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**PRESIDENCY UNIVERSITY
BENGALURU**

**SCHOOL OF ENGINEERING
END TERM EXAMINATION - JAN 2024**

Semester : Semester VII - 2020

Course Code : CSE2033

Course Name : Go Programming

Program : B.Tech. Computer Science and Engineering

Date : 03-JAN-2024

Time : 9:30AM - 12:30 PM

Max Marks : 100

Weightage : 50%

Instructions:

- (i) Read all questions carefully and answer accordingly.
- (ii) Question paper consists of 3 parts.
- (iii) Scientific and non-programmable calculator are permitted.
- (iv) Do not write any information on the question paper other than Roll Number.

PART A

ANSWER ALL THE QUESTIONS

4 X 5M = 20M

1. Read a list of integers and find sum of integers using c-style for loop. (CO1) [Knowledge]
2. Ask the user to input a sentence which contains at-least 4 words. Show a go program to capitalize first letter of each word and and display complete sentence. (CO2) [Knowledge]
3. Show a GO program that can swap two integers. Pass pointer parameters. (CO3) [Knowledge]
4. Explain Channel Buffering with an example (CO4) [Knowledge]

PART B

ANSWER ALL THE QUESTIONS

5 X 10M = 50M

5. Illustrate a go program to print prime numbers between 2 user given integers. (CO1) [Comprehension]
6. Demonstrate a GO function with one variadic parameter, which accepts a slice and then it finds the greatest number in a list of numbers. (write input and output) (CO2) [Comprehension]

7. Let's consider a scenario involving **two structs, Car and Bike** with attributes Brand, Model(year) and mileage. Both structs will implement a common **interface called Vehicle**, which defines method for calc_mileage. **Read** Total Distance Travelled and Total Fuel Consumed and print mileage for both vehicles.
- (CO3) [Comprehension]
8. Make use of container/list package and insert following in same order.
8, 7,6, 5, 4, 3, 2,1,0,snake,bird,cat.
Apply InsertAfter(), PushFront(), PushBack() functions. Finally print the list.
- (CO4) [Comprehension]
9. Make use of GO routines and write code to run factorial and palindrome routines concurrently, (write input and output)
- (CO4) [Comprehension]

PART C

ANSWER ALL THE QUESTIONS

2 X 15M = 30M

10. Apply GO map concepts and read 30 students name and CGPA , where name is key and CGPA is value.
Iterate this student map using for range loop and print names of student who scored highest CGPA, lowest CGPA and also print names of all students who scored CGPA above 7.
(Write sample input and output)
- (CO2) [Application]
11. Apply GO **methods** in a scenario of ticket booking for a movie show. The user should give inputs like class (first class, second class and economy) and number of people. The program should request amount to be paid. If the user paid amount(assume) allocate seat numbers. If the seat for particular class over display message "No seat in this class", give option to book another class. If all seats sold, then before taking payment it should show message "housefull". Make **use of methods** for checking seat availability, bill payment, seat allotment and **pointers for parameter passing**.
(Write sample input and output)
- (CO3) [Application]