

COMMON PRE-BOARD EXAMINATION CHANDIGARH REGION 2019

CLASS: XII

SUB: COMPUTER SCIENCE (083)

MAX. MARKS :70

MARKING SCHEME

TIME:3 HR

SECTION-A

Q1	a	Which of the following can be used as valid variable identifier(s) in Python? (i) Data (ii) _Total (iii) 4thSum (iv) Number#	1
	Ans	(i) Data (ii) _Total (each ½ mark)	
	b	Identify and write the name of the module to which the following functions belong: (i) ceil() (i) floor()	1
	Ans	(i) math module (ii) math module	
	c	What type of objects can be used as keys in dictionaries?	1
	Ans	Only immutable type objects (i.e. Numbers, Strings, Tuples) can be used as keys in dictionaries	
	d	Rewrite the following code in python after removing all syntax error(s). Underline each correction done in the code. DEF execmain () : x = input ("Enter a number :") if (abs (x) = x) : print "You entered a positive number : " else : x=-*1 print "You entered made a positive number : " x execmain ()	2
	Ans	Corrected Code: <u>def</u> execmain(): x=input("Enter a number: ") if (abs(x) <u>==</u> x): print("You entered a positive number") else: x <u>*=-</u> 1 print("Number made positive:" <u>,x</u>) execmain() (each correction ½ marks)	
	e	Carefully observe the following python code and give the output of the question that follow: x=5 def func(): x=1 print(x) func()	2

		print(x) Explain the output with respect to the scope of the variables.	
	Ans	1 5	2
	f	Find and write the output of the following python code: L =["X",20,"Y",10,"Z",30] CNT = 0 ST = "" INC = 0 for C in range(1,6,2): CNT= CNT + C ST= ST + L[C-1]+"@" INC = INC + L[C] print (CNT,INC,ST)	3
	Ans	1 20 X@ 4 30 X@Y@ 9 60 X@Y@Z@ <i>(1 Mark for each correct line of output)</i>	
	g	What are the possible outcomes executed from the following code? Also, specify the maximum and minimum values that can be assigned to variable COUNT. import random TEXT ="CBSEONLINE" COUNT =random.randint(0,3) C=9 while TEXT[C] != 'L': print(TEXT[C]+TEXT[CO UNT]+'*',end="") COUNT= COUNT + 1 C =C-1 (i) EC* NB*IS* (iii) ES*NE*IO (ii) NS* IE*LO* (iv) LE*NO*ON	2
	Ans	The possible outcomes are (i) and (iii) (1 mark correct option) Minimum value of count is 0 and Maximum value of count is 3 (1/2 mark minimum and 1/2 mark maximum)	
		SECTION-B	
Q2	a	Can a function return a multiple value?	1
	Ans	Yes , a function can return multiple values by storing the returning values into individual object variables or in tuple object (Each 1/2 marks) Any example of following kind:- def f(): return 4,5 l=f() print(l) (1/2 marks)	

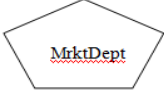

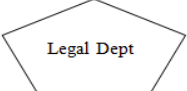

b	When a global statement used? Why is its use not recommended?	1
Ans	Global statement is used when the mentioned variable to be used from global environment/scope. The use of global statement is always discouraged as with this programmers tend to lose the control over variables and their scope	
c	<p>What is the output of the following code?</p> <pre>def change(one): print(type(one)) change((2,3,4))</pre> <p>a) Integer b) Tuple b) Dictionary d) An exception is thrown</p>	1
Ans	(b) Tuple [1 mark for correct option]	
d	<p>What is the output of this program?</p> <pre>for f in [2,3,4]: print(f**f, end=" ")</pre> <p>a) 27 81 343 b) 6 12 c) 4 9 16 d) None of the mentioned</p>	1
Ans	(c) 4 9 16 [1 mark for correct option]	
e	Write down the name of function to create line chart and horizontal bar chart.	1
Ans	Plot(), Barh() [1 mark for correct any two]	
f	Differentiate between syntax error and run time error? Also, write a suitable example in python to illustrate both.	2
Ans	<p>Syntax error: An error of language resulting from code that does not conform to the syntax of the programming language.</p> <p>Example</p> <pre>a = 0 while a < 10 # : is missing as per syntax a = a + 1 print a</pre> <p>Runtime error: A runtime error is an error that causes abnormal termination of program during running time..</p> <p>Example</p> <pre>A=10 B=int(input("Value:")) print A/B</pre> <p># If B entered by user is 0, it will be run-time error (1/2 mark each for defining syntax error and run-time error) (1/2 mark for each correct example)</p>	

		OR (Full 2 Marks for illustrating both through examples)	
	g	<p>Write to create a pie for sequence con=[23.4,17.8,25,34,40] for Zones=['East', 'West', 'North', 'South', 'Central'].</p> <p># show north zone's value exploded # show % contribution for each zone</p> <p style="text-align: center;">OR</p> <p>A bar chart is drawn (using pyplot) to represent sales data of various models of cars, for a month. Write appropriate statements in python to provide labels</p>	2
	Ans	<pre>import matplotlib.pyplot as Plt con=[23.4, 17.8, 25, 34, 40] Zones=['East','West','North','Sought','Central'] Plt.axis('equal') Plt.pie(con, labels=Zones, explode=[0, 0, 0.2, 0, 0],autopct= '%.2f%%') Plt.show()</pre> <p>[2 marks correct python code]</p> <p style="text-align: center;">OR</p> <pre>import matplotlib.pyplot as plt import numpy as np model=('i20','Grandi10','Creta','Eon','Verna','Tucson','Elantra') y_pos=np.arange(len(model)) sale=[12,14,93,46,40,37,20] plt.bar(y_pos,sale) plt.xticks(y_pos,model) plt.show()</pre> <p>[2 marks correct python code]</p>	
	h	<p>A text file contains alphanumeric text (say an. txt). Write a program that reads this text file and prints only the number or digit from the file.</p> <p style="text-align: center;">OR</p> <p>Write a method in python to read file MYNOTES.TXT and and display those lines which start with the alphabet 'K'.</p>	2
	Ans	<pre>F1=open("an.txt", "r") F=F1.read() for letter in F: if(letter.isdigit()): print(letter)</pre> <p style="text-align: center;">OR</p> <pre>Def display(): file=open('MYNOTES.TXT', 'r') line=file.readline() while line: If line[0]=='K' : print(line) line=file.readline()</pre>	

	<p>file.close()</p> <p>(1/2 Mark for opening the file) (1/2 Mark for reading all lines, and using loop) (1/2 Mark for checking condition) (1/2 Mark for printing lines)</p>	
i	<p>Write a recursive function that computes the sum of natural numbers upto n . Call the function and print the result also(n will be input by the user).</p> <p style="text-align: center;">OR</p> <p>Write a recursive function that could print a string backwards</p>	3
Ans	<pre>def compute(num): if num == 1: return 1 else: return num + compute(num-1) #main n= int(input("Enter any integer : ")) sum =compute(n) print("The sum of series from 1 to given number is : ", sum) OR def bp(strg , n): if n>0: print(strg[n], end=' ') elif n==0: print(strg[0]) #main s=input("enter any string: ") bp(s, len(s)-1)</pre>	
j	<p>Write a program to implement a stack for these book-details (book no, book name). That is, now each item node of the stack contains two types of information –a book no and its name. Just implemented push and display operations.</p> <p style="text-align: center;">OR</p> <p>Write a function in python , INSERTQ(Arr, data) and DELETEQ(Arr) for performing insertion and deletion operations in a Queue. Arr is the list used for implementing queue and data is the value to be inserted.</p>	4
Ans	<p>(1/2 mark each function defination) (1/2 mark for accepting a value from user) (1/2 mark for each correct condition) (1/2 mark for correct looping)</p> <p style="text-align: center;">OR</p>	

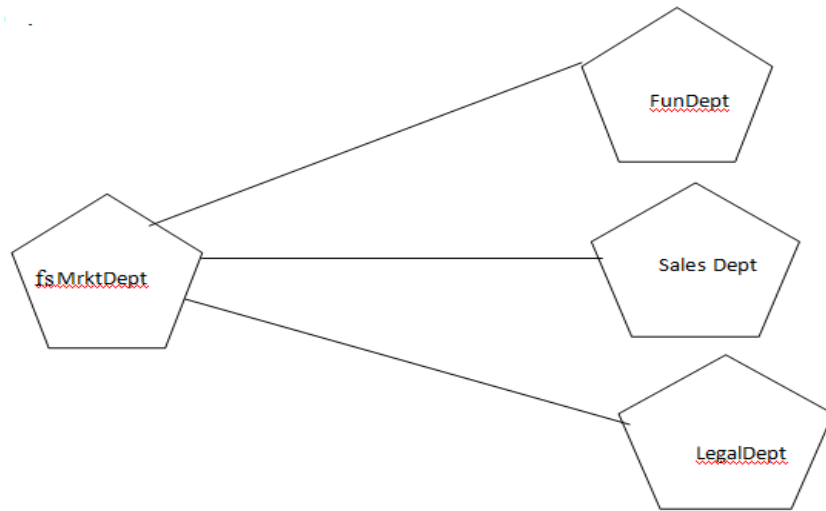
g	<p>Write the purpose of following commands:</p> <p>(i) whois</p> <p>(ii) ipconfig</p> <p>(iii) nslookup</p>	3
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	<p>whois: Look up tool finds contact information for the owner of a specified IP address. The ip whois Look up tool displays as much information as possible for a given IP address.</p> <p>ipconfig: In Windows, ipconfig is a console application designed to run from the Windows command prompt. This utility allows you to get the IP address information of a Windows computer. It also allows some control over active TCP/IP connections.</p> <p>nslookup: It is a network administration command-line tool available from any computer operating systems. It is used for querying the Domain Name System (DNS) to obtain domain name or IP address mapping information</p> <p>[each correct purpose 1 mark]</p>	
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h	<p>Sun Rise Pvt .Ltd. is setting up the network in the Ahmadabad. There are four departments named as MrktDept, FunDept, Legal Dept and Sales Dept</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>MrktDept</p> </div> <div style="text-align: center;">  <p>Fun Dept</p> </div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 20px;"> <div style="text-align: center;">  <p>Legal Dept</p> </div> <div style="text-align: center;">  <p>SalesDept</p> </div> </div> <p>Distance between various buildings is as given:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>MrktDept to FunDept</td> <td style="text-align: center;">80m</td> </tr> <tr> <td>MrktDept to LegalDept</td> <td style="text-align: center;">180m</td> </tr> <tr> <td>MrktDept to SalesDept</td> <td style="text-align: center;">100m</td> </tr> <tr> <td>LegalDept to SalesDept</td> <td style="text-align: center;">150m</td> </tr> <tr> <td>LegalDept to FunDept</td> <td style="text-align: center;">100m</td> </tr> <tr> <td>FunDept to SalesDept</td> <td style="text-align: center;">50m</td> </tr> </table> <p>Number of Computers in the buildings:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>MrktDept</td> <td style="text-align: center;">20</td> </tr> <tr> <td>LegalDept</td> <td style="text-align: center;">10</td> </tr> <tr> <td>FunDept</td> <td style="text-align: center;">08</td> </tr> <tr> <td>SalesDept</td> <td style="text-align: center;">42</td> </tr> </table> <p>i) Suggest a cable lay out of connections between the Departments and specify topology.</p> <p>ii) Suggest the most suitable building to place the server a suitable reason.</p> <p>iii) Suggest the placement of i) modem ii) Hub/Switch in the network.</p> <p>iv) The organization is planning to link its sale counter situated various part of the same city/which type of network out of LAN, WAN and MAN will be formed? Justify.</p>	MrktDept to FunDept	80m	MrktDept to LegalDept	180m	MrktDept to SalesDept	100m	LegalDept to SalesDept	150m	LegalDept to FunDept	100m	FunDept to SalesDept	50m	MrktDept	20	LegalDept	10	FunDept	08	SalesDept	42	4
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Ans

i) Suggest a cable layout of connections between the Departments and specify topology



Star Topology should be used.

[1/2markforcablelayout]

[1/2markfortopology]

ii) Suggest the most suitable building to place the server a suitable reason with a suitable reason.

Ans: As per 80–20 rule, MrktDept because it has maximum no. of computers.

[1mark for the correct Answer]

iii) Suggest the placement of i) modem ii) Hub/Switch in the network.

Ans: Each building should have hub/switch and Mode min case Internet connection is required.

[1mark for the correct Answer]

iv) The organization is planning to link its sale counter situated in various part of the same city/which type of network out of LAN, WAN ,MAN will be formed? Justify.

Ans : MAN(Metropolitan Area Network) [1markfor the correct Answer]

SECTION-C

Q4	a	Which clause is used to remove the duplicating rows of the table in SQL?	1
	Ans	DISTINCT [1 mark for correct answer]	
	b	Which key word is used to sort the records of a table in descending order?	1
	Ans	Order by <column name> desc [1 mark for correct answer]	
	c	What is Django?	1
	Ans	Django is a high-level Python web framework, Designed to help you build complex web applications simply and quickly. Django makes it easier to build better web apps quickly and with less code. [1 mark for correct answer]	
	d	Write the necessary command to incorporate SQL interface within Python.	1
	Ans	import MySQLdb [1 mark for correct statement]	
	e	Differentiate between Alternate key and candidate? OR Differentiate between domain and cardinality	2
	Ans	[1/2 marks for any correct difference maximum 1 marks]	

		OR																																																																							
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f		Give any two differences between GET and POST submission methods of HTML form.	2																																																																						
Ans	<table border="1"> <tr> <td>GET method</td> <td>POST method</td> </tr> <tr> <td>all form data is encoded into the URL appended to the action URL as query string parameters</td> <td>form data appears within the message body of the HTTP request</td> </tr> <tr> <td>Parameters remain in browser history hence cannot be used to send password like sensitive information.</td> <td>Parameters are not saved in browser history hence can be used to send sensitive information</td> </tr> <tr> <td>can be bookmarked</td> <td>cannot be bookmarked</td> </tr> <tr> <td>Easier to hack for script kiddies</td> <td>More Difficult to hack</td> </tr> <tr> <td>Can be cached</td> <td>Cannot be cached</td> </tr> </table>	GET method	POST method	all form data is encoded into the URL appended to the action URL as query string parameters	form data appears within the message body of the HTTP request	Parameters remain in browser history hence cannot be used to send password like sensitive information.	Parameters are not saved in browser history hence can be used to send sensitive information	can be bookmarked	cannot be bookmarked	Easier to hack for script kiddies	More Difficult to hack	Can be cached	Cannot be cached																																																												
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g	<p>Write a output for SQL queries (i) to (iii) , which are based on the tables: TRAINER and COURSE</p> <p align="center">TRAINER</p> <table border="1"> <thead> <tr> <th>TID</th> <th>TNAME</th> <th>CITY</th> <th>HIREDATE</th> <th>SALARY</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>SUNAINA</td> <td>MUMBAI</td> <td>1998-10-15</td> <td>90000</td> </tr> <tr> <td>102</td> <td>ANAMIKA</td> <td>DELHI</td> <td>1994-12-24</td> <td>80000</td> </tr> <tr> <td>103</td> <td>DEEPTI</td> <td>CHANDIGARH</td> <td>2001-12-21</td> <td>82000</td> </tr> <tr> <td>104</td> <td>MEENAKSHI</td> <td>DELHI</td> <td>2002-12-25</td> <td>78000</td> </tr> <tr> <td>105</td> <td>RICHA</td> <td>MUMBAI</td> <td>1996-01-12</td> <td>95000</td> </tr> <tr> <td>106</td> <td>MANIPRABHA</td> <td>CHENNAI</td> <td>2001-12-12</td> <td>69000</td> </tr> </tbody> </table> <p align="center">COURSE</p> <table border="1"> <thead> <tr> <th>CID</th> <th>CNAME</th> <th>FEES</th> <th>STARTDATE</th> <th>TID</th> </tr> </thead> <tbody> <tr> <td>C201</td> <td>AGDCA</td> <td>12000</td> <td>2018-07-02</td> <td>101</td> </tr> <tr> <td>C202</td> <td>ADCA</td> <td>15000</td> <td>2018-07-15</td> <td>103</td> </tr> <tr> <td>C203</td> <td>DCA</td> <td>10000</td> <td>2018-10-01</td> <td>102</td> </tr> <tr> <td>C204</td> <td>DDTP</td> <td>9000</td> <td>2018-09-15</td> <td>104</td> </tr> <tr> <td>C205</td> <td>DHN</td> <td>20000</td> <td>2018-08-01</td> <td>101</td> </tr> <tr> <td>C206</td> <td>O LEVEL</td> <td>18000</td> <td>2018-07-25</td> <td>105</td> </tr> </tbody> </table> <p>(i) SELECT TID, TNAME, FROM TRAINER WHERE CITY NOT IN('DELHI', 'MUMBAI'); (ii) SELECT TID ,COUNT(*), MIN(FEES) FROM COURSE GROUP BY TID HAVING COUNT(*)>1; (iii) SELECT COUNT(*), SUM(FEES) FROM COURSE WHERE STARTDATE<'2018-09-15';</p>	TID	TNAME	CITY	HIREDATE	SALARY	101	SUNAINA	MUMBAI	1998-10-15	90000	102	ANAMIKA	DELHI	1994-12-24	80000	103	DEEPTI	CHANDIGARH	2001-12-21	82000	104	MEENAKSHI	DELHI	2002-12-25	78000	105	RICHA	MUMBAI	1996-01-12	95000	106	MANIPRABHA	CHENNAI	2001-12-12	69000	CID	CNAME	FEES	STARTDATE	TID	C201	AGDCA	12000	2018-07-02	101	C202	ADCA	15000	2018-07-15	103	C203	DCA	10000	2018-10-01	102	C204	DDTP	9000	2018-09-15	104	C205	DHN	20000	2018-08-01	101	C206	O LEVEL	18000	2018-07-25	105		3
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	<p>Ans</p> <p>(i) TID TNAME 103 DEEPTI 106 MANIPRABHA (1 Mark for correct output)</p> <p>(ii)</p> <p>TID COUNT(*) MIN(FEES) 101 2 12000 (1 Mark for correct output)</p> <p>(iii)</p> <p>COUNT(*) SUM(FEES) 4 65000 (1 Mark for correct output)</p>	
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h	<p>Write SQL queries for (i) to (iv) , which are the based on the tables : TRAINER and COURSE given in the question 4(g):</p> <p>(i) Display the Trainer Name, City & Salary in descending order of their Hiredate. Ans: SELECT TNAME,CITY,SALARY FROM TRAINER ORDER BY HIREDATE; (1 Mark for correct queries)</p> <p>(ii) To display the TNAME and CITY of trainer who joined the institute in the month of December 2001. Ans: SELECT TNAME,CITY FROM TRAINER WHERE HIREDATE BETWEEN '2001-12-01' AND '2001-12-31'; (1 Mark for correct queries)</p> <p>(iii) To display TNAME, HIREDATE, CNAME, STARTDATE from tables TRAINER and COURSE of all those courses whose FEES is less than or equal to 10000. Ans : SELECT TNAME, HIREDATE,CNAME,STARTDATE FROM TRAINER, COURSE WHERE TRAINER.TID=COURSE.TID AND FEES<=10000; (1 Mark for correct queries)</p> <p>(iv) To display number of trainers from each city. Ans: SELECT CITY, COUNT(*) FROM TRAINER GROUP BY CITY; (1 Mark for correct queries)</p>	4
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SECTION-D

Q5	a	How does phishing happens	1
	Ans	<p>In phishing an imposter uses an authentic looking email or web-site to trick recipients into giving out sensitive personal information. For instance, you may receive an email from your bank (which appears genuine to you) asking to update your information online by clicking at a specified link. Though it appears genuine, you may be taken to a fraudulent site where all your sensitive information is obtained and later used for cyber-crimes and frauds.</p> <p>[1 mark for correct process]</p>	
	b	Name any one open source operating system and open source browser	1
	Ans	<p>Linux (RedHate, Fedura, Obentu), Mozilla Firefox/Chrome/Opera</p> <p>[1/2 marks for correct operating system]</p> <p>[1/2 marks for correct browser name]</p>	
	c	What is meant by intellectual property? What are the provisions of protecting intellectual property in India?	2

	Ans	An invention, idea, design etc. that somebody has created and that the law prevents other people from copying is known as intellectual property. In India Intellectual Property is protected through one of the following protection laws- Copyright act Patents Act Designs Act [1 mark for explaining IP] [1 mark for protection law]	
	d	How to Recycle e-waste safely?	2
	Ans	1. Use a Certified e-waste recycler through certified e-waste recycler. 2. visit civic institution. Check with your local government, schools and universities for additional responsible recycling options. 3. Explore Retail Options 4. Donate your electronics. [2 marks for relevant answer]	
	e	What do you understand by plagiarism? Why is it punishable offence?	2
	Ans	Plagiarism is “copy in and publication” of another author’s “ language ,thoughts ,ideas ,or expressions” and the representation of them as one’s own original work. Plagiarism is considered academic dishonesty and a breach of journalistic ethics. The software available for Plagiarism checker are: (i) Dupl iChecker (ii) Grammarly (iii) Paperrater (iv) Plagiarisma	
	f.	How technology does affect society? Give two points in favor and two points in against.	2
	Ans	[1/2 marks for any correct benefits maximum 1marks] [1/2 marks for any correct drawback maximum 1 marks]	