



OSDAV Public School, Kaithal
December Examination (2024-25)
Class :XI
Subject :Computer Science(083)

SET-B

Time: 3 Hrs .

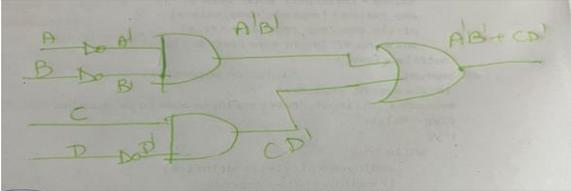
M.M. : 70

General Instructions:-

- I. Please check this question paper contains 35 questions.
- II. The paper is divided into 5 Sections- A, B, C, D and E.
- III. Section A, consists of 18 questions (1 to 18). Each question carries 1 Mark.
- IV. Section B, consists of 7 questions (19 to 25). Each question carries 2 Marks.
- V. Section C, consists of 5 questions (26 to 30). Each question carries 3 Marks.
- VI. Section D, consists of 2 questions (31 to 32). Each question carries 4 Marks.
- VII. Section E, consists of 3 questions (33 to 35). Each question carries 5 Marks.
- VIII.** All programming questions are to be answered using Python Language only

Q.N.	Questions(1X18=18)	Marks
1	_____ software is made to enhance the performance of system. (A) System (B) Application (C) Utility (D) None of these	1
2	State TRUE or FALSE. Absorption law states that: $X.X' = X$ and $X+X' = X$ Ans: FALSE.	1
3	In binary, $(6)_8$ is represented by :- (A) $(101)_2$ (B) $(011)_2$ (C) $(110)_2$ (D) $(111)_2$	1
4	Which of the following is/are not a mutable datatype in Python? (A) List (B) Tuple (C) Set (D) String	1
5	What is the difference between the = and == operators in Python? (A) Both = and == operators check for value equality. (B) The = operator assigns values for object ,while == checks for value equality. (C) The == operator assigns values for object ,while = checks for value equality. (D) Both is and == operators check for object identity.	1
6	Which of the following is the proprietary software (A) Adobe Photoshop (B) BSD (C) GNUGPL (D) Apache	1
7	Rudra wants to divide a number and store the result with decimal places . Suggest him an appropriate operator from the following (A) / (B) % (C) // (D) Both (A) & (B)	1
8	Which of the following is not a sequence datatype in Python? (A) List (B) Tuple (C) Set (D) String	1
9	What will be the output? <pre>x="1a36b" sum = "" for i in x: if i.isdigit(): sum+= i print(sum)</pre> (A) 6 (B) 4 (C) 136 (D) None of these	1
10	Which will be the the output following Python? <pre>L=[12,3,5,7,21,32] for i in range(len(L)-1, 0,-1) : print(i)</pre>	1

	5 4 3 2 1	
11	Which of the following will result in an error? st=(12,34,56,78,1,14) (A) print(st [2]) (B) st[3]="Wow" (C) print(st[0:5]) (D) Both (B) and (C)	1
12	What will be the output of the below Python code? list1=[5, 3, 9, 0] print(list1[: : 1]) (A) [0,9,3,5] (B) [0] (C) [9] (D) [5, 3, 9, 0]	1
13	What will be the output of the below Python code? tup1=('a', 'b', 2) tup3=tup1+2 print(tup3) (A) ('a', 'b', 2, 'a', 'b', 2) (B) ('a','b',4) (C) ('a', 'a', 'b', 'b', 2, 2) (D) Error	1
14	Predict the output of the following code if: mydict = {'a':23,'b': '78','c':89} mydict.update ('c':91,'d':36) print(mydict) (A) {'a':23,'b': '78','c':89,'d':36} (B) {'a':23,'b': '78','c':91,'d':36} (C) {'a':23,'b': '78',89, 'd':36} (D) {'a':23, 'b': '78', 'd':89, 'e':36}	1
15	When someone steals someone else's personal information to commit theft or fraud, it is called _____ (A) Identity theft (B) Hacking (C) Computer piracy (D) Infringement	1
16	When sending an email, which of the following is considered good netiquette? a. Using all capital letters to emphasize your point b. Including a clear subject line and polite greeting c. Ignoring email etiquette rules if the recipient is a close friend d. Sending large attachments without warning the recipient	1
	Q17 and 18 are ASSERTION (A) AND REASONING (R) based questions. Mark the correct choice as (A) Both A and R are true and R is the correct explanation of A (B) Both A and R are true but R is not the correct explanation of A (C) A is true but R is false (D) A is false but R is true	1
17	Assertion (A): The IT Act 2000 does not protect from Child Pornography. Reason (R): IT Act section 67 was amended to ensure that browsing sites of Child Pornography is also an Offence. (D) A is false but R is true	1
18	Assertion (A): a* *b is used for power, i.e., a ^b Reason (R): <, > operators are similar to != operator (C) A is true but R is false	1
Section B(2X7=14)		
19	Draw a logic circuit for the following Boolean expression: A'B' + CD'	2

		
20	<p>Write a binary representation of the following hexadecimal numbers.</p> <p>(i) 426 (ii) CBA1 (iii) E98 (iv) 32.41</p> <p>(i) 010000100110 (ii) 1011101010010001 (iii) 111010011000 (iv) 00110010.0100001</p>	2
21	<p>Convert the following loop into for loop:</p> <pre>x=4 while(x<=80): print (x*10) x+=2</pre> <p>for x in range (4,82,2): print(x*10)</p>	2
22	<p>What will be the output of the following statements?</p> <p>(i) list1 = [12, 32, 65, 26, 80, 10] list1.sort() print(list1)=>[10,12,26,32,65,80]</p> <p>(ii) list1 = [12, 32, 65, 26, 80, 10] T=sorted(list1) print(list1)=> [12, 32, 65, 26, 80, 10]</p> <p>(iii) list1 = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10] print (list1[: :-2])=> [10, 8, 6, 4, 2] print(list1 [:3] + list1[3:])=>[1,2,3, 4, 5, 6, 7, 8, 9, 10]</p> <p>(iv) list1 = [1, 2, 3, 4, 5] print(list1[len(list1)-1])=>[5]</p>	2
23	<p>If d={'math': 45, 'english', 60, 'science': 65, 'computer science': 70}</p> <p>What will be the output of the following?</p> <p>(i) print (len (d))=>4</p> <p>(ii) print(list(d.keys()))=> dict_keys(['math', 'english', 'science', 'computer science'])</p> <p>(iii) print (d["english"])=>60</p> <p>(iv) print(max(d.values()))=>70</p>	2
24	<p>Name the crimes for which cyber laws are enforced strictly in India.</p> <ul style="list-style-type: none"> • Identity theft: Stealing personal information to obtain financial services or assets • Cyberterrorism: Causing harm or extortion to individuals, groups, or governments • Cyberbullying: Intimidating, harassing, or defaming others through electronic means • Hacking: Gaining access to computer systems or networks without authorization • Phishing: Sending fraudulent emails to obtain sensitive information 	2
25	<p>Where are the digital footprints mainly stored?</p> <p>Digital footprints are primarily stored on servers operated by online platforms and services you use, including social media websites, search engines, online shopping sites, email providers, and other web applications;</p>	2

Section C(3X5=15)		
26	<p>Write a program to add all the values in the tuple of marks t= (230, 101, 40, 56, 1) which are multiples of 10 and display their sum.</p> <p>t= (230, 101, 40, 56, 1)</p> <p>For a in t: If a%10==0: S=s+a Print(s)</p>	3
27	<p>Write the output of the following code:</p> <p>A= {10:100,20:200,30:3000,40:4000,50:5000}</p> <p>(i) print (A.keys ())=>dict_keys[(10,20,30,40,50)]</p> <p>(ii) print(max(A))=>50</p> <p>(iii) print(len(A))=>5</p>	3
28	<p>Write a Python program to input list of student heights and calculate the average height of students in the class and median. Also calculate the most common height, i.e., the mode.</p> <p>Import statistics L= eval(input("input list")) M1=statistics.mean(L) M2=statistics.median(L) M3=statistics.mode(L) print(M1,M2,M3)</p>	3
29	<p>Draw a flowchart to check whether a given number is palindrome number.</p> <pre> graph TD Start([Start]) --> GetNum[/Get the num/] GetNum --> Calc[
R=num/10;
Sum=sum*10+r;
Num=num/10] Calc --> Dec1{num != 0} Dec1 -- True --> Calc Dec1 -- false --> Dec2{T == summ} Dec2 -- True --> Pal[/Number is palaindrom/] Dec2 -- false --> NotPal[/Number is not palaindrom/] Pal --> End([End]) NotPal --> End </pre> <p style="text-align: center;">https://t4tutorials.com/</p>	3
30	<p>Write a program to print the pattern</p> <pre> 1 1 1 1 2 2 2 2 3 3 3 4 4 </pre>	3

<p>Q35</p>	<p>Read the passage given below and answer the questions: Our digital footprints can be created and used with or without our knowledge. It includes websites we visits, e-mail we send , and any information we submit online etc. along with the compiler’s IP address, location and other device specific details. Such data could be used for targeted advertisement or could also be misused or exploited. Thus, it is good to be aware of the data trail we might be leaving behind. This awareness should make us cautious about what we write, upload or even browse online.</p> <p>a. What are digital foot prints? => the information about a particular person that exists on the internet as a result of their online activity.</p> <p>b. What are two types of digital footprints? =Active,Passive</p> <p>c. Can a digital footprint be completely erased or deleted? => No</p> <p>d. How can employers or colleges use digital footprints during the selection process? Employers and colleges can use digital footprints during the selection process by searching online to verify information on a candidate's resume, assess their professionalism through social media activity, identify potential red flags like inappropriate content, and gain a broader understanding of their personality and interests</p> <p>e. Where are digital footprints stored?. Digital footprints are primarily stored on servers operated by online platforms and services you use, including social media websites, search engines, online shopping sites, email providers, and other web applications;</p>	<p>5</p>
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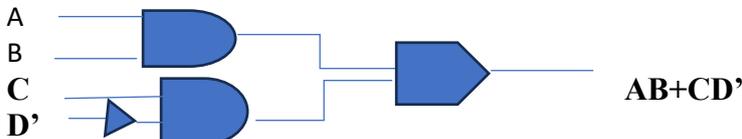
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Q.N.	Questions	Marks
Section A(1X18=18)		
1	_____ software is made to perform a specific task. (A) System (B) Application (C) Utility (D) None of these	1
2	State TRUE or FALSE. Idempotent law states that: $X.X' = X$ and $X+X' = X \Rightarrow$ FALSE.	1
3	In binary, $(7)_8$ is represented by :- (A) $(101)_2$ (B) $(011)_2$ (C) $(110)_2$ (D) $(111)_2$	1
4	Which of the following is not a sequence datatype in Python? (A) List (B) Tuple (C) Set (D) String	1
5	What is the difference between the is and == operators in Python? (A) Both is and == operators check for value equality. (B) The is operator checks for object identity, while == checks for value equality. (C) The is operator checks for value equality, while == checks for object identity. (D) Both is and == operators check for object identity.	1
6	Which of the following is the open_source software? (A) Microsoft windows (B) Adobe (C) Microsoft office (D) Chrome	1
7	Rudra wants to divide a number and store the result without decimal places into an integer variable. Suggest him an appropriate operator from the following (A) / (B) % (C) // (D) Both (A) & (B)	1
8	Which of the following is not a mutable data type? (A) Lists (B) Dictionaries (C) Sets (D) Tuples	1
9	What will be the output? <pre>x="1a3" sum = 0 for i in x: if i.isdigit(): sum+= int(i) print(sum)</pre> (A) 6 (B) 4 (C) 0 (D) None of these	1
10	Which of the following Python code will give different output from the others? (A) for i in range(0, 5) : print(i) (B) for j in [0,1,2,3,4]: print (j)	1

	(C) for k in [0,1,2,3,4,5]: print(k) (D) for l in range(0,5,1) : print(l)	
11	Which of the following will result in an error? st="python_language" (A) print(st [2]) (B) st[5]="Wow" (C) print(st[0:5]) (D) Both (B) and (C)	1
12	What will be the output of the below Python code? list1=[5, 3, 9, 0] print(list1[: -1]) (A) [0,9,3,5] (B) [0] (C) [9] (D) [5, 3, 9, 0]	1
13	What will be the output of the below Python code? tup1=('a', 'b', 2) tup3=tup1*2 print(tup3) (A) ('a', 'b', 2, 'a', 'b', 2) (B) ('a','b',4) (C) ('a', 'a', 'b', 'b', 2, 2) (D) Error	1
14	Predict the output of the following code if: mydict = {'a':23,'b': '78','c':89} del mydict['c'] print(mydict) (A) {'a':23,'b': '78', 89, } (B) {'a':23,'b': '78' } (C) {'a':23,'b': '78',89, 'd':36} (D) {'a':23, 'b': '78', 'd':89, 'e':36}	1
15	When someone steals someone else's personal information to commit theft or fraud, it is called _____ (A) Identity theft (B) Hacking (C) Computer piracy (D) Infringement	1
16	When sending an email, which of the following is considered good netiquette? a. Using all capital letters to emphasize your point b. Including a clear subject line and polite greeting c. Ignoring email etiquette rules if the recipient is a close friend d. Sending large attachments without warning the recipient	1
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18	Assertion (A): a* *b is used for power, i.e., a ^b Reason (R): <, > operators are similar to != operator (B) Both A and R are true but R is not the correct explanation of A	1
	Section B(2X7=14)	
19	Draw a logic circuit for the following Boolean expression: AB + CD' 	2

20	Write a binary representation of the following hexadecimal numbers. (i) 4026 =>010000000100110 (ii) BCA1 =>1010101110010001 (iii) 98E =>100110001110 (iv) 132.45=>000100110010.01000101	2
21	Convert the following loop into for loop: x=2 while(x<=8): print (x*10) x+=22 for x in range(2:8:22): print(x*10)	2
22	What will be the output of the following code if the input is given: [2] (i) abbcca=> bcca (ii) bccabc=>bccabc string = input ("Enter a string:") count = 0 while True : if string[0] == 'a' : string = string[2:] elif string[-1] == 'b': string = string [:2] else : count+=1 break print(string) print(count)	2
23	Start with the list [8, 9,10]. Do the following using list functions: (i) Set the second entry (index 1) to 17=> list[1]=17 (ii) Add 4,5 and 6 to the end of the list=>list.extend([4,5,6]) (iii) Remove the first entry from the list=> list.pop(0) (iv) Insert 25 at index 3=> list.insert(3,25) Or If d={'math': 45, 'english', 60, 'science': 65, 'computer science': 70} What will be the output of the following? (i) print (len (d))=> 4 (ii) print(list(d.keys()))=> dict_keys(['math', 'english', 'science', 'computer science']) (iii) print (d["english"])=>60 (iv) print(max(d.values()))=>70	2
24	Name the crimes for which cyber laws are enforced strictly in India. <ul style="list-style-type: none"> • Identity theft: Stealing personal information to obtain financial services or assets • Cyberterrorism: Causing harm or extortion to individuals, groups, or governments • Cyberbullying: Intimidating, harassing, or defaming others through electronic means • Hacking: Gaining access to computer systems or networks without authorization • Phishing: Sending fraudulent emails to obtain sensitive information 	2

25	Where are the digital footprints mainly stored? Digital footprints are primarily stored on servers operated by online platforms and services you use, including social media websites, search engines, online shopping sites, email providers, and other web applications;	2
Section C(3X5=15)		
26	Write a program to add all the values in the tuple of marks t= (23, 11, 41, 56, 1) which ends with 1 and display their sum. S=0 t= (23, 11, 41, 56, 1) for a in t: if a%10==1: s= s+a print(s)	3
27	Write the output of the following code: A= {10:100,20:200,30:3000,40:4000,50:5000} (i) print (A.items()) dict_items([(10:100),(20:200),(30:3000),(40:4000),(50:5000)]) (ii) print(A.keys())=> dict_keys([10,20,30,40,50]) (iii) print(A.values())=> dict_values([100,200,3000,4000,5000])	3
28	Write a Python program to input list of student heights and calculate the average height of students in the class and median. Also calculate the most common height, i.e., the mode. Import statistics L= eval(input("input list")) M1=statistics.mean(L) M2=statistics.median(L) M3=statistics.mode(L) print(M1,M2,M3)	3
29	Draw a flowchart to check whether a given number is an Armstrong number. An Armstrong number of three digits is an integer such that the sum of the cubes of its digits is equal to the number itself. For example, 371 is an Armstrong number since $3^3 + 7^3 + 1^3 = 371$.	3

	<pre> graph TD Start([START]) --> SetSum[SET SUM = 0] SetSum --> ReadNum[/READ NUMBER1, NUM/] ReadNum --> SetTemp[SET TEMP = NUM] SetTemp --> IsTemp{IS TEMP=0} IsTemp --> Loop[COMPUTE DIGIT = TEMP%10 TEMP = TEMP/10 SUM = SUM + (DIGIT ** 3)] Loop --> IsTemp IsTemp --> IfSum{IF NUM=SUM} IfSum --> IsArm[IT IS A AMSTRONG] IfSum --> NotArm[IT IS NOT A AMSTRONG NUMBER] IsArm --> End([END]) NotArm --> End </pre>	
<p>30</p>	<p>Write a program to print the pattern using loop only</p> <pre> 1 2 3 4 5 1 2 3 4 1 2 3 1 2 </pre> <p>for a in range (6,2,-1): for b in range(1,a): print(b,end=" ") print()</p>	<p>3</p>
Section D(2X4=8)		
<p>31</p>	<p>a. Given a string s="Python is very interesting" Write a statement to produce the following output:</p> <p>(i) Python => <code>s[0:7]</code> (ii) pto => <code>s[0:7:2]</code> (iii) print reverse of the entire string => <code>s[::-1]</code> (iv) print nohtyp => <code>s[7::-1]</code></p> <p>b. Rewrite the following while loop into its equivalent for loop</p> <pre> x="Today is my computer exam" i=0 while i < len(x): print(x[i]) i=i+2 </pre>	<p>4</p>

	<pre>for i in range(0,len(x),2): print(x[i])</pre>	
32	<p>a. A real value can be converted to nearest integer value with the help of two built-in functions: int() and round(). int(3.5)=> 3 round(3.5)=>4</p> <p>In this context differentiate the above built-in functions with suitable examples.</p> <p>b. Write the equivalent python expressions of the following mathematical expressions</p> <p>(i) $f1=(a^2+b^2+c^2)^{1/2}$ (ii) $f2=p+\frac{q}{(r+s)^4}$</p> <p>(i) F1= math.sqrt(a**2+b**2+c**2) (ii) F2=p+q/math.pow((r+s),4)</p>	4
Section E(3X5=15)		
33	<p>a. Find the output of the following python code:</p> <p>(i) a,b,c,d=(1,2,3,4) myt=(a,b,c,d)*2 +(5**2,) print(len(myt)+2)=>11</p> <p>(ii) Mystring= "programming is Fun" print(Mystring[-50:10:1].endswith('in')) print(Mystring.partition('m'))</p> <p>True ('progra', 'm', 'ming is Fun')</p> <p>c. Write a program to count the number of lower case characters and upper case characters in a given strings. Example: VaSudhaiva KutumBakam</p> <pre>s= input("enter string") for a in s: if a .islower(): L+=1 elif a.isupper(): U+=1 print("uppercase",U) print("lower case", L)</pre>	5
34	<p>Consider the following dictionary stateCapital:</p> <pre>stateCapital = {"Karnataka": "Bangalore", "Haryana":"Chandigarh", "Sikkim": "Gangtok", "Bihar":"Patna"}</pre> <p>Find the output of the following statements:</p> <p>a. print(stateCapital.get("Bihar")) => Patna</p> <p>b. print(stateCapital.keys()) =>dict_keys(["Karnataka", "Haryana", "Sikkim", "Bihar"])</p> <p>c. print(stateCapital.items())=>dict_items[("Karnataka": "Bangalore"), ("Haryana": "Chandigarh"), ("Sikkim": "Gangtok"), ("Bihar": "Patna")]</p> <p>d. print(len(stateCapital)) =>4</p> <p>e. print("Maharashtra" in stateCapital)=> False</p>	5
Q35	<p>Case Study Shefali is very comfortable online and she keeps downloading data from the internet. She has to prepare a documentary on girl child but she downloaded a 2-minute clip from the internet explaining the gender discrimination in learning computers in rural areas . Using a video editor, she writes her name in the author / director of the video clip. She then emails the modified video clip to her teacher. She noticed that one of her friends who keeps visiting her house frequently is having all the presentations created by her without her permission.</p> <p>1. Identify the cyber crime committed by Shefali in this case from the following:</p> <p>(a) Cyber Bullying (b) Hacking (c) Plagiarism (d) Phishing</p>	5

2. What type of cyber crime she has been a victim of in the above situation.

Copyright infringement

3. Her friend told her that someone has created a fake profile of her on instagram defaming his/her character with objectionable comments and pictures.

Cyber staking

4 Give any two issues that can be incorporated in the video showing gender and disability issues while teaching computers

- **Gender Stereotyping:**

Highlighting how girls are often discouraged from pursuing computer science due to societal stereotypes that associate technology with masculinity, leading to a lack of female representation in the field. This could be shown by depicting scenarios where a girl expresses interest in coding but faces discouragement from peers or family members.

- **Accessibility Barriers for Students with Disabilities:**

Demonstrating the challenges faced by students with visual impairments when navigating traditional computer interfaces without assistive technology like screen readers. This could include showing a student struggling to read text on a screen without proper magnification or navigating a website with a standard keyboard when they require a specialized input device.