

Name:	 UPES <small>UNIVERSITY WITH A PURPOSE</small>
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2020

Course: Advanced Functional Thinking Program: B.Tech CSE Bigdata Course Code: CSBD 3005	Semester: V Time 03 hrs. Max. Marks: 100
--	---

SECTION A

- 1. Each Question will carry 5 Marks**
2. Instruction: Complete the statement / Select the correct answer(s)

S. No.		CO
Q 1	Which of the following function definition (may be more than 1) is has the return type Unit a. <code>def definition()=println("")</code> b. <code>def defini()={print("heoo") return Unit }</code> c. <code>def difji():Unit={print("hel")} ()</code> d. <code>def defi():Unit ={return Unit }</code>	CO2
Q 2	One of the following is an erroneous function definition, can you spot it a. <code>def functionName(x:Int,y:Int):Int=x+y</code> b. <code>def functionName(x:Int,y:Int):Int={return x+y}</code> c. <code>def functionName(x:Int,y:Int)={x+y}</code> d. <code>def functionName(x:Int,y:Int):Int{x+y} ()</code> .	CO3
Q 3	A closure is: a. A function whose return value depends on a variable declared outside it b. A function that takes, as argument, another function c. A function that returns, as argument, another function d. A function that returns a Future	CO2
Q 4	What is the advantage of Scala? a. Less error prone function style b. High Maintainability and productivity	CO1

	c. High scalability All of the above	
Q 5	State True or False Every class in Scala inherits from a superclass. Implicitly, this is scala.AnyRef. a. True b. False	CO1
Q 6	Traits are similar to Java's _____. a. Classes b. Methods c. Interfaces d. Polymorphism	CO4
SECTION B		
1. Each question will carry 10 marks 2. Instruction: Write short / brief notes		
Q 7	Write a Scala program to check whether a given string starts with 'UPES' or not	CO2
Q 8	Write a Scala program to check which number is nearest to the value 100 among two given integers. Return 0 if the two numbers are equal. {Hint, say user input 95 and 99, the answer will be 99}	CO1
Q 9	Create a class name 'Student' with string variable 'name' and an integer variable 'roll_no'. Assign the value of roll_no as 2 and that of name as 'john' by creating an object of the class 'Student'	CO3
Q 10	"Scala is a Scalable language", What is the meaning of scalable language? List at least five advanced features of scala programming. What do you mean by boilerplate code and name at least two programming language that are very much useful to reduce boiler plate code.	CO1
Q 11	Write a Scala program to find contiguous subarray within a given array of integers which has the largest sum. OR Write a Scala program to find the two elements from a given array of positive and negative numbers such that their sum is closest to zero.	CO3
SECTION-C		
1. Each question will carry 20 marks 2. Instruction: Write long answer		
Q 12	Define trait in scala. What is trait mixing. Create a trait name "student_records" having five trait variables say, name(str), department (str), roll (int), subject_name (string), marks (int). Also create a trait method to display the marks of a particular student and store the records for all students. Now, create a class name "student_details" which inherit the properties of trait "student_records", and print the name of the student who scored highest marks in any subject. Create one more trait "student_project", trait method "proj_details" which includes trait variables as project_name(str), project_credit(int), marks (int) and status (str type having only values pass fail), now through student details class print the marks and status of individual students. OR	CO4

<p>Create a class called Employee whose objects are records for an employee. This class will be a derived class of the class person which you will have to copy into a file of your own and compile. An employee record has an employee's name (inherited from the class person), an annual salary represented as a single value of type double, a year the employee started work as a single value of type int and a national insurance number, which is a value of type string. Your class should have a reasonable number of constructors and accessor methods, as well as an equals method. Write another class containing a main method to fully test your class definition.</p>	
---	--