Reg.No. _____

Karunya UNIVERSITY

(Karunya Institute of Technology & Sciences)
(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

End Semester Examination – Nov/Dec – 2016

Code : 16CS1001
Sub. Name : Computational Thinking and Programming

Semester : 2016-17 ODD
Duration : 3hrs
Max. marks : 100

Q. No.	Questions				Course outcome	Marks
	PART-A (40X1=40 MULTIPLE CHOICE QUESTIONS)					
1.	Which of the following is a continuous data?				CO1	
	a. Age	b. Temperature	c. Count	d. Color		(1)
2.	The conversion of a digital signal into a sequence of characters is called				CO1	
	a. Encoding	b. Decoding	c. Modulation	d. Demodulation		(1)
3.	Which of the following is the compressed format for video data?				CO1	
	a. jpeg	b. mpeg	c. mp3	d. gif		(1)
4.	---------- are devices used for mass collection of data in a single location.				CO1	
	a. Data collectors	b. Clickers	c. Checkers	d. Crawlers		(1)
5.	---------- is a statement that set forth the evidence.				CO2	
	a. Proposition	b. Logic	c. Conclusion	d. Premise		(1)
6.	---------- requirements specify the tasks to be performed by an application.				CO2	
	a. Specification	b. Design	c. Functional	d.Non-functional		(1)
7.	Which of the following graphs is best for trend analysis?				CO2	
	a. Pie Chart	b. Line Graph	c. Bar Chart	d. 3D Graph		(1)
8.	Hiding irrelevant details and focusing on relevant details is known as ----------				CO2	
	a. Abstraction	b. Decomposition	c. Encapsulation	d. Polymorphism		(1)
9.	The process of checking whether a program works without any errors is called --------				CO2	
	a. Testing	b. Debugging	c. Coding	d. Compiling		(1)
10.	The pictorial representation of algorithm is called				CO2	
	a. Data representation	b. Flow chart	c.Bar chart	d. Pseudocode		(1)
11.	Applications of Propositional Logic are				CO2	
	a. Querying search engines	b. Analysis and synthesis of digital circuits	c. Querying databases	d.All of the above		(1)
12.	Which of the following is **not** a process used in computational thinking to tackle a problem?				CO2	
	a. Patterns and Generalization	b. Abstraction	c. Decomposition	d. Testing		(1)
13.	The following process applies *divide and conquer* technique to solve a problem				CO2	
	a. Abstraction	b. Decomposition	c. Generalization	d. Slicing		(1)
14.	A logic gate in which any one of inputs is 1 results in output as 1 is said to be_____				CO2	
	a. IN gate	b. AND gate	c. OR gate	d. OUT gate		(1)
15.	The ---------- structure is used for repeating a set of tasks.				CO2	
	a. Sequential	b. Selection	c. Modular	d. Iteration		(1)
16.	What is the output of the following code snippet?				CO3	

	pi=3.14 *print("The value of pi is ",pi)*					
	a. The value of pi is pi	b. *The value of pi is 3.14*	c. *The value of pi is, 3.14*	d. *The value of pi is, pi*		(1)
17.	Identify what **does not** suit a variable from the following options				CO3	
	a. A variable holds data in a program	b. A variable can change its memory location during program execution	c. A variable identifies a memory location where data is stored.	d. A variable can change its value during program execution.		(1)
18.	The association of an identifier with a value is called ----------				CO3	
	a. Association identification	b. Name mangling	c. Name binding	d. Name association		(1)
19.	---------- statement skips the current iteration and continues the loop from the next iteration.				CO3	
	a. Break	b. Continue	c. Pass	d. Skip		(1)
20.	A function calling itself is called ----------.				CO3	
	a. Recursion	b. Callback	c. Function call	d. Formal call		(1)
21.	The ---------- function is used along with for loop to process a set of statements between two limits.				CO3	
	a. range	b. rangeOf	c. range_of	d. step		(1)
22.	What values will be printed if the loop below is executed? *for value in range(1,5):* *print(value)*				CO3	
	a. 1 2 3 4 5	b. 1 2 3 4	c. 0 1 2 3 4	d. 0 1 2 3 4 5		(1)
23.	Which is the symbol used for modulus operator in Python?				CO3	
	a. mod	b. //	c. %	d. ^		(1)
24.	What is the output of the following code? *x,y,z= -2, -4, -5* *print(z)*				CO3	
	a. -2	b. -4	c. -5	d. 0		(1)
25.	A variable that can be accessed across all functions is called as a ---------- variable				CO3	
	a. Local	b. Global	c. Glocal	d. Static		(1)
26.	---------- keyword is used to define a function in Python.				CO3	
	a. #define	b. #def	c. def	d. define		(1)
27.	Which one of the following is a tuple?				CO3	
	a. ['t','u','p','l','e']	b. ('t','u','p','l','e')	c. {'t','u','p','l','e'}	d. 't','u','p','l','e'		(1)
28.	Which of the following is an iteration structure in Python?				CO3	
	a. range	b. for	c. do…while	d. repeat		(1)
29.	Which of the following is **not** true about lists in Python				CO3	
	a. Mutable	b. Immutable	c. Can contain elements of multiple data type	d. Can be concatenated.		(1)
30.	Which of the following is true for keyword arguments?				CO3	
	a. Function calls can be made with variable number of arguments	b. One or more arguments can be skipped	c. Arguments need not follow positional order	d. Arguments should follow a positional order.		(1)
31.	What is the output of 1**3				CO3	

	a. 1	b. 3	c. 13	d. 0.333		(1)
32.	---------- are used for pattern matching				CO3	
	a. Regular expressions	b. Quotations	c. Tuples	d. Strings		(1)
33.	If book='The Apple', what is the output of print(book[-1:-6]				CO3	
	a. Apple	b. elppA	c. The Apple	d. The		(1)
34.	---------- is the slicing operator in Python					
	a. [:]	b. +	c. []	d. *		(1)
35.	If n=20, what is the output of the operation n<<2?				CO3	
	a. 40	b. 10	c. 5	d. 80		(1)
36.	If k= -5, what is the output of ~k				CO3	
	a. -6	b. -4	c. +6	d. +4		(1)
37.	A ---------- is a type of malware that is often disguised as legitimate software.				CO4	
	a. Trojan	b. Virus	c. Boot virus	d. Macro virus		(1)
38.	Pick the odd man out					
	a. Safari	b. Firefox	c. Opera	d. Zoomerang		(1)
39.	Google is a ----------.				CO4	
	a. Search engine	b. Database	c. Datawarehouse	d.Trojan		(1)
40.	What is the output of the following code? flowers=('Rose','Lotus','Sun Flower', 'Lily') for f in flowers: print(len(f))				CO3	
	a. 4 5 10 4	b. Rose Lotus Sun Flower Lily	c. 5 6 11 5	d. 3 4 9 3		(1)

PART B(8 X 5 = 40 MARKS) (ANSWER ANY EIGHT)			
41.	The piano notes for the rhyme 'Incywincy spider' is as follows. Compress it using run-length encoding: GCCCDEEEDCDECEEFGGFEFGECCDEEDCDECGGCCCEEEDCDEC	CO1	(5)
42.	Draw the truth table for : a. XOR b. NAND	CO1	(5)
43.	Describe image encoding with an example.	CO1	(5)
44.	List the functional requirements of a Media player application.	CO1	(5)
45.	Explain any one application of deductive reasoning	CO2	(5)
46.	Write a Python program to find the largest number among three numbers.	CO3	(5)
47.	Define a Python function that accepts a number as input and returns the number of digits. Use it to print the number of digits of a given number.	CO3	(5)
48.	Differentiate a list and a tuple.	CO3	(5)
49.	Demonstrate the working of a selection sort on the list of values: 5,7,5,8,12,15	CO3	(5)
50.	Differentiate a virus and a Trojan.	CO4	(5)
PART C(2 X 10 = 20 MARKS) (ANSWER ANY TWO)			
51.	a. Convert $(AD7)_{16}$ to octal b. Explain the different categories of data with examples.	CO1	(4) (6)
52.	a. State the algorithm to find the roots of a quadratic equation and draw a flowchart for the same. b. Explain problem decomposition with an example.	CO2	(6) (4)
53.	a. Define a function in Python that returns the factorial of a number and use it to evaluate nCr. b. i. Define a tuple that contains the colors of a rainbow ii. How do you print the number of elements in the tuple? iii. Create another tuple that contains three more colors and join both the tuples. iv. Create a list with three colors : red, green and blue. v. Add a color 'Purple' to the above list.	CO3	(5) (5)

ALL THE BEST