SULIT

UTM
UNIVERSITI TEKNOLOGI MALAYSIA

Faculty of Computing

UNIVERSITI PENYELIDIKAN

UNIVERSITI TEKNOLOGI MALAYSIA

SEMESTER I, 2017 / 2018

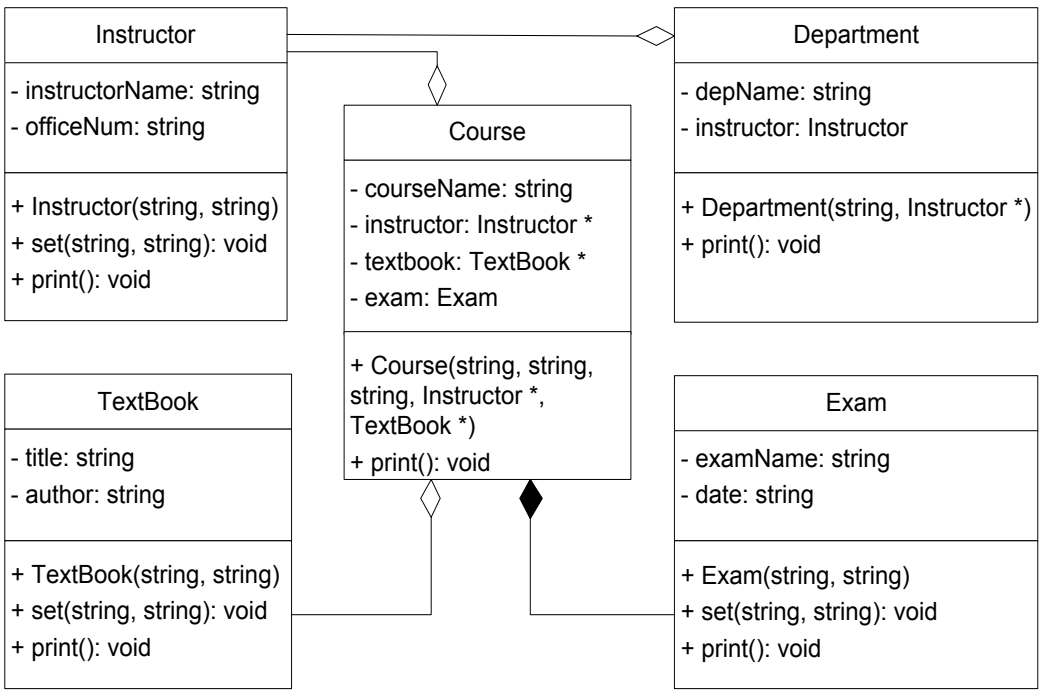
PROGRAMMING TECHNIQUE II (SCSJ1023)

PAPER I (THEORY)

SOLUTION

Question 1 **[40 marks]**

(i) (23 marks)



Each class 4 marks: (3m x 5 = 15 marks)

- Class name 1m
- Member variables 1 m
- Member functions 1 m

Each class relationship 2 marks: (2m x 4 = 8 marks)

- Line connection 1m
- Correct use of diamond (white or black) 0.5m
- Correct position of diamond 0.5m

(ii) (17 marks)

1m each line 1m x 17 = 17 marks

Line	Output
140	Course code: SCSJ1023 Course name: Programming Technique II Instructor name: Noraminah Hassan Office number: N28A-512 Title: Introduction to C++ Author: Daniel Liang Exam name: Test 1 Date: 07 November 2017 (8 marks)

143	Department name: Software Engineering Instructor name: Amir Hamzah Office number: N28-301 (3 marks)
147	Instructor name: Amir Hamzah Office number: N28-301 (2 marks)
150	Title: Starting Out with C++ Author: Gaddis (2 marks)
153	Exam name: Final Exam Date: 05 January 2018 (2 marks)

Question 2 **[40 marks]**

(i) (27 marks)

Line	Output
86	Class A with a1 = 2, a2 = 4, a3 = 6 Class B with b1 = 0 Class A with a1 = 0, a2 = 0, a3 = 0 Class B with b1 = 0 (6 marks)
87	Class A with a1 = 0, a2 = 0, a3 = 0 Class B with b1 = 0 Class C with c1 = 44, c2 = 88 (4.5 marks)
88	Class A with a1 = 10, a2 = 15, a3 = 55 (2 marks)
90	Print from class B (0.5 mark)
91	Print from class B Print from class C Print from class A (1.5 marks)
93	Class A object destroyed with a1 = 10, a2 = 15, a3 = 55 //2 Class C object destroyed with c1 = 44, c2 = 88 //1.5 Class B object destroyed with b1 = 0 //1 Class A object destroyed with a1 = 0, a2 = 0, a3 = 0 //2 Class B object destroyed with b1 = 0 //1 Class A object destroyed with a1 = 0, a2 = 0, a3 = 0 //2 Class B object destroyed with b1 = 0 //1 Class A object destroyed with a1 = 2, a2 = 4, a3 = 6 //2 (12.5 marks)

(ii) (5 marks). 0.5 each

	Member Variables					
Object	**a1**	**a2**	**a3**	**b1**	**c1**	**c2**
object1		Yes	Yes		No	
object2	Yes		Yes	Yes		Yes
Object3		Yes		No	No	

(iii) (8 marks). 0.5 each.

	Member Variables					
Object/ Method	**a1**	**a2**	**a3**	**b1**	**c1**	**c2**
object4	No	No	Yes			
void A::print()	Yes			No	No	
void B::print()		Yes	Yes	Yes	No	No
void C::print()	No	Yes		No	Yes	Yes

Question 3 **[20 marks]**

2m each question

No	Code to be inserted at Line 41 and 42	Output
a)	`FinalA *obj = new FinalC();` `obj->display('A');`	`Part B PT2, I get A`
b)	`FinalA *obj = new FinalB();` `obj->display('A');`	`Final Exam PT2, I get A`
c)	`FinalB *obj = new FinalC();` `obj->display('A');`	`Part A PT2, I get 65`
d)	`FinalC *obj = new FinalC();` `obj->display('A');`	`Part B PT2, I get A`
e)	`FinalB *obj = new FinalC();` `obj->display();`	`Answer Part B PT2, Good Luck!!`
f)	`FinalA *obj = new FinalB();` `obj->display();`	`Final Exam PT2, Good Luck!!`
g)	`FinalA *obj = new FinalC();` `obj->display();`	`Final Exam PT2, Good Luck!!`
h)	`FinalA *obj = new FinalB();` `obj->display(85);`	`Part A PT2, I get 85`
i)	`FinalA *obj = new FinalC();` `obj->display(85);`	`Part A PT2, I get 85`
j)	`FinalB *obj = new FinalC();` `obj-> display(85);`	`Part A PT2, I get 85`