

Class: XII

Subject: COMPUTER SCIENCE

<p>Q. No. 1</p>	<p>Rohit, a student of class 12th, is learning CSV File Module in Python. During examination, he has been assigned an incomplete python code (shown below) to create a CSV File 'Student.csv' (content shown below). Help him in completing the code which creates the desired CSV File.</p> <p><b>CSV File</b>          1,AKSHAY,XII,A          2,ABHISHEK,XII,A          3,ARVIND,XII,A          4,RAVI,XII,A          5,ASHISH,XII,A</p> <p><b>Incomplete Code</b></p> <pre>import _____ #Statement-1 fh = open(_____, _____, newline='') #Statement-2 stuwriter = csv._____ #Statement-3 data = [] header = ['ROLL_NO', 'NAME', 'CLASS', 'SECTION'] data.append(header) for i in range(5):     roll_no = int(input("Enter Roll Number : "))     name = input("Enter Name : ")     Class = input("Enter Class : ")     section = input("Enter Section : ")     rec = [_____] #Statement-4     data.append(rec) stuwriter. _____ (data) #Statement-5 fh.close()</pre>
<p>i.</p>	<p>Identify the suitable code for blank space in line marked as Statement-1.</p> <p>a) csv file          b) CSV          c) csv          d) Csv</p> <p>Correct Answer : c) csv</p>
<p>ii.</p>	<p>Identify the missing code for blank space in line marked as Statement-2?</p> <p>a) "School.csv","w"          b) "Student.csv","w"          c) "Student.csv","r"          d) "School.csv","r"</p> <p>Correct Answer : b) "Student.csv","w"</p>
<p>iii.</p>	<p>Choose the function name (with argument) that should be used in the blank space of line marked as Statement-3</p> <p>a) reader(fh)          b) reader(MyFile)          c) writer(fh)          d) writer(MyFile)</p>

	Correct Answer : c) writer(fh)
iv.	<p>Identify the suitable code for blank space in line marked as Statement-4.</p> <p>a) 'ROLL_NO', 'NAME', 'CLASS', 'SECTION'  b) ROLL_NO, NAME, CLASS, SECTION  c) 'roll_no','name','Class','section'  d) roll_no,name,Class,section c) co.connect()</p> <p>Correct Answer : d) roll_no,name,Class,section</p>
v.	<p>Choose the function name that should be used in the blank space of line marked as Statement-5 to create the desired CSV File?</p> <p>a) dump()  b) load()  c) writerows()  d) writerow()</p> <p>Correct Answer : c) writerows()</p>
Q. No. 2	<p>Amritya Seth is a programmer, who has recently been given a task to write a python code to perform the following binary file operations with the help of two user defined functions/modules:</p> <ol style="list-style-type: none"> <li><b>AddStudents()</b> to create a binary file called <b>STUDENT.DAT</b> containing student information – roll number, name and marks (out of 100) of each student.</li> <li><b>GetStudents()</b> to display the name and percentage of those students who have a percentage greater than 75. In case there is no student having percentage &gt; 75 the function displays an appropriate message. The function should also display the average percent.</li> </ol> <p>He has succeeded in writing partial code and has missed out certain statements, so he has left certain queries in comment lines. You as an expert of Python have to provide the missing statements and other related queries based on the following code of Amritya.</p> <p>Answer any four questions (out of five) from the below mentioned questions.</p> <pre>import pickle def AddStudents():     _____ #1 statement to open the binary file to write data     while True:         Rno = int(input("Rno :"))         Name = input("Name : ")         Percent = float(input("Percent :"))         L = [Rno, Name, Percent]         _____ #2 statement to write the list L into the file         Choice = input("enter more (y/n): ")         if Choice in "nN":             break F.close()</pre>

	<pre> def GetStudents() :     Total=0     Countrec=0     Countabove75=0     with open("STUDENT.DAT","rb") as F:         while True:             try:                 _____ #3 statement to read from the file                 Countrec+=1                 Total+=R[2]                 if R[2] &gt; 75:                     print(R[1], " has percent = ",R[2])                     Countabove75+=1             except:                 break         if Countabove75==0:             print("There is no student who has percentage more than 75")             average=Total/Countrec             print("average percent of class = ",average)  AddStudents() GetStudents() </pre>
i.	<p>Which of the following commands is used to open the file “STUDENT.DAT” for writing only in binary format? (marked as #1 in the Python code)</p> <ol style="list-style-type: none"> <li>F= open("STUDENT.DAT",'wb')</li> <li>F= open("STUDENT.DAT",'w')</li> <li>F= open("STUDENT.DAT",'wb+')</li> <li>F= open("STUDENT.DAT",'w+')</li> </ol> <p>Correct Answer : a. F= open("STUDENT.DAT",'wb')</p>
ii.	<p>Which of the following commands is used to write the list L into the binary file, STUDENT.DAT? (marked as #2 in the Python code)</p> <ol style="list-style-type: none"> <li>pickle.write(L,f)</li> <li>pickle.write(f, L)</li> <li>pickle.dump(L,F)</li> <li>f=pickle.dump(L)</li> </ol> <p>Correct Answer : c. pickle.dump(L,F)</p>
iii.	<p>Which of the following commands is used to read each record from the binary file STUDENT.DAT? (marked as #3 in the Python code)</p> <ol style="list-style-type: none"> <li>R = pickle.load(F)</li> <li>pickle.read(r,f)</li> <li>r= pickle.read(f)</li> <li>pickle.load(r,f)</li> </ol> <p>Correct Answer : a. R = pickle.load(F)</p>
iv.	<p>Which of the following statement(s) are correct regarding the file access modes?</p>

	<p>a. 'r+' opens a file for both reading and writing. File object points to its beginning.</p> <p>b. 'w+' opens a file for both writing and reading. Adds at the end of the existing file if it exists and creates a new one if it does not exist.</p> <p>c. 'wb' opens a file for reading and writing in binary format. Overwrites the file if it exists and creates a new one if it does not exist.</p> <p>d. 'a' opens a file for appending. The file pointer is at the start of the file if the file exists.</p> <p>Correct Answer : a</p>
v.	<p>Which of the following statements correctly explain the function of seek() method?</p> <p>a. tells the current position within the file.</p> <p>b. determines if you can move the file position or not.</p> <p>c. indicates that the next read or write occurs from that position in a file.</p> <p>d. moves the current file position to a given specified position</p> <p>Correct Answer : d</p>
Q. No. 3	<p>Krishnav is looking for his dream job but has some restrictions. He loves Delhi and would take a job there if he is paid over Rs.40,000 a month. He hates Chennai and demands at least Rs. 1,00,000 to work there. In any another location he is willing to work for Rs. 60,000 a month. The following code shows his basic strategy for evaluating a job offer.</p> <p>Code:</p> <pre> pay= _____ location= _____ if location == "Mumbai":     print ("I'll take it!") #Statement 1 elif location == "Chennai":     if pay &lt; 100000:         print ("No way") #Statement 2     else:         print("I am willing!") #Statement 3 elif location == "Delhi" and pay &gt; 40000:     print("I am happy to join") #Statement 4 elif pay &gt; 60000:     print("I accept the offer") #Statement 5 else:     print("No thanks, I can find something better")#Statement 6 </pre> <p>On the basis of the above code, choose the right statement which will be executed when different inputs for pay and location are given.</p>
i.	<p>Input: location = "Chennai", pay = 50000</p> <p>a. Statement 1</p> <p>b. Statement 2</p> <p>c. Statement 3</p> <p>d. Statement 4</p>

	Correct Answer : ii. Statement 2
ii.	<p>Input: location = "Surat" ,pay = 50000</p> <p>a. Statement 2 b. Statement 4 c. Statement 5 d. Statement 6</p> <p>Correct Answer: d. Statement 6</p>
iii.	<p>Input- location = "Any Other City", pay = 1</p> <p>a. Statement 1 b. Statement 2 c. Statement 4 d. Statement 6</p> <p>Correct Answer: d. Statement 6</p>
iv.	<p>Input location = "Delhi", pay = 500000</p> <p>a. Statement 6 b. Statement 5 c. Statement 4 d. Statement 3</p> <p>Correct Answer: c. Statement 4</p>
v.	<p>v. Input- location = "Lucknow", pay = 65000</p> <p>i. Statement 2 ii. Statement 3 iii. Statement 4 iv. Statement 5</p> <p>Correct Answer: d. Statement 5</p>
Q. No. 4	<p>Consider the following code and answer the questions that follow:</p> <pre>Book={1:'Thriller', 2:'Mystery', 3:'Crime', 4:'Children Stories'}</pre> <pre>Library ={'5':'Madras Diaries','6':'Malgudi Days'}</pre>
i.	<p>Ramesh needs to change the title in the dictionary book from 'Crime' to 'Crime Thriller'. He has written the following command: Book['Crime']='Crime Thriller' But he is not getting the answer. Help him choose the correct command:</p> <p>a. Book[2]='Crime Thriller' b. Book[3]='Crime Thriller' c. Book[2]='Crime Thriller' d. Book[3]='Crime Thriller'</p> <p>Correct Answer: b</p>
ii.	<p>The command to merge the dictionary Book with Library the command would be:</p> <p>a. d=Book+Library b. print(Book+Library) c. Book.update(Library)</p>

	d. Library.update(Book) Correct Answer: d																										
iii.	<p>What will be the output of the following line of code: print(list(Library))</p> <p>a. ['5', 'Madras Diaries', '6', 'Malgudi Days'] b. ('5', 'Madras Diaries', '6', 'Malgudi Days') c. ['Madras Diaries', 'Malgudi Days'] d. ['5', '6']</p> <p>Correct Answer: d</p>																										
iv.	<p>In order to check whether the key 2 is present in the dictionary Book, Ramesh uses the following command: 2 in Book He gets the answer 'True'. Now to check whether the name 'Madras Diaries' exists in the dictionary Library, he uses the following command: 'Madras Diaries' in Library But he gets the answer as 'False'. Select the correct reason for this:</p> <p>a. We cannot use the in function with values. It can be used with keys only. b. We must use the function Library.values() along with the in operator c. We can use the Library.items() function instead of the in operator d. Both b and c above are correct.</p> <p>Correct Answer: b</p>																										
v.	<p>With reference to the above declared dictionaries, predict the output of the following code fragments</p> <table border="1" style="margin-left: 40px;"> <thead> <tr> <th>Code 1</th> <th>Code 2</th> </tr> </thead> <tbody> <tr> <td>Library=Book</td> <td>Library=Book.copy()</td> </tr> <tr> <td>Library.pop(2)</td> <td>Library.pop(2)</td> </tr> <tr> <td>print(Library)</td> <td>print(Library)</td> </tr> <tr> <td>print(Book)</td> <td>print(Book)</td> </tr> </tbody> </table> <p>a)</p> <table border="1" style="margin-left: 40px;"> <thead> <tr> <th>Code 1</th> <th>Code 2</th> </tr> </thead> <tbody> <tr> <td>{1: 'Thriller', 2: 'Mystery', 3: 'Crime', 4: 'Children Stories'}</td> <td>{1: 'Thriller', 3: 'Crime', 4: 'Children Stories'}</td> </tr> <tr> <td>{1: 'Thriller', 2: 'Mystery', 3: 'Crime', 4: 'Children Stories'}</td> <td>{1: 'Thriller', 3: 'Crime', 4: 'Children Stories'}</td> </tr> </tbody> </table> <p>b)</p> <table border="1" style="margin-left: 40px;"> <thead> <tr> <th>Code 1</th> <th>Code 2</th> </tr> </thead> <tbody> <tr> <td>{2: 'Mystery'}</td> <td>{1: 'Thriller', 3: 'Crime', 4: 'Children Stories'}</td> </tr> <tr> <td>{1: 'Thriller', 2: 'Mystery', 3: 'Crime', 4: 'Children Stories'}</td> <td>{1: 'Thriller', 3: 'Crime', 4: 'Children Stories'}</td> </tr> </tbody> </table> <p>c)</p> <table border="1" style="margin-left: 40px;"> <thead> <tr> <th>Code 1</th> <th>Code 2</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> </tr> </tbody> </table>	Code 1	Code 2	Library=Book	Library=Book.copy()	Library.pop(2)	Library.pop(2)	print(Library)	print(Library)	print(Book)	print(Book)	Code 1	Code 2	{1: 'Thriller', 2: 'Mystery', 3: 'Crime', 4: 'Children Stories'}	{1: 'Thriller', 3: 'Crime', 4: 'Children Stories'}	{1: 'Thriller', 2: 'Mystery', 3: 'Crime', 4: 'Children Stories'}	{1: 'Thriller', 3: 'Crime', 4: 'Children Stories'}	Code 1	Code 2	{2: 'Mystery'}	{1: 'Thriller', 3: 'Crime', 4: 'Children Stories'}	{1: 'Thriller', 2: 'Mystery', 3: 'Crime', 4: 'Children Stories'}	{1: 'Thriller', 3: 'Crime', 4: 'Children Stories'}	Code 1	Code 2		
Code 1	Code 2																										
Library=Book	Library=Book.copy()																										
Library.pop(2)	Library.pop(2)																										
print(Library)	print(Library)																										
print(Book)	print(Book)																										
Code 1	Code 2																										
{1: 'Thriller', 2: 'Mystery', 3: 'Crime', 4: 'Children Stories'}	{1: 'Thriller', 3: 'Crime', 4: 'Children Stories'}																										
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Code 1	Code 2																										
{2: 'Mystery'}	{1: 'Thriller', 3: 'Crime', 4: 'Children Stories'}																										
{1: 'Thriller', 2: 'Mystery', 3: 'Crime', 4: 'Children Stories'}	{1: 'Thriller', 3: 'Crime', 4: 'Children Stories'}																										
Code 1	Code 2																										

	{1: 'Thriller', 3: 'Crime', 4: 'Children Stories'}	{1: 'Thriller', 3: 'Crime', 4: 'Children Stories'}
	{1: 'Thriller', 3: 'Crime', 4: 'Children Stories'}	{1: 'Thriller', 2: 'Mystery', 3: 'Crime', 4: 'Children Stories'}
d)	<b>Code 1</b>	<b>Code 2</b>
	{1: 'Thriller', 3: 'Crime', 4: 'Children Stories'}	{1: 'Thriller', 3: 'Crime', 4: 'Children Stories'}
	{1: 'Thriller', 2: 'Mystery', 3: 'Crime', 4: 'Children Stories'}	{1: 'Thriller', 3: 'Crime', 4: 'Children Stories'}
Correct Answer: c		

Q. No. 5

In a Database, there are two tables with the instances given below:

Table: STUDENTS

ADMNO	NAME	CLASS	SEC	RNO	ADDRESS	PHONE
1211	MEENA	12A	D	4	A-26	3245678
1212	VANI	10A	D	1	B-25	5456789
1213	MEENA	12B	A	1	NULL	NULL
1214	KARISH	10B	B	3	AB-234	4567890

Table: SPORTS

ADMNO	GAME	COACHNAME	GRADE
1215	CRICKET	MR. RAVI	A
1213	VOLLEYBALL	MR. AMANDEEP	B
1211	VOLLEYBALL	MR. GOVARDHAN	A
1212	BASKET BALL	MR TEWARI	B

i.

Choose the command to display name and game of those students whose address is available in students' table.

- SELECT NAME, GAME FROM STUDENTS, SPORTS WHERE STUDENTS.ADMNO=SPORTS.ADMNO AND ADDRESS IS NOT NULL;
- SELECT NAME, GAME FROM STUDENTS, SPORTS WHERE STUDENTS.ADMNO=SPORTS.ADMNO AND ADDRESS IS NULL;
- SELECT NAME, GAME FROM STUDENTS, SPORTS WHERE STUDENTS.ADMNO=SPORTS.ADMNO, ADDRESS IS NULL;
- SELECT NAME, GAME FROM STUDENTS, SPORTS WHERE STUDENTS.ADMNO=SPORTS.ADMNO NOT ADDRESS IS NULL;

	<p>Correct Answer:</p> <p>a. SELECT NAME, GAME FROM STUDENTS, SPORTS WHERE STUDENTS.ADMNO=SPORTS.ADMNO AND ADDRESS IS NOT NULL;</p>
ii.	<p>Identify the statement to delete a column phone from the table students.</p> <p>a. ALTER TABLE STUDENTS DROP PHONE;  b. DROP PHONE;  c. UPDATE DROP PHONE;  d. DELETE FROM STUDENTS WHERE DROP PHONE;</p> <p>Correct Answer:  a. ALTER TABLE STUDENTS DROP PHONE;</p>
iii.	<p>Choose the command to display Name of the students who are studying in class 12 and their corresponding Coach names</p> <p>a. SELECT NAME, COACHNAME FROM STUDENTS, SPORTS WHERE CLASS LIKE "12%" AND STUDENTS.ADMNO =SPORTS.ADMNO;  b. SELECT NAME, COACHNAME FROM STUDENTS, SPORTS WHERE CLASS LIKE "12%" AND STUDENTS.ADMNO= SPORTS.ADMNO;  c. SELECT NAME, COACHNAME FROM STUDENTS, SPORTS WHERE CLASS LIKE "12%" AND ADMNO.STUDENTS =ADMNO.SPORTS;  d. SELECT NAME, COACHNAME FROM STUDENTS, SPORTS WHERE CLASS LIKE= "12%" AND STUDENTS.ADMNO =SPORTS.ADMNO;</p> <p>Correct Answer:  a. SELECT NAME, COACHNAME FROM STUDENTS,SPORTS WHERE CLASS LIKE "12%" AND STUDENTS.ADMNO=SPORTS.ADMNO ;</p>
iv.	<p>which two select queries will give the same output</p> <p>A. SELECT NAME, GRADE FROM STUDENTS,SPORTS WHERE ADDRESS IS NULL AND STUDENTS.ADMNO =SPORTS.ADMNO ;  B. SELECT NAME, GRADE FROM STUDENTS,SPORTS WHERE ADDRESS IS NOT NULL AND STUDENTS.ADMNO =SPORTS.ADMNO ;  C SELECT NAME, GRADE FROM STUDENTS,SPORTS WHERE ADDRESS IS NULL OR STUDENTS.ADMNO=SPORTS.ADMNO ;  D. SELECT ST.NAME, SP.GRADE FROM STUDENTS ST,SPORTS SP WHERE ADDRESS IS NULL AND ST.ADMNO=SP.ADMNO ;</p> <p>a. A AND B  b. B AND C  c. A AND D  d. C AND D</p> <p>Correct Answer: c. A AND D</p>



v. Choose the command to count the number of students who play volleyball

a. SELECT COUNT(\*) FROM STUDENTS,SPORTS WHERE GAME="VOLLEYBALL" AND STUDENTS.ADMNO=SPORTS.ADMNO ;

b. SELECT COUNT(GAME) FROM STUDENTS,SPORTS WHERE GAME="VOLLEYBALL" AND STUDENTS.ADMNO=SPORTS.ADMNO ;

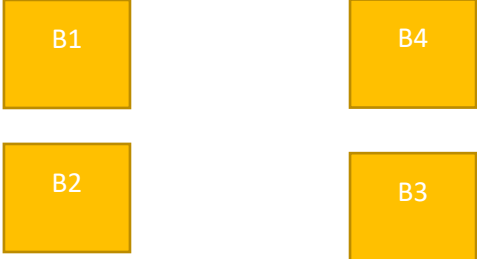
c. SELECT COUNT(\*) FROM STUDENTS,SPORTS WHERE GAME="VOLLEYBALL" ;

d. SELECT COUNT(\*) FROM STUDENTS,SPORTS WHERE SPORTS="VOLLEYBALL" AND STUDENTS.ADMNO=SPORTS.ADMNO

Correct Answer :

a. SELECT COUNT(\*) FROM STUDENTS,SPORTS WHERE GAME="VOLLEYBALL" AND STUDENTS.ADMNO=SPORTS.ADMNO ;

Q. No. 6 A company ABC Enterprises has four blocks of buildings as shown:



Center to center distance between various blocks

B3 TO B1	50 M
B1 TO B2	60 M
B2 TO B4	25 M
B4 TO B3	170 M
B3 TO B2	125 M
B1 TO B4	90 M

Number of computers in each block :

B1	150 M
B2	15 M
B3	15 M
B4	25 M

Computers in each block are networked but blocks are not networked. The company has now decided to connect the blocks also.

i. Suggest the most appropriate topology for the connections between the blocks.

a. Ring topology

b. Star topology

c. Mesh topology

d. Bus topology

	Correct Answer: b. Star topology
ii.	<p>The company wants internet accessibility in all the blocks. The suitable and cost-effective technology for that would be:</p> <ul style="list-style-type: none"> <li>a. Satellite</li> <li>b. Lease line</li> <li>c. Telephone line</li> <li>d. Broadband</li> </ul> <p>Correct Answer: d. Broadband</p>
iii.	<p>Which one of the following devices will you suggest for connecting all the computers with in each of their blocks?</p> <ul style="list-style-type: none"> <li>a. Switch/Hub</li> <li>b. Modem</li> <li>c. Telephone</li> <li>d. Repeater</li> </ul> <p>Correct Answer: a. Switch/Hub</p>
iv.	<p>The company is planning to link its head office situated in New Delhi with the offices in hilly areas. Suggest a way to connect it economically:</p> <ul style="list-style-type: none"> <li>a. Micro waves</li> <li>b. Coaxial cable</li> <li>c. Fibre optic</li> <li>d. Radio waves</li> </ul> <p>Correct Answer: d. Radio waves</p>
v.	<p>Suggest the most appropriate location of the server, to get the best connectivity for maximum number of computers.</p> <ul style="list-style-type: none"> <li>a. BLOCK B2</li> <li>b. BLOCK B1</li> <li>c. BLOCK B4</li> <li>d. BLOCK B3</li> </ul> <p>Correct Answer: b. BLOCK B1</p>
Q. No. 7	<p>Millions of computer science students have taken a course on algorithms and data structures, typically the second course after the initial one introducing programming. One of the basic data structures in such a course is the stack. The stack has a special place in the emergence of computing as a science, as argued by Michael Mahoney, the pioneer of the history of the theory of computing. The Stack can be used in many computer applications, few are given below:</p> <ul style="list-style-type: none"> <li>a) In recursive function</li> <li>b) When function is called.</li> <li>c) Expression conversion such as – Infix to Postfix, Infix to Prefix, Postfix to Infix, Prefix to Infix.</li> </ul> <p>In Stack, insertion operation is known as Push whereas deletion operation is known as Pop.</p> <p>Code – 1</p>

	<pre>def push(Country,N):     Country._____ (len(Country),N) #Statement 1  #Function Calling Country=[] C=['Indian', 'USA', 'UK', 'Canada', 'Sri Lanka'] for i in range(0,len(C),_____): #Statement 2     push(Country,C[i]) print(Country)</pre> <p><b>Required Output:</b> ['Indian', 'UK', 'Sri Lanka']</p> <p><b>Code - 2</b></p> <pre>def pop(Country):     if _____: #Statement 3         return "Under flow"     else:         return Country._____ () #Statement 4  #Function Calling for i in range(len(Country)+1):     print(_____ ) #Statement 5</pre> <p><b>Required Output:</b> Sri Lanka UK India Under flow</p> <p>Fill the above statement based on given questions:</p>
i.	<p>Identify the suitable code for the blank of statement 1.</p> <p>a. .append() b. .insert() c. .extend() d. .append(len(Country),N)</p> <p>Correct Answer : b. .insert()</p>
ii.	<p>Fill the statement 2, to insert the alternate element from Country list.</p> <p>a. 3 b. 0 c. -1 d. 2</p> <p>Correct Answer : d. 2</p>
iii.	<p>Fill the statement 3, to check the stack is empty.</p> <p>a. Country=[] b. Country.isEmpty() c. len(country)==0 d. No of the above</p>

	Correct Answer : c. len(country)==0
iv.	<p>Fill the statement 4, to delete an element from the stack.</p> <p>a. pop(1)  b. pop()  c. del country[1]  d. Country.delete(1)</p> <p>Correct Answer: b. pop()</p>
v.	<p>Fill the statement 5, to call the pop function.</p> <p>a. pop(C)  b. pop(Country)  c. call pop(Country)  d. def pop(Country)</p> <p>Correct Answer: b. pop(Country)</p>
Q. No. 8	<p>Arun, during Practical Examination of Computer Science, has been assigned an incomplete search() function to search in a pickled file student.dat. The File student.dat is created by his Teacher and the following information is known about the file.</p> <ul style="list-style-type: none"> <li>File contains details of students in [roll_no,name,marks] format.</li> <li>File contains details of 10 students (i.e. from roll_no 1 to 10) and separate list of each student is written in the binary file using dump().</li> </ul> <p>Arun has been assigned the task to complete the code and print details of roll number 1.</p> <pre>def search():     f = open("student.dat",____) #Statement-1     ____:                                #Statement-2         while True:             rec = pickle.____ #Statement-3             if(____):                    #Statement-4                 print(rec)         except:             pass     ____                                #Statement-5</pre>
i.	<p>In which mode Arun should open the file in Statement-1?</p> <p>a) r  b) r+  c) rb  d) wb</p> <p>Correct Answer: c) rb</p>
ii.	<p>Identify the suitable code to be used at blank space in line marked as Statement-2</p> <p>a) if(rec[0]==1)</p>

	<p>b) for i in range(10)  c) try  d) pass</p> <p>Correct Answer: c) try</p>
iii.	<p>Identify the function (with argument), to be used at blank space in line marked as Statement-3.</p> <p>a) load()  b) load(student.dat)  c) load(f)  d) load(fin)</p> <p>Correct Answer: c) load(f)</p>
iv.	<p>What will be the suitable code for blank space in line marked as Statement-4.</p> <p>a) rec[0]==2  b) rec[1]==2  c) rec[2]==2  d) rec[0]==1</p> <p>Correct Answer: d) rec[0]==1</p>
v.	<p>Which statement Arun should use at blank space in line marked as Statement-4 to close the file.</p> <p>a) file.close()  b) close(file)  c) f.close()  d) close()</p> <p>Correct Answer: c) f.close()</p>
Q. No. 9	<p>Radha Shah is a programmer, who has recently been given a task to write a python code to perform the following CSV file operations with the help of two user defined functions/modules:</p> <p>a. CSVOpen() : to create a CSV file called BOOKS.CSV in append mode containing information of books – Title, Author and Price.  b. CSVRead() : to display the records from the CSV file called BOOKS.CSV where the field title starts with 'R'.</p> <p>She has succeeded in writing partial code and has missed out certain statements, so she has left certain queries in comment lines.</p> <pre>import csv def CSVOpen():     with open('books.csv', '_____', newline='') as csvf:         #Statement-1         cw=_____ #Statement-2         _____ #Statement-3         cw.writerow(['Rapunzel', 'Jack', 300])         cw.writerow(['Barbie', 'Doll', 900])         cw.writerow(['Johnny', 'Jane', 280])  def CSVRead():</pre>

	<pre> try:     with open('books.csv','r') as csvf:         cr=_____ #Statement-4         for r in cr:             if _____: #Statement-5                 print(r) except:     print('File Not Found') </pre> <p> CSVOpen ()  CSVRead () </p> <p> You as an expert of Python have to provide the missing statements and other related queries based on the following code of Radha.  Answer any four questions (out of five) from the below mentioned questions. </p>
i.	<p> Choose the appropriate mode in which the file is to be opened in append mode (Statement 1) </p> <ol style="list-style-type: none"> <li>w+</li> <li>ab</li> <li>r+</li> <li>a</li> </ol> <p> Correct Answer: d. a </p>
ii.	<p> Which statement will be used to create a csv writer object in Statement 2. </p> <ol style="list-style-type: none"> <li>csv.writer(csvf)</li> <li>csv.writer(csvf)</li> <li>csvf.writer()</li> <li>cs.writer(csvf)</li> </ol> <p> Correct Answer: b. csv.writer(csvf) </p>
iii.	<p> Choose the correct option for Statement 3 to write the names of the column headings in the CSV file, BOOKS.CSV. </p> <ol style="list-style-type: none"> <li>cw.writerow("Title','Author','Price')</li> <li>cw.writerow(['Title','Author','Price'])</li> <li>cw.writerows("Title','Author','Price')</li> <li>cw.writerows(['Title','Author','Price'])</li> </ol> <p> Correct Answer: b. cw.writerow(['Title','Author','Price']) </p>
iv.	<p> Which statement will be used to read a csv file in Statement 4. </p> <ol style="list-style-type: none"> <li>cs.read(csvf)</li> <li>csv.reader(csvf)</li> <li>csvf.read()</li> <li>csvf.reader(cs)</li> </ol> <p> Correct Answer: b. csv.reader(csvf) </p>
v.	<p> Fill in the appropriate statement to check the field Title starting with 'R' for Statement 5 in the above program. </p> <ol style="list-style-type: none"> <li>r[0][0]=='R'</li> <li>r[1][0]=='R'</li> <li>r[0][1]=='R'</li> </ol>

	<p>d. d) r[1][1]=='R'</p> <p>Correct Answer: a. r[0][0]=='R'</p>
Q. No. 10	<p>Ankita is writing a program to perform some operations in Queue. She has created three Insert_in_Queue(Student), Delete_from_Queue(Student) and Print_Queue(Student) methods/functions in Python to add a new Student name, delete a Student name and print list of student from a queue, considering them to act as insert, delete and print operations of the Queue data structure. She is not getting the desired result. Help her to get the desired result from the given python code.</p> <pre>def Insert_in_Queue(queue):     a=input("enter student name: ")     queue._____ # Statement-1  def Delete_from_Queue (queue):     if (_____): # Statement-2         print("Queue empty")     else:         print("Deleted element is: ",queue[0])         del queue[___] #Statement-3  def Print_Queue(queue):     if not _____: #Statement-4         print(queue[ _ : _ ]) # Statement-5</pre>
i.	<p>What Ankita should write to complete the Statement-1 to store the student name?</p> <p>a. queue.append(a)  b. queue=append(a)  c. queue.append=a  d. append(a).queue</p> <p>Correct Answer: a queue.append(a)</p>
ii.	<p>Fill in the blank in Statement-2 to check whether the queue is empty or not?</p> <p>a. isEmpty(Queue)  b. isEmpty(q)  c. Queue.isEmpty  d. Empty.Queue</p> <p>Correct Answer: a isEmpty(Queue)</p>
iii.	<p>iii. Fill in the blank in Statement-3 with index number.</p> <p>a. delete(0)  b. del queue[0]  c. delete.queue(0)  d. queue.delete[0]</p> <p>Correct Answer: b) del queue[0]</p>
iv.	<p>Select the correct option to complete the statement at statement-4.</p> <p>a. isEmpty()  b. Empty()  c. len() = 0</p>

	<p>d. not Empty</p> <p>Correct Answer : a isEmpty()</p>
v.	<p>Specify the range to print all queue elements in statement-5?</p> <p>a. print(queue=[0:len=(queue)])  b. print(queue[0:len(queue)])  c. print(queue[[0:len]])  d. print(queue[0=len(queue)])</p> <p>Correct Answer : b. print(queue[0:len(queue)])</p>
Q. No. 11	<p>Priyank is a software developer with a reputed firm. He has been given the task to computerise the operations for which he is developing a form which will accept customer data as follows:</p>
	<p>i. The DATA TO BE ENTERED IS :</p> <p>a. Name  b. Age  c. Items bought( all the items that the customer bought)  d. Bill amount</p> <p>Correct Answer :</p>
	<p>ii. Choose the most appropriate data type to store the above information in the given sequence.</p> <p>a. string, tuple, float, integer  b. string, integer, dictionary, float  c. string, integer, integer, float  d. string, integer, list, float</p> <p>Correct Answer :</p>
	<p>iii. Now the data of each customer needs to be organised such that the customer can be identified by name followed by the age, item list and bill amount. Choose the appropriate data type that will help Priyank accomplish this task.</p> <p>a. List  b. Dictionary  c. Nested Dictionary  d. Tuple</p> <p>Correct Answer :</p>
	<p>iii. Which of the following is the correct way of storing information of customers named 'Paritosh' and 'Bhavesh' with respect to the option chosen above?</p> <p>a. a.customers= {'Paritosh':24,['Printed Paper', ' Penstand'], 3409, 'Bhavesh': 45,['A4 Rim','Printer Cartridge', 'Pen Carton', 'Gift Wrap'], 8099.99 }  b. customers={'Paritosh':[24,['Printed Paper', ' Penstand'], 3409], 'Bhavesh': [45,['A4 Rim','Printer Cartridge', 'Pen Carton', 'Gift Wrap'], 8099.99] }</p>



	<p>c. c.customers= ['Paritosh':24,'Printed Paper', ' Penstand', 3409, 'Bhavesh': 45,'A4 Rim','Printer Cartridge', 'Pen Carton', 'Gift Wrap', 8099.99 ]</p> <p>d. customers=('Paritosh':24,['Printed Paper', ' Penstand'], 3409, 'Bhavesh': 45,['A4 Rim','Printer Cartridge', 'Pen Carton', 'Gift Wrap'], 8099.99 )</p> <p>Correct Answer :</p>
	<p>iv. In order to calculate the total bill amount for 15 customers, Priyank</p> <p>Statement 1. must use a variable of the type float to store the sum.</p> <p>Statement 2. may use a loop to iterate over the values</p> <p>a. Both statements are correct.</p> <p>b. Statement 1 is correct, but statemnt 2 is not.</p> <p>c. Both statements ar incorrect.</p> <p>d. Statement 1 is incorrect but statement 2 is correct.</p> <p>Correct Answer :</p>
Q. No. 12	<p>Your teacher has given you a method/function FilterWords() in python which read lines from a text file NewsLetter.TXT, and display those words, which are lesser than 4 characters. Your teachers intentionally kept few blanks in between the code and asked you to fill the blanks so that the code will run to find desired result. Do the needful with the following python code.</p> <pre>def FilterWords():     c=0     file=open('NewsLetter.TXT', '_____') #Statement-1     line = file._____ #Statement-2     word = _____ #Statement-3     for c in word:         if _____: #Statement-4             print(c)             _____ #Statement-5</pre> <p>FilterWords()</p>
i.	<p>Write mode of opening the file in statement-1?</p> <p>a. a</p> <p>b. ab</p> <p>c. w</p> <p>d. r</p> <p>Correct Answer: d. r</p>
ii.	<p>Fill in the blank in statement-2 to read the data from the file.</p> <p>a. File.Read()</p> <p>b. file.read()</p> <p>c. read.lines()</p> <p>d. readlines()</p> <p>Correct Answer: b. file.read()</p>
iii.	<p>Fill in the blank in statement-3 to read data word by word.</p> <p>a. Line.Split()</p>

	<p>b. <code>Line.split()</code> c. <code>line.split()</code> d. <code>split.word()</code></p> <p>Correct Answer: c. <code>line.split()</code></p>
iv.	<p>Fill in the blank in statement-4, which display the word having lesser than 4 characters.</p> <p>a. <code>len(c) ==4</code> b. <code>len(c)&lt;4</code> c. <code>len ( )= =3</code> d. <code>len ( )==3</code></p> <p>Correct Answer: b. <code>len(c)&lt;4</code></p>
v.	<p>Fill in the blank in Statement-5 to close the file.</p> <p>a. <code>file.close()</code> b. <code>File.Close()</code> c. <code>Close()</code> d. <code>end()</code></p> <p>Correct Answer: a. <code>file.close()</code></p>

**Practice Questions - Class: XII**  
Session: 2021-22  
**Computer Science (Code 083)**  
(Theory: Term-1)

1. If the value of `i` is 5, the expression `i != 6`
  - a. has the value `False`
  - b. has the value `True`
  - c. sets the value of `i` to 6
  - d. sets the value of `i` to -5
  
2. The main difference between the modes `'w'` and `'a'` when opening a file in Python is that
  - a. `'w'` is used for writing a file and `'a'` for reading a file.
  - b. `'w'` over-writes an existing file while `'a'` writes to the end of the file.
  - c. `'w'` is used with text files while `'a'` is used with binary files.
  - d. `'w'` gives an error if the file does not exist while `'a'` creates it with no error.
  
3. Sushma gets the current date and time as a string `x`. Its value is `"2021-10-30 12:49:44.216062"`. Sushma prints the value of `x[11:16]` and gets `"12:49"`. Which of these will contain the date in `yyyy-mm-dd` format?
  - a. `x[0:9]`
  - b. `x[0:10]`
  - c. `x[1:10]`
  - d. `x[1:11]`
  
4. Python's `Pickle` module is used for serializing and de-serializing any Python object structure and dumping / loading it to or from a binary file. Which of these is a case where it can be useful?
  - a. graphically representing the contents of any Python object on the screen
  - b. sorting a large list of numbers in ascending or descending order quickly
  - c. storing the data in any Python object for later reconstruction or use
  - d. compressing a large dataset so that it can be saved in less than a tenth of the space

5. Which of these Python data structures cannot have duplicate items and does not support ordering?

- a. list
- b. tuple
- c. dictionary
- d. set

6. Which of these Python data structures would be most suited to store the list of Indian states and their corresponding capitals?

- a. list
- b. tuple
- c. dictionary
- d. set

7. The statement `p -= 5` has the same effect as which of these statements?

- a. `p = 5`
- b. `p = -5`
- c. `p = p - 5`
- d. `p = 5 - p`

8. Which output lines of the following program will print the same results?

```
tup1 = (10, 20, 30, 40, 50, 60, 70, 80, 90)
print(tup1[5:-1])           # 1
print(tup1[5])              # 2
print(tup1[5:])             # 3
print(tup1[-4:8])          # 4
```

- a. (1) and (2)
- b. (1) and (4)
- c. (2) and (3)
- d. (1), (3) and (4)

9. Every time Raj's python program accesses the internet, it records the time and website accessed in a log file 'internet\_access.log'. This is one of the sample lines in the log file:

```
2021-09-01 10:03:00, www.google.com
```

Which of these lines would be used by the program to open the file?

- a. `logfile = open('internet_access.log', 'rb')`
- b. `logfile = open('internet_access.log', 'w')`
- c. `logfile = open('internet_access.log', 'a+')`
- d. `logfile = open('internet_access.log', 'ab')`

10. Which of these functions can be used to set a file's current position?
- seek()
  - set()
  - tell()
  - open()
11. When setting the current position of a file, the position CANNOT be set with reference to which of these?
- the beginning of the file
  - the current file position
  - the middle of the file
  - the end of the file
12. If a function is defined by the line "def calculate(p, q=100, r=10):", which of the following is true?
- p is an optional parameter
  - q and r are optional parameters
  - q will always have value 100 in the function
  - the above line will cause a syntax error
13. Which of these points about the return statement is FALSE?
- A return statement can only be used inside a function
  - A return statement can be used without any expression
  - When encountered, a return statement terminates a function
  - A function cannot have more than one return statements
14. A CSV file
- is a text file
  - can store images
  - is a type of python program
  - is a Computer Software Validation file
15. Python's abs() function returns the absolute value of number passed to it. For example abs(5) is equal to 5 and abs(-3.1) = 3.1. What will be the value of
- abs(3 - abs(-10))
- 13
  - 13
  - 7
  - 7

16. Which of these statements about text and binary files is true?

- a. A text file has the same number of characters in each line unlike a binary file.
- b. A text file has a special End Of File character unlike a binary file.
- c. An HTML file is an example of a text file while a CSV file is an example of a binary file.
- d. Every character in a text file can occur in a binary file but the reverse is not true.

Read the below and answer questions 17 and 18:

The exponentiation operator in Python (**\*\***) has higher precedence than the division (**/**) and multiplication (**\***) operators, meaning that **\*\*** will be evaluated before **/** and **\*** in an expression. Operators **/** and **\*** have the same precedence.

Further, **\*\*** evaluates from *right to left*, meaning that if an expression has multiple operators of the same precedence of **\*\***, the operator on the right will be evaluated *before* the operator on the left. On the other hand, **/** and **\*** evaluate from *left to right*.

17. Which operator will be evaluated first in this expression?

`6 * 3 ** 2 ** 2 / 2`

- a. **\***
- b. the first **\*\*** from the left
- c. the second **\*\*** from the left
- d. **/**

18. What will be the value of this expression:

`4 / 2 ** 3 * 2`

- a. 16.0
- b. 1.0
- c. 1/4
- d. 1/16

---

19. Which of these statements about **for** and **while** loops in Python is TRUE?

- a. A **for** loop usually run a given number of times; a **while** loop runs while a condition is met.
- b. Statements in a **for** loop are always run at least once; those in a **while** loop may never be run.
- c. A **for** loop cannot contain another **for** loop; a **while** loop can contain another **while** loop.
- d. A **for** loop always has to have a loop counter; a **while** loop never uses a loop counter.

20. How does a Python program know where a **FOR** block ENDS?

- a. when it finds a closing bracket (**)** character
- b. when it finds the keyword **ENDFOR**
- c. when it finds a line with matching indentation
- d. when it finds a colon (**:**) character

21. Sonal wrote the following program `print_students.py` to print the number of students in her class.

```
class = 5
section = "A"
students = 30
print ("There are", students, "students in class", class, section)
```

However, when she ran the program, she got the following output:

```
File ".\print_students.py", line 1
    class = 5
    ^
SyntaxError: invalid syntax
```

Which of these changes will make the program run without error?

- writing `'=='` instead of `'='` (correct assignment operator)
- writing `"5"` instead of `5` (variable should be a string)
- changing the variable name (`'class'` is a reserved word)
- adding a colon (`':'`) at the end of the statement (begin indented block)

Read the following and answer questions 22 and 23:

A log file records the time, userid, record number and number of bytes read from a certain database. Each of the fields uses a fixed number of bytes. The last 3 lines of the file were as follows at some time:

```
2021-08-09 10:21:20::0014::06733628::00001024
2021-08-09 10:22:03::0443::06384626::00001024
2021-08-09 10:22:52::0014::00549374::00001024
```

22. What is the inter-field delimiter used by the file?

- Comma (,)
- Colon (:)
- Double-colon (::)
- Hyphen (-)

23. Which of these lines will return the latest entry from the file? (Assume the file handler is `file` and `SEEK_START` and `SEEK_END` represent the offsets from the beginning and end of the file respectively)

- `file.seek(-45, SEEK_END)`
- `file.seek(45, SEEK_END)`
- `file.seek(135, SEEK_START)`
- `file.seek(-135, SEEK_START)`

---

24. The advantage of opening a file using the `with` clause instead of the `open()` function is that:

- the access mode does not have to be specified
- the file does not have to explicitly be closed
- the filename does not have to be specified
- the file gets opened for reading and writing

25. What should appear in the place of the '?' symbol in the table below?

```
mystring = "I love Python"
```

Expression	Value
mystring[-1]	n
mystring[-3:]	hon
mystring[5:-4]	?

- e. e Py
- f. ve
- g. evol
- h. ython

26. Identify the error in the program below:

```
import pickle
print("The data that were stored in file are: ")
fileobject=open("mydata.dat","r")
objectvar=pickle.load(fileobject)
fileobject.close()
print(objectvar)
```

- a. The 3rd line should be fileobject=open("mydata.dat","rb")
- b. The 4th line should be objectvar=pickle.dump(fileobject)
- c. The fileobject.close() statement should come AFTER the print(objectvar) statement
- d. The last line should be print(fileobject)

27. What will be the output of this program?

```
p = None
q = 0
r = ""
s = "None"
if (p == q):
    print ("None is the same as 0")
elif (p == r):
    print ("None is the same as empty string")
elif (p == s):
    print ("None is the same as the string 'None'")
else:
    print ("None of the above")
```

- a. None is the same as 0
- b. None is the same as empty string
- c. None is the same as the string 'None'
- d. None of the above



In Python, lists are mutable and tuples immutable. See the program and answer questions 28 and 29:

```
list_items = ["Sachin", "Dravid", "Kapil", "Dhoni", "Sourav"]
tuple_items = ("Sunday", "Monday", "Tuesday", "Wednesday", "Thursday")
list_items[4] = "Harbhajan"
tuple_items[4] = "Friday"
print(list_items[4], tuple_items[4])
```

28. In python, the term mutable means:

- a. memory-efficient
- b. fixed
- c. changeable
- d. sequential

29. What will be the output of this program?

- a. Sourav Thursday
- b. Harbhajan Friday
- c. An error will be reported on line 3
- d. An error will be reported on line 4

---

30. What will be the output of this program? (All quotes shown are double quotes)

```
message = "My favourite movie is "3 Idiots""
print(message[23:])
```

- a. 3 Idiots
- b. 3 Idiots""
- c. Syntax error on line 1
- d. Syntax error on line 2

31. What will be the output of this program?

```
question = "How are you, Ravi?"
x = txt.find(",")
y = txt.find("?")
print(txt[x+2:y])
```

- a. How are you Ravi
- b. How are you
- c. Ravi
- d. Ravi?

32. What will be the output of this program?

```
m = 1
n = "1"
print (str(m) + n)
```

- a. 1
- b. 2
- c. 11
- d. Syntax Error

33. What will be the output of this Python line?

```
print("This is Delhi. # Delhi is the capital of India.") # This is a comment.
```

- a. This is Delhi.
- b. This is Delhi. # Delhi is the capital of India. # This is a comment.
- c. This is Delhi. # Delhi is the capital of India.
- d. This is Delhi. This is a comment.

34. What will be the output of this program?

```
p = "12"  
q = "5"  
r = 10  
s = 8  
print(p+q, r+s)
```

- a. 17 18
- b. 125 108
- c. 17 108
- d. 125 18

Study the following program which has an unintended error and answer questions 35 and 36. [Recall that range (m, n) is all integers from m to n-1]

```
i = 1  
while (i <= 10):  
    sum = 0  
    for x in range(1,i+1):  
        sum += x  
    print(i, sum)
```

# For every number i from 1 to 10  
# Set sum to 0  
# Add every number from 1 to i  
# print the result

35. What is the programmer trying to do in the program?

- a. Print all the odd numbers from 1 to 10
- b. Print the total of all numbers from 1 to 10
- c. For each number till 10, print the sum of numbers between 1 and the number.
- d. For each number till 10, print the sum of the number and its previous number

36. Identify the error in the program

- a. sum = 0 should be BEFORE the while statement
  - b. The range should be from 0 (not 1) to i + 1
  - c. i = i + 1 should be added after the print statement
  - d. There is no error in the program
-

37. What will this program output? [Recall that  $5 \% 3 = 2$ ,  $10 \% 2 = 0$  and  $7 \% 3 = 1$ ]

```
for i in range(0, 100):
    if (i % 3 == 0) or (i % 4 == 0):
        continue
    print(i)
```

- All numbers less than 100 that are multiples of 12
- All numbers less than 100 that are NOT multiples of 12
- All numbers less than 100 that are multiples of 3 or 4
- All numbers less than 100 that are NOT multiples of 3 or 4

38. See the following program snippet which lists out the names of all students:

```
student_list = ["Ravi", "Sunita", "Gopal", "Salma", "Lily"]
number_of_students = len(student_list)

i = 0
while i <= number_of_students:
    print(student_list[i])
    i += 1
```

When it was run, it gave the following error on the last line

IndexError: list index out of range

Which of these will correct the error?

- Replacing `i = 0` with `i = 1`
- Replacing `i <= number_of_students` with `i < number_of_students`
- Replacing `student_list[i]` with `student_list[i-1]`
- Replacing `i += 1` with `i = i + 1`

39. See the code below using Python's pickle module to STORE data into file 'Latlong data':

```
import pickle

data = ['New Delhi', '28.6139° N', '77.2090° E']

file = open('Latlong data', ____ (1) ____ )
pickle.__(2)__(data, file)
file.close()
```

What, respectively, should appear in blanks (1) and (2)?

- 'rb' and dump
- 'wb' and dump
- 'rb' and load
- 'wb' and load

40. What will be the value of p and r at the end of this program?

```
p = 40
r = 50
p = p + r
r = p - r
p = p - r
print (p, r)
```

- a. p = 40, r = 40
- b. p = 50, r = 50
- c. p = 50, r = 40
- d. p = 40, r = 50

Read the following and answer questions 41 and 42.

*File 'RoadNotTaken.txt' has these lines:*

```
Two roads diverged in a wood, and I-
I took the one less traveled by,
And that has made all the difference.
```

*The following code opens this file:*

```
fp = open("RoadNotTaken.txt", 'r')
poem = fp.readlines()
print (len(poem))
fp.close()
```

41. What is the data type of the variable poem?

- a. string
- b. list
- c. tuple
- d. dictionary

42. What will be the output of the above program?

- a. 2
- b. 3
- c. 8
- d. 22

---

43. The score of a student in a test is stored as a Python tuple. The test had 3 questions, with some questions having subparts whose scores are recorded separately.

```
score = (6, (5, (2, 1), 8), (4, 3, (1, 3, 2)))
print (score[2][2])
```

What will be the output of this program snippet?

- a. (1, 3, 2)
- b. (2, 1)
- c. 3
- d. 8

44. What will be the output of the program snippet below?

```
def phone_with_country_code (phone_number, country="India"):
    country_codes = {"India": "+91", "Singapore": "+65", "United States": "+1"}
    if country not in country_codes:
        return("Country is not supported")
    return (country_codes[country] + " " + phone_number)

print(phone_with_country_code("9876500001"), "|", phone_with_country_code("203-607-1232", "United States"))
```

- a. India 9876500001 | United States 203-607-1232
- b. +91 9876500001 | +1 203-607-1232
- c. 9876500001 | +1 203-607-1232
- d. 9876500001 | United States 203-607-1232

45. The choice() method of Python's random module returns a random element from a list. See the program below.

```
import random

suits = ("Hearts", "Clubs", "Diamonds", "Spades")
cards = ("Ace", "2", "3", "4", "5", "6", "7", "8", "9", "Jack", "Queen", "King")

card_picked = random.choice(cards) + " of " + random.choice(suits)
print(card_picked)
```

Which of these COULD be an output of this program?

- a. Hearts Ace
- b. Diamonds of Queen
- c. 7 of King
- d. Jack of Clubs

46. Study the manual entry for the split() method given below.

**split** (*sep=None, maxsplit=- 1*)

Return a list of the words in the string, using *sep* as the delimiter string. If *maxsplit* is given, at most *maxsplit* splits are done (thus, the list will have at most *maxsplit+1* elements). If *maxsplit* is not specified or `-1`, all possible splits are made.

What will be the output of the program given below?

```
string = "2021-08-09 10:22:03::0443::06384626::00001024"

parts = string.split("::", 2)
print(parts)
```

- a. ['2021-08-09 10:22:03', '0443::06384626::00001024']
- b. ['2021-08-09 10', '22', '03::0443::06384626::00001024']
- c. ['2021-08-09 10:22:03', '0443', '06384626::00001024']
- d. ['2021-08-09 10:22:03', '0443', '06384626', '00001024']

47. What will be the output of this program?

```
p = 1
q = 6

def change_values():
    global p
    q = 5
    p = p + q
    return (p)

change_values()
print(p, q)
```

- a. 6 5
- b. 1 5
- c. 6 6
- d. 1 6

Read the information below and answer questions 48 and 49

In Python and other languages, a 'regular expression' is a pattern of characters in which some characters have a special meaning. Specifically:

- 1. Any characters enclosed within square brackets ([]) represent any one of those characters
- 2. A \* following a character represents zero or more of those characters.
- 3. All letters and digits represent themselves

Thus:

ab\* could represent 'a', 'ab', 'abb', 'abbb' and so on but NOT 'bbb' or 'aba'. (Rules 2 and 3)

star[ekt] could represent 'stare', 'stark' or 'start' but NOT 'star' or 'are' (Rules 1 and 3)

a[bcd]\* could represent 'a', 'ab', 'abc', 'acdd' and so on but not 'aba' or 'aa' (Rules 1-3)

48. Which of these would NOT be represented by [ab]c\*?

- a. ac
- b. abc
- c. bc
- d. bccc

49. A factory codes its products using a series of letters and numbers. Each code starts with 10, 11 or 12 (representing different production locations), followed by an S, M or L (for Small, Medium or Large), followed by a 4 digit number. Which of the following would represent this?

- a. [101112][SML]1234
- b. 1[012]SML[123456789]
- c. 1[012][SML][0123456789][0123456789][0123456789][0123456789]
- d. [012][012][SML][0123456789][0123456789][0123456789][0123456789]

---

Nagesh and Simran have written this Python program. It asks for a student's name and roll no. If both match the records in a CSV file, it displays the student's English, Maths and Computer Science marks.

The marks data is stored in a file student\_marks.csv whose first 3 rows are as shown below:

```
Name, Roll No, Comments, English, Maths, Computer Science
Nagesh Rao, 12342, , 85, 92, 96
Simran Shah, 14324, Absent for English test, A, 87, 99
Ravi Gulati, 43234, , 76, 97, 81
```

Study the program and answer the questions that follow:

```
import csv

print("Enter your name and roll number to see your subject marks...\n")
name = input("Enter Name exactly as in Hall Ticket: ")
rollno = input("Enter Roll No.: ")

with open('student_marks.csv' _____ (1) _____) as csv_file:
    csv_reader = csv.reader(csv_file, delimiter=',')
    line_count = 0
    match_found = False
    for row in csv_reader:
        line_count += 1
        if line_count == 1:
            _____ (2) _____
        else:
            if row[0].lower() == name.lower() and row[1] == rollno:
                match_found = True
                eng_marks = row[3]
                maths_marks = row[4]
                cs_marks = row[5]
                print("\n"+row[0]+"s marks are:\nEnglish:", eng_marks)
                print("Maths:", maths_marks, "\nComp Sc:", cs_marks, "\n\nThank you!")
                _____ (3) _____
    if match_found == False:
        print ("\nNo matching name and roll number found. Please check and re-enter")
```

50. What mode of opening should come in blank 1?

- a. w
- b. a
- c. wb
- d. <nothing is needed - r is default>

51. What statements, respectively, should come in blanks 2 and 3? Choose the BEST answer.

- a. continue and continue
- b. break and break
- c. break and continue
- d. continue and break

52. What is the data type of the variable `match_found`?

- a. bytes
- b. str
- c. int
- d. bool

53. The file `student_marks.csv` contains a comment field in every row. Which of these comments may cause the program to fail to read that row properly?

- a. New student who joined school in Dec
- b. School Topper in English!
- c. Absent for English, Maths papers
- d. `<empty string>`

54. Which of these is an error in the program?

- a. `line_count` should be initialised to 1 (not 0) in line 9.
- b. The last 2 lines should have one less indentation.
- c. The file opened for reading is not closed using `close()`.
- d. None of the above.

55. For the names shown in the sample data, assuming the roll number is entered correctly, which of these will NOT find a match?

- a. Nagesh Rao
- b. Simram
- c. Ravi Gulati
- d. Simran shah