

INDIAN SCHOOL MUSCAT

FIRST PRE-BOARD EXAMINATION

JANUARY 2020

SET B

CLASS XII

Marking Scheme – COMPUTER SCIENCE [THEORY]

Q.NO.	Answers	Marks (with split up)
1. a.	char, int, float, double, void (Any 4)	$\frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} = 2$
b.	string.h iostream.h	$\frac{1}{2} + \frac{1}{2} = 1$
c.	#define Area(L,B) L*B // Error 1 struct Recta // Error 2 {int Length, Breadth; }; void main() {Recta R = {10,15} ; // Error 3 cout<<Area( R.Length,R.Breadth ); // Error 4 }	$\frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} = 2$
d.	Second&First First*Second Note: 1(first line correct) +1 (second line correct) = 2	1+1 = 2
e.	<u>output</u> 3*8 2.5*4 1.5*3	1+1+1 = 3
f.	(iii) 30\$40\$50\$60\$ Minimum value for variable End = 1 Maximum value for variable End = 5	1+ $\frac{1}{2}$ + $\frac{1}{2}$ = 2
2. a.	A default constructor is used to initialize an object of a class at the time of its creation and its done automatically. class X {int a; public: X() // default constructor { a=0; } };	1 + 1(for ex) = 2
b.	#### 71421 Polymorphism OR Function Overloading	$\frac{1}{2} + \frac{1}{2} + 1 = 2$
	OR	
b.	Any four differences between constructors and destructors.	$\frac{1}{2} + \frac{1}{2} + \frac{1}{2}$

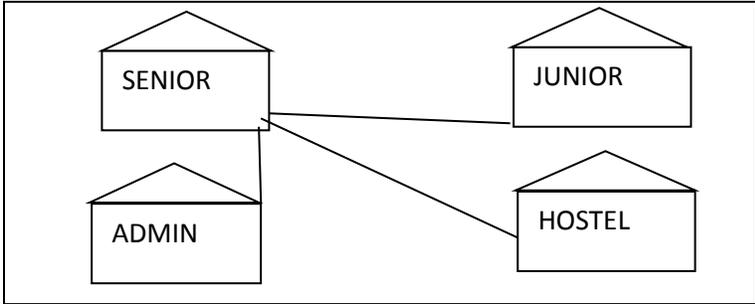
		+ ½ =2
c.	<pre> class Ele_Bill { char Cname[20]; long Pnumber; int No_of_units; float Amount; void Calc_Amount( ); public: void Accept(); void Display(); }; void Ele_Bill :: Calc_Amount( ) { if(No_of_units&lt;=50) { Amount=0;} else if(No_of_units&lt;=150) { Amount=(No_of_units-50)*0.80;} else if(No_of_units&lt;=350) { Amount=80+(No_of_units-150)*1.00;} else { Amount=80+200+(No_of_units-350)*1.20;} } void Ele_Bill :: Accept( ) { gets(Cname); cin&gt;Pnumber&gt;&gt;No_of_units; Calc_Amount( ); } void Ele_Bill :: Display( ) { cout&lt;&lt;Cname&lt;&lt;Pnumber&lt;&lt;No_of_units&lt;&lt;Amount; }  Note: class header and datamember declaration=1 mark Calc_Amount() = 1 mark, Accept() -1 mark, Display – 1 mark </pre>	1+1+1+1=4
d.	<p>i) Start(), Schedule::View(), Commence(), Programme::View()  ii) DD,MM,YYYY, Schedule::View(), Title, Commence( ), Programme::View( ) , Fname, Enter(), Show()  iii) S.Programme::View( );  iv) Programme( ), Faculty( ), Schedule( )</p> <p style="text-align: center;">OR</p>	1+1+1+1=4
d.	<pre> class District : public State { public : char    Dname[20]; float   Distance; long int Population; </pre>	1+1+1+1=4

	<pre>void DINPUT() { gets(Dname); cin&gt;&gt;distance; cin&gt;&gt;Population; } void DOUTPUT() { cout&lt;&lt;Dname&lt;&lt;endl; cout&lt;&lt;Distance&lt;&lt;endl; cout&lt;&lt;population&lt;&lt;endl; } }</pre> <p>Note: class header and datamember declaration=2 marks DINPUT() = 1 mark, DOUTPUT() -1 mark</p>	
3. a.	<pre>void AddEnd4(int A[ ][4], int R, int C) { int I,J,sum=0; for(I=0;I&lt;R;I++) { for(J=0;J&lt;C;J++) if(A[I][J]%10 ==4) sum=sum+A[I][J]; } cout&lt;&lt;sum; }</pre> <p>Note: Function header ½ mark Correct Logic-1 mark, Correct Output- ½ mark</p> <p style="text-align: center;">OR</p>	½ + 1 + ½ =2
a.	<p>Function header ½ mark Correct Logic-1 mark, Correct Output- ½ mark</p>	½ + 1 + ½ =2
b.	<pre>void EXTRA_ELEMENT(int A[], int B[],int N) { int i,j,flag=0; for(i=0;i&lt;N;i++) {for(j=0;j&lt;N;j++) {if(A[i]==B[j]) {flag=1; break;} } if(flag==0) cout&lt;&lt;"Extra element"&lt;&lt;A[i]; flag=0; }}}</pre> <p>Note:Function header ½ mark Correct Logic-2 marks, Correct Output- ½ mark</p>	½ + 2 + ½ =3
b.	OR	½ + 2 + ½

	<pre>void Reverse( int A[ ], int n) { int temp; for(int i=0;i&lt;n/2;i++) { temp=A[i]; A[i]=A[n-1-i]; A[n-1-i]=temp; } } </pre> <p>Note:Function header ½ mark Correct Logic-2 marks, Correct Output- ½ mark</p>	=3
c.	<p>LOC(S[I][J]) = B +W*((I-LBR) +R* (J-LBC)) Address = 8106</p> <p>Note: Correct formula = 1 mark, calculation =1 ½ marks, Result= ½ mark</p> <p style="text-align: center;">OR</p>	1+ 1 ½ + ½ =3
c.	<p>LOC(S[I][J]) = B +W*( C*(I-LBR) + (J-LBC)) Address = 5012</p> <p>Note: Correct formula = 1 mark, calculation =1 ½ marks, Result= ½ mark</p>	1+ 1 ½ + ½ =3
d.	<p>Function header ½ mark Correct Logic of inserting an element in a Queue- 3 ½ marks</p> <p style="text-align: center;">OR</p>	½ + 3 ½ =4
d.	<p>Function header ½ mark Correct Logic of pushing an element in a Stack- 3 ½ marks</p>	½ + 3 ½ =4
e.	<p>AB/CDE-*+ Correct steps showing stack status- 1 ½ marks, Final correct result- ½ mark</p> <p style="text-align: center;">OR</p>	2
e.	<p>Result-55 Correct steps showing stack status- 1 ½ marks, Final correct result- ½ mark</p>	2
4. a.	<pre>void RevText( ) { ifstream Fin("Input.txt"); char Word[20]; while(!Fin.eof()) { Fin&gt;&gt;Word; if(Word[0] == 'I') strrev(Word); cout&lt;&lt;Word&lt;&lt; " "; }Fin.close(); } </pre> <p>Note: 1 ½ mark for file operation logic. ½ mark for output</p>	2

	OR	
a.	<pre>void Countalpha() { ifstream ifile ("BOOK.txt"); char ch; int count =0; while (! ifile.eof()) { ifile.get(ch); if(islower(ch)) count ++; } ifile.close(); cout&lt;&lt; "No,of lower case alphabets="&lt;&lt; count ; } </pre> <p>Note: 1 ½ mark for file operation logic. ½ mark for output</p>	2
b.	<pre>void Read_File() {BUS B; ifstream Fin; Fin.open("Bus.Dat", ios::binary); while(Fin.read((char *) &amp;B, sizeof(B))) {if(strcmp(B.EndTo(), "Cochin")==0) {B.show() ; }} Fin.close(); } </pre> <p>Note: 2 ½ mark for file operation logic. ½ mark for output</p> <p style="text-align: center;">OR</p>	3
b.	<pre>void Addrecord() {ofstream ofile; ofile.open("STUDENT.dat", ios ::app); STU S; char ch='Y'; while (Ch=='Y'    Ch == 'y') { S.Enter(); ofile.write (Char*) &amp; S, sizeof(s)); cout &lt;&lt; "more (Y/N)"; cin&gt;&gt;ch; } ofile.close(); } </pre> <p>Note: 2 ½ mark for file operation logic. ½ mark for output</p>	3
c.	<p>Total Count:500 At Product: 73</p> <p style="text-align: center;">OR</p>	$\frac{1}{2} + \frac{1}{2} = 1$
c.	fstream/ ifstream	$\frac{1}{2} + \frac{1}{2} = 1$
5. a.	<p>i) Candidate Key: Pno, Name ii) Degree:4 Cardinality:3</p>	1 + 1 = 2
b.	<p>i) SELECT TNAME, CITY, SALARY FROM TRAINER ORDER BY HIREDATE DESC; ii) SELECT TNAME, CITY FROM TRAINER WHERE HIREDATE BETWEEN '2001-12-01' AND '2001-12-31' ;</p>	4 + 2 = 6
	iii) SELECT TNAME,HIREDATE,CNAME,STARTDATE FROM TRAINER, COURSE	

	<p>WHERE TRAINER.TID=COURSE.TID AND FEES&lt;=10000;</p> <p>iv) SELECT CITY, COUNT(*) FROM TRAINER GROUP BY CITY;</p> <p>v) <u>TID</u> <u>TNAME</u>  103 DEEPTI  106 MANIPRABHA</p> <p>vi) <u>DISTINCT TID</u>  101  102  103  104  105</p> <p>vii) <u>TID</u> <u>COUNT(*)</u> <u>MIN(FEES)</u>  101 2 12000</p> <p>viii) <u>COUNT(*)</u> <u>SUM(FEES)</u>  4 65000</p>																										
6. a.	<p>Distributive Law:  <math>A+BC=(A+B)(A+C)</math>  OR  <math>A(B+C)=AB+AC</math></p> <p>Note: 1 mark for any 1 law and 1 mark for truth table verification.</p>	2																									
b.	<p>The diagram shows a logic circuit with three inputs: U, V, and W. Input V is inverted. There are three OR gates: the first takes U and V' as inputs; the second takes U and W as inputs; the third takes V and W' as inputs. The outputs of the first two OR gates are connected to an AND gate. The output of this AND gate and the output of the third OR gate are connected to a final AND gate.</p> <p><math>((U + V').(U + W)). (V + W')</math></p>	2																									
c.	<p><math>F(X,Y,Z) = X'Y'Z'+X'Y'Z+XY'Z'+XYZ</math>  OR  <math>F(X,Y,Z) = \sum(0,1,4,7)</math></p>	1																									
d.	<table border="1"> <thead> <tr> <th></th> <th><math>Z'W'</math></th> <th><math>Z'W</math></th> <th><math>ZW</math></th> <th><math>ZW'</math></th> </tr> </thead> <tbody> <tr> <th><math>X'Y'</math></th> <td>1</td> <td>1</td> <td>1</td> <td>1</td> </tr> <tr> <th><math>X'Y</math></th> <td>1</td> <td>1</td> <td></td> <td></td> </tr> <tr> <th><math>XY</math></th> <td></td> <td></td> <td></td> <td>1</td> </tr> <tr> <th><math>XY'</math></th> <td>1</td> <td></td> <td>1</td> <td>1</td> </tr> </tbody> </table> <p>Simplified Expression, <math>F(X,Y,Z,W): X'Z'+Y'W'+Y'Z+XZW'</math>  Note: 1 mark for proper drawing and marking the quads and pair.  1 ½ marks for proper expressions for each and ½ mark for final exp.</p>		$Z'W'$	$Z'W$	$ZW$	$ZW'$	$X'Y'$	1	1	1	1	$X'Y$	1	1			$XY$				1	$XY'$	1		1	1	3
	$Z'W'$	$Z'W$	$ZW$	$ZW'$																							
$X'Y'$	1	1	1	1																							
$X'Y$	1	1																									
$XY$				1																							
$XY'$	1		1	1																							
7. a.	Vinod's email has been attacked with spam. These may be promotional mails	1+1 = 2																									

	from different advertisement groups. Vinod must have checked some promotional offers while surfing the Internet. He should create filters in his email to stop receiving these unwanted mails.	
b.	LAN(Local Area Network)	1
c.	Guided media uses cables to connect computers, whereas unguided media uses waves.	1
d.	i) Code Division Multiple Access ii) Hyper Text Transfer Protocol iii) Extensible Markup Language iv) Uniform Resource Locator	$\frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} = 2$
e.	i) Best wired medium: Optical Fibre OR CAT5 OR CAT6 OR CAT7 OR CAT8 OR Ethernet Cable.   <p style="text-align: center;">Cable layout (Star Connection) ,Total length= 500 Mtrs</p>	1
	ii) Wing Senior(S)-Because it has maximum number of computers (80-20 Rule).	1
	iii) Firewall - Placed with the server at Senior	1
	iv) Device Name: WiFi Router OR WiMax OR RF Router OR Wireless Modem OR RFTransmitter Protocol : WAP OR 802.16 OR TCP/IP OR VOIP OR MACP OR 802.11	1