

Faculty of Engineering and Technology						
Ramaiah University of Applied Sciences						
Department	Computer Science and Engineering		Programme	B. Tech. in CSE		
Semester/Batch	03 rd /2017					
Course Code	CSC204A	Course Title	Advanced Programming Concepts			
Course Leader(s)	V S Yerragudi/V.Pujitha					
Assignment - 1						
Register No.			Name of the student			
Sections	Marking Scheme			Marks		
				Max Marks	First Examiner Marks	Moderator
Part A						
	A 1.1	Introduction with relevance of the discussion in paper		01		
	A 1.2	Summary of the paper		03		
	A 1.3	Conclusions drawn from the paper		01		
	Part-A Max Marks			05		
Part B.1						
	B 1.1	Introduction to problem		02		
	B 1.2	UI Selection		02		
	B 1.3	Object Decomposition		04		
	B 1.4	Conclusion		02		
B.1 Max Marks			10			
Part B.2						
	B 2.1	Introduction to development		02		
	B 2.2	Implementation methodology		03		
	B 2.3	Discussion of results		03		
	B 2.4	Conclusion		02		
	B.2 Max Marks			10		
Total Assignment Marks				25		

Course Marks Tabulation				
Component-1 (B) Assignment	First Examiner	Remarks	Moderator	Remarks
A				
B.1				
B.2				
Marks (out of 25)				
Signature of First Examiner		Signature of Moderator		

Please note:

1. Documental evidence for all the components/parts of the assessment such as the reports, photographs, laboratory exam / tool tests are required to be attached to the assignment report in a proper order.
2. The First Examiner is required to mark the comments in RED ink and the Second Examiner's comments should be in GREEN ink.
3. The marks for all the questions of the assignment have to be written only in the **Component – CET B: Assignment** table.
4. If the variation between the marks awarded by the first examiner and the second examiner lies within +/- 3 marks, then the marks allotted by the first examiner is considered to be final. If the variation is more than +/- 3 marks then both the examiners should resolve the issue in consultation with the Chairman BoE.

Assignment – 01
Term - 01

Instructions to students:

1. The assignment consists of **5** questions: Part A – **1** Question, Part B- **4** Questions.
2. Maximum marks is **25**.
3. The assignment has to be neatly word processed as per the prescribed format.
4. The maximum number of pages should be restricted to **10**.
5. Restrict your report for Part-A to 1 page only.
6. Restrict your report for Part-B to a maximum of 9 pages.
7. The printed assignment must be submitted to the course leader.
8. **Submission Date: 24/09/2018**
9. **Submission after the due date is not permitted.**
10. **IMPORTANT:** It is essential that all the sources used in preparation of the assignment must be suitably referenced in the text.
11. Marks will be awarded only to the sections and subsections clearly indicated as per the problem statement/exercise/question

Preamble

The course on advanced programming concepts is aimed at preparing the students to design, develop and test software applications by applying different programming paradigms. The students are taught the features of functional, object oriented and event-driven programming approaches with a sample language for each approach. They apply the constructs of these approaches to design and develop software applications. They also analyze the usefulness of programming paradigms and languages based on ease of expression and scale of development effort. The first part of this assignment assesses the ability of the student to judge the usefulness and applicability of functional programming approach. The second part of the assignment assesses the ability of the student to develop programs using the functional and event driven programming approaches. It also tests the student's ability to apply the features of the selected languages for the specific problem posed.

Part -A**(05 marks)**

Encapsulation and Inheritance are features of all Object Oriented programming languages. However, while they allow for better modularity and reduced coding, they can also be conflicting features, if not applied correctly.

Read the paper “**Encapsulation and Inheritance in Object-Oriented Programming Languages**” by A. Snyder and write an essay on the paper.

Your essay should emphasize on:

- A1.1** Introduction with relevance of the discussion in paper
- A1.2** Summary of the paper
- A1.3** Conclusions drawn from the paper

Part B**(20 Marks)**

Scenario: “ACME Buy N Save” is a grocery shop in ACME Land. They have approached you for development of a billing system for the computer in the shop. The system does not need to print bills but it would really help them if it can. Each bill contains the list of all items purchased along with quantity and subtotal. Each item has a product name, manufacturer name, product number, MRP (inclusive of tax) and discount given. The discounts vary between 10% and 50%. There are two types of items: Perishable items (like groceries) have a best before date and non-perishable items (like bulbs) that do not have a best before date. Each bill also shows the total price to be paid and the savings made on the purchase.

B .1 Select an appropriate programming approach for User Interface design and apply object decomposition on the problem posed.

Document the following in the report:

- B 1.1** Introduction to the problem
- B 1.2** Selection of an appropriate programming approach for UI design
- B 1.3** Object decomposition (include: Objects identified, Classes identified, Class hierarchy, and specification of fields and methods of each class)
- B 1.4** Conclusion

B .2 Develop the software required based on your design in QB.1 .

Document the following in the report:

- B 2.1** Introduction to development process
- B 2.2** Implementation methodology (Discuss the objects, message passing and important methods)
- B 2.3** Discussion of results (Provide at most four screenshots with explanation)
- B 2.4** Conclusion

Note: All code snippets are to be included in the Appendix and not in the chapters of the report.

