

University of Mumbai

Program: **Information Technology**

Curriculum Scheme: Rev2019 'C' Scheme

Examination: SE Semester III

Course Code: ITC305 and Course Name: PCPF

Time: 2 hour 30 minutes

Max. Marks: 80

Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	Which is NOT , one of the standard Haskell type
Option A:	Booleans
Option B:	Lists
Option C:	Tuples
Option D:	Structures
2.	In simple Prolog implementation, which type refers to a symbol which represents a value like "a" or "b".
Option A:	Boolean
Option B:	Variable
Option C:	Atom
Option D:	Real
3.	What is the use of '=' in prolog programming?
Option A:	Unification
Option B:	Arithmetic Evaluation
Option C:	Reduction
Option D:	None of the above
4.	What is the use of 'is' in prolog programming?
Option A:	Unification
Option B:	Arithmetic Evaluation
Option C:	Reduction
Option D:	None of the above
5.	Why We Use Prolog Programming Language?
Option A:	SWI-Prolog is free, open-source, and very well maintained.
Option B:	It's much much easier to distribute SWI-Prolog applications than Java ones
Option C:	Prolog is much less verbose, which is helpful when during development.
Option D:	All of the above
6.	While implementing synchronization, in which method a thread runs a loop which keeps reevaluating particular conditions until that condition becomes true.
Option A:	chaining
Option B:	blocking
Option C:	clocking
Option D:	busy-wait

7.	Mnemonics to machine language translation is job of a System Program known as
Option A:	converter
Option B:	processor
Option C:	assembler
Option D:	debugger
8.	Which of the following is not one of the six principal mechanisms for thread creation in language or library.
Option A:	Co-begin
Option B:	Fork
Option C:	Implicit receipt
Option D:	Finally
9.	Which of the following statements is TRUE about scripting languages?
Option A:	Scripting languages requires the declaration of types for variables.
Option B:	Most scripting languages perform extensive compile-time checks to make sure that values are never used in inappropriate ways
Option C:	Some scripting languages even store numbers as strings, so calculations may not always be what you expect, although most auto-converting if needed.
Option D:	Scripting languages do not handle the type errors and require the programmer to check for these errors if they require to.
10.	Image 3 shows the haskell code. Which of the following options represents correct output when main is executed?
	<pre> mySelect :: (a-> Bool) -> [a] -> [a] mySelect _ [] = [] mySelect f (a : ab) = if f a then a : mySelect f ab else mySelect f ab main :: IO () main = do print \$ mySelect (/=25) [20..30] </pre>
Option A:	[20, 21, 22, 23, 24, 26, 27, 28, 29, 30] [25]
Option B:	[20, 21, 22, 23, 24, 26, 27, 28, 29, 30] 25
Option C:	[21, 22, 23, 24, 26, 27, 28, 29] [25]
Option D:	20, 21, 22, 23, 24, 26, 27, 28, 29, 30 25

Q2	Solve any Four out of Six	5 marks each
A	Explain What are Facts, Rules & Queries in Logic Programming with example.	
B	Explain Life Cycle of Thread.	
C	Explain the different communication and synchronization techniques in concurrent programming model.	
D	What are Scripting Languages? List common characteristics of Scripting Languages.	
E	What mathematical formalism underlies functional programming?	
F	Write a note on Naming and Scoping rules for scripting languages.	

Q3	Solve any Two Questions out of Three	10 marks each
A	What is Data Hiding in Object Oriented Programming Paradigm? Describe how data hiding is implemented in C++ or Java.	
B	Define Haskell function that inputs one operator +,-,*,^ and two operands which may be Int, Integer, Float or Double. The function will perform the operation and computes the result. Clearly mention the type signature for the function. Note: Students are not expected to write the main function and do user IO.	
C	Explain the different communication and synchronization techniques in Concurrent Programming model.	

Q4	Solve any Two Questions out of Three	10 marks each
A	What is type checking and type clash? What do you mean by statically typed and strongly typed programming language? List any two statically typed languages.	
B	Explain following terms: Concurrent system, Parallel system, Distributed system, Race condition, Context switching.	
C	What is the role of an Exception Handler in a programming language? Briefly explain important tasks it performs.	