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BISTUPUR, JAMSHEDPUR
SECOND ASSESSMENT 1ST ROUND TEST 2017-18
COMPUTER SCIENCE

STD.12 A&B

F.M. 20

- Q1.a) Differentiate between extends and implements keyword. [2]
b) Define the following : [2]
i) abstract class ii) interface

- Q2. For the selection in national level racing competition the selection committee has decided to select few candidates who satisfies at least one of the following conditions:
- The candidate is a female not below 18 years of age and has won prize at the state level
 - The candidate is a male of 18 years of age or above and has won the prize at the National level.
 - The candidate is a male who is the member of racing organization and also National level player.
 - The candidate is a female who has qualified in inter-school racing competition of a state.

The inputs are:

A : The candidate is a male.(1 indicates male and 0 indicates female)

B : The candidate is 18 years and above . (1 indicates Yes And 0 indicates No)

C : The candidate belongs to racing organization or/and player at National level.
(1 indicates Yes And 0 indicates No)

D : The candidate is an inter-school state champion or state prize winner. (1 indicates Yes And 0 indicates No).

Output :

S : Denotes that the issue will be resolved. (1 indicates Yes And 0 indicates No).

- (a) Design a truth table and write the SOP expression for **S(A,B,C,D)**. [4]
(b) Reduce the SOP expression using Karnaugh's map.

Draw the logic gate diagram for the reduced SOP expression for the reduced expression using AND & OR gates. Show the output at each stage. You may use gates with two or more inputs. Assume that variables and their complements are available as inputs. [4]

- Q3. A class Combine contains an array of maximum 100 integers. Some of the members of the class are given below :

Class name : Combine

Data members/instance variables :

com[] : integer array.

len : length of the array.

Member Functions / methods :

Combine (int) : parameterized constructor to assign the length of the array.

void inpar() :to accept array elements.

void mix(Combine A, Combine B): stores the common elements of parameterized object arrays in the current object array.

void arrange () : sort the array elements in ascending order using any sorting technique.

void display () : display the array elements.

Specify the above class by giving details of constructor and functions. Write a main program to generate the required output. [8]
