i) What is the difference between the String and String Buffer class?

j) Define Multithreading.

SECTION-B

2. a) Write a program to show multilevel and multiclass inheritance.

b) Write a program to show method overloading and method overriding concepts.

3. Discuss various loop statements and branching statements available in Java. Show their syntax.

4. What are system packages in Java? How the packages are created?

5. How error handling and exception handling are managed in Java? Explain with the help of an example using *try* and *catch*.

6. Define an Applet. How is an Applet different from an application? Describe the lifecycle of an applet.

7. Create a Date class in Java having day, month and year data members. Create constructors for initializing data members, functions for validating date, getting values of data members and displaying the date.

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BCA (Sem.–5)

COMPUTER GRAPHICS

Subject Code : UGCA1934

M.Code : 90317

Date of Examination : 30-11-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.**

SECTION-A

1. **Write briefly :**

a) What is a Graphics Tablet?

b) Define virtual reality.

c) List five types of graphs.

d) What are points and lines in computer graphics?

e) What is the need for homogeneous coordinates? Give the homogeneous coordinates for translation, rotation and scaling.

f) What is a frame buffer? Also, explain on what factors the quality of a displayed image depends?

g) What is the direct method for scan-converting circles?

h) How shearing is different than scaling?

i) What is the difference between the boundary-fill algorithm and the flood-fill algorithm?

j) What is Morphing in computer graphics?

SECTION-B

2. a) Compare and contrast raster and random-scan systems in computer graphics.

b) List the applications of Computer Graphics.

3. Describe in detail the Bresenham's line drawing algorithm. Using Bresenham's algorithm, find the coordinates of the pixels on a line segment with endpoints (2,3) and (5,8).

4. Explain the concepts of translation, scaling and rotation transformations in computer graphics. Explain how each transformation affects objects position, size, and orientation.

5. a) Write a note on area filing techniques.

b) Magnify the triangle with vertices A(0,0), B(1,1), C(5,2) to twice its size while keeping C(5,2) fixed.

6. Define projection. Explain various types of parallel and perspective projections. Also, derive the equations for perspective projection.

7. Write down the Cohen-Sutherland line clipping algorithm. How does it determine which parts of a line segment lie inside and outside the clipping window?

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BCA (Sem.–5)

LINUX OPERATING SYSTEM

Subject Code : UGCA-1935

M.Code : 90318

Date of Examination : 02-12-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Answer briefly :**

a) Write a note on history of linux.

b) Discuss about the terminologies used in linux.

c) List any four linux distributions.

d) What are the major features of linux operating system?

e) Write a note on role of shell in linux environment.

f) What is I/O Redirection in Linux?

g) What is the architecture of linux? Explain.

h) Define Shell script in linux.

i) Discuss init process along with runlevels.

j) Explain virtualization in Linux.

SECTION-B

2. Write down the steps to create, modify, search and navigate a file in editor.

3. Draw and explain the structure of Linux.

4. Explain different types of shells in Linux operating system.

5. Write down the steps required for changing the current network configuration.

6. Write a shell script to show working with if-then statement.

7. Explain the commands :

a) telnet

b) route

c) hostname

d) ping

e) ifconfig.

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BCA (Sem.–5)

INTERNET OF THINGS

Subject Code : UGCA1933

M.Code : 90316

Date of Examination : 07-12-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Write briefly :**

   a) Write the purpose of Internet of Things (IoT).

   b) Write a short note on cloud computing.

   c) Discuss the contribution of wireless sensor networks in IoT.

   d) Discuss two domain specific IoT applications for the 'city' domain.

   e) What role does network function virtualization play in IoT ecosystem.

   f) How is NETCONF used in conjunction with YANG in IoT system management?

   g) Discuss briefly network operator requirements in IoT.

   h) How does NETCONF help in configuring network devices?

   i) Write a short note on web servers.

   j) Describe briefly the significance of security management in an IoT system.

SECTION-B

2. What is the role of IoT protocols in establishing the communication between devices. Discuss some widely used protocols highlighting the advantages they offer.

3. Describe various IoT technologies that enable smart farming and precision agriculture. Discuss how these technologies enhance crop yield and sustainability.

4. What is IoT system management? Discuss key aspects of IoT system management along with their need.

5. Describe key components of Simple Network Management Protocol (SNMP). How SNMP facilitates network operator requirements for IoT deployments?

6. What is IoT design methodology? Describe key elements of IoT design methodology.

7. What is cloud storage? Discuss about various cloud storage models discussing their benefits and considerations when each model is preferred over the other.

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BCA (Sem-6)

ANDROID PROGRAMMING

Subject Code : UGCA1943

M.Code : 91681

Date of Examination : 20-11-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Answer the following :**

a) State any four basic controls used in android GUI application.

b) Give names of different states in android application development life-cycle.

c) List main components of android SDK.

d) Differentiate between 'JAVAC' and 'JVM'.

e) What is MapKit?

f) What is device streaming in android application development?

g) How navigation drawer works? Give one example.

h) What are basic dependencies?

i) What is 'encapsulation' and 'data-abstraction' in java?

j) Give advantages of intelligent code-Editor.

SECTION-B

2. Discuss android development system architecture. How Java API interacts with Android Runtime (ART).

3. Explain difference between 'system prototype' and 'system model' with suitable examples.

4. Explain directory structure of android-based application software development. Give usage of resources folder with its sub-folders in your mobile application.

5. What is software testing, validation and verification? How and why, these are used in android development environment?

6. Discuss with example various GUI elements in any mobile application.

7. How display orientation changes are controlled? Explain 'absolute' and 'relative' layou customization of screen orientation in an android application development.

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Bachelor of Computer Applications (Sem.–6)

DIGITAL MARKETING

Subject Code : UGCA1947

M.Code : 91691

Date of Examination : 29-11-2023

Time : 3 Hrs. **Max. Marks : 60**

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.**

SECTION-A

1. **Write briefly :**

a) What is digital marketing? Compare and contrast the traditional marketing.

b) What is POEM?

c) What is viral marketing?

d) What is Search Engine Optimization?

e) Discuss characteristics of SEO content writing?

f) What is landing page? How can it be optimized?

g) What is page rank technology?

h) What are different types of keywords?

i) What is CTR?

j) What is mobile marketing? What kind of products is mobile marketing suitable for?

SECTION-B

2. Which factors are responsible for the transition of Traditional Marketing to Modern Marketing? What are the key areas of comparison between Web 1.0 and Web 2.0?

3. Describe elements of the Brick and Mortar and Brick and Click models separately.

4. What is search engine marketing? Discuss the stages of search engine marketing and rules that search engine optimization plays in search engine marketing.

5. *"One of the emerging channels of marketing, it includes ways and means to use "content" as a marketing channel by itself which guides consumers to purchases and end-of funnel activities."* Discuss.

6. Differentiate between on page optimization and off page optimization. Discuss in detail the social media optimization techniques. Give examples

7. **Write short notes on following :**

a) Web analytics

b) SMS marketing.

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BCA (Sem–6)

INFORMATION SECURITY

Subject Code : UGCA 1948

M.Code : 91695

Date of Examination : 01-12-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Write Briefly :**

a) Explain Secure E-mail with example.

b) What is inferential control?

c) What is Firewall?

d) Explain Asymmetric key cryptography.

e) What is targeted malicious code?

f) List out the differences between Public Key and Secret Key algorithms.

g) What is multilevel database?

h) Is there any difference between computer crimes and cyber-crimes? Explain.

i) What is a cipher?

j) Define Encryption using an example.

SECTION-B

2. Explain DES algorithm with suitable examples. Discuss advantages and limitations of DES algorithm. What are uses of Encryption?

3. Discuss in detail the security policies in an operating system. Explain the potential consequences of breach in assurance in the implementation of trusted operating systems and how assurance measures mitigate risks.

4. What are the primary network security controls that organizations can implement to safeguard their systems and data? Provide examples of how these controls are useful when implemented in practice.

5. What is an Intrusion Detection System (IDS) and how does it differ from a firewall? Explain the two main types of IDS: host-based and network-based. When and how are they deployed in a network security infrastructure?

6. What are the rights and responsibilities of both employees and employers regarding information security? Explain ethical issues in Computer security.

7. What is digital signature? What are the advantages of using digital signatures? Explain the key aspects of a secure architecture for an open system.

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BCA (Sem.–6)

CYBER LAWS & IPR

Subject Code : UGCA-1949

M.Code : 91696

Date of Examination : 04-12-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Write briefly :**

   a) Explain Cyber Crime with example.

   b) Copyright

   c) Digital forgery

   d) Identity theft

   e) What is the role of Certifying Authority?

   f) What is the significance of copyrights?

   g) When was IT Act, 2000 amended? When were major changes incorporated in IT Act?

   h) What is open-source software?

   i) Explain digital signatures and give their advantages.

   j) What is cyber terrorism?

SECTION-B

2. Discuss the evolution of cyber-crimes. Explain different categories of cyber-crimes. Explain the role of cyber laws in cyber security.

3. What are Patents? What is the Process of filing a patent? How is patent different from copyright?

4. What is a trademark? What kind of signs can be used as trademarks? Explain types of trademark and advantages of using a trademark.

5. Explain in detail about cyber-crime against individual, state and institution. Give counter measures on how to protect from cyber-crimes?

6. Explore the role of ethical hackers and cybersecurity professionals in preventing cyber crimes. What are the ethics and etiquettes of cyber world?

7. Define Intellectual Property (IP) and distinguish between different types of IP rights, such as patents, trademarks and copyrights and give significance of each type in protecting creative and innovative works.

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