USN | | | | | | | | | | 18CHE12/22

First/Second Semester B.E. Degree Examination, Dec.2019/Jan.2020
Engineering Chemistry

Time: 3 hrs.   Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1   a. Define Free Energy. Derive Nernst equation for single electrode potential. **(07 Marks)**
    b. What are Reference Electrodes? Describe the construction and working of Calomel electrode. **(06 Marks)**
    c. Explain the construction and working of Ni – Metal Hydride battery. Give the reaction during charging and discharging mode. Give any two applications. **(07 Marks)**

OR

2   a. Describe the construction and working of Lithium – ion battery. Give its applications. **(07 Marks)**
    b. Write a note on Primary , Secondary and Reserve batteries. **(06 Marks)**
    c. What are Concentration Cells? EMF of the cell $Ag/AgNO_3(C_1)$ // $AgNO_3$ $(C_2 = 0.2m)$ / Ag is 0.8V. Calculate C_1 of the cell. **(07 Marks)**

Module-2

3   a. What is Corrosion? Explain the Electrochemical theory of corrosion by taking iron as an example. **(07 Marks)**
    b. Explain i) Differential Metal Corrosion ii) Pitting Corrosion. **(07 Marks)**
    c. What do you mean by metal finishing? Mention any five technological importances. **(06 Marks)**

OR

4   a. Define and explain any two terms :
        i) Polarisation   ii) Decomposition potential   iii) Over voltage. **(06 Marks)**
    b. What is Electroless Plating? Explain the Electroless plating of copper. **(07 Marks)**
    c. Explain the process of Galvanization. **(07 Marks)**

Module-3

5   a. What is Knocking? Explain the mechanism. **(07 Marks)**
    b. On burning 0.96 grams of solid fuel in bomb calorimeter the temperature of 3500 grams of water increased by 2.7^0C water equivalent of calorimeter and latent heat of steam are 385 grams and 587 cal/gram respectively. If the fuel contains 5% H_2 , calculate its gross and net calorific value. Specific heat of water = 4.187 kJ/kg K. **(06 Marks)**
    c. What are Fuel Cells? Describe the construction and working of $CH_3OH - O_2$ fuel cell. **(07 Marks)**

OR

6   a. What are Solar Cells? Explain the construction and working of a typical P.V. Cell. **(07 Marks)**
    b. Explain the production of solar grade Si by Union Carbide Process. **(07 Marks)**
    c. Write a note on : i) Power alcohol   ii) Unleaded petrol. **(06 Marks)**

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Module-4

7   a.   What are the main sources, effects and control of lead pollution?   (07 Marks)

     b.   Mention the various causes, effects and disposal methods of e – waste.   (07 Marks)

     c.   50 mℓ of an industrial sewage has consumed 11.5 mℓ of 0.4N $K_2Cr_2O_7$ solution for complete oxidation. Calculate C.O.D of industrial sewage.   (06 Marks)

OR

8   a.   Explain the activated sludge treatment of sewage water.   (07 Marks)

     b.   What is Desalination? Describe the desalination of seawater by reverse Osmosis process.   (07 Marks)

     c.   Write a note on Ozone depletion.   (06 Marks)

Module-5

9   a.   Explain the theory, Instrumentation and Application of Calorimetry.   (06 Marks)

     b.   What is Potentiometric titration? Explain the principle involved in Potentiometric titration.   (07 Marks)

     c.   Write a note on Fullerene. Mention its application.   (07 Marks)

OR

10   a.   What are Nano – materials? Give their synthesis by Sol – gel techniques.   (07 Marks)

     b.   Write a note on Graphenes. Mention their applications.   (07 Marks)

     c.   Explain the theory and applications of Atomic Absorption Spectroscopy.   (06 Marks)

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First/Second Semester B.E. Degree Examination, Dec.2019/Jan.2020
Engineering Chemistry

Time: 3 hrs.   Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1   a. What are ion selective electrodes? Describe the construction of glass electrode with diagram.
        (07 Marks)
    b. Define Single Electrode Potential. Derive the Nernst equation for single electrode potential.
        (07 Marks)
    c. What are Fuel Cells? Give the differences between fuel cell and conventional cell. **(06 Marks)**

OR

2   a. Explain the following battery characteristics :
        i) Energy efficiency   ii) Cycle life   iii) Self life.   **(06 Marks)**
    b. Describe the construction and working of Zn – Air cell. Mention its applications.   **(07 Marks)**
    c. What are concentration cells? Calculate the cell potential of the following cell at 298K.
        $C_u | C_u^{2+} (0.001M) || C_u^{2+} (0.1M) | C_u$. Write the cell reactions.   **(07 Marks)**

Module-2

3   a. Explain the following factors affecting the rate of corrosion :
        i) Ratio of anodic to cathodic area   ii) pH   iii) Temperature.   **(06 Marks)**
    b. What is Tinning? Explain the process of tinning by hot dipping process.   **(07 Marks)**
    c. What is Electroless Plating? Explain electroless plating of copper with suitable reactions.
        (07 Marks)

OR

4   a. Define Corrosion. Explain Electrochemical theory of corrosion by taking iron as an example.   **(07 Marks)**
    b. What is Metal finishing? What are the technological importance of metal finishing.
        (06 Marks)
    c. Explain Electroplating of chromium for decorative and hard deposit.   **(07 Marks)**

Module-3

5   a. What is Cracking? Explain fluidized bed catalytic cracking.   **(07 Marks)**
    b. Explain the synthesis of petrol by Fishcher Tropsch process.   **(06 Marks)**
    c. What are Photovoltaic cells? Explain construction and working of a photovoltaic cell.
        (07 Marks)

OR

6   a. Define GCV and NCV. Calculate the gross and net calorific value of a sample of coal from the following data :
        Weight of coal = 0.80 g ; Weight of water = 2000 g ; Water equivalent of
        calorimeter = 500g ; Rise in temperature = 2.5^0C ; Specific heat of water = $4.187kJ/kg/^0C$
        % of hydrogen = 5% ; Latent heat of steam = 2457 kJ/kg.   **(08 Marks)**
    b. Explain Modules , Panels and Arrays of Photovoltaic cells.   **(06 Marks)**
    c. Explain purification of silicon by zone refining process.   **(06 Marks)**

Module-4

7 a. What is Polymerization? Explain addition and condensation polymerization with example.
(07 Marks)

b. Explain the synthesis and applications of the following polymers :
i) Polyurethane ii) Silicone rubber. (06 Marks)

c. What are Polymer composites? Give the synthesis and applications of Kevlar. (07 Marks)

OR

8 a. In a polymer sample, 25% of molecules have molecular mass 1000 g/mol , 35% molecules have molecular mass 2000 g/mol and remaining molecules have molecular mass 3000 g/mol. Calculate the number average and weight average molecular mass of the polymer. (06 Marks)

b. What is Glass transition temperature? Explain any THREE factors affecting the glass transition temperature. (07 Marks)

c. Explain free radical mechanism of addition polymerization of vinyl chloride. (07 Marks)

Module-5

9 a. Explain the Activated Sludge method of treatment of sewage water. (06 Marks)

b. Define BOD and COD. In a COD test 26.5 cm^3 and 15.0cm^3 of 0.05N FAS solutions were required for blank and sample titrations respectively. The volume of the test sample used was 25cm^3. Calculate the COD of the test sample. (07 Marks)

c. What are Nano materials? Describe the synthesis of nano material by Sol – gel method.
(07 Marks)

OR

10 a. What is Desalination? Explain the desalination of sea water by reverse osmosis. (06 Marks)

b. Explain synthesis of nano materials by chemical vapour condensation process. (06 Marks)

c. Write a note on the following :
i) Carbon nano tubes and ii) Fullerenes. (08 Marks)

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15CHE12/22

First/Second Semester B.E. Degree Examination, Dec.2019/Jan.2020
Engineering Chemistry

Time: 3 hrs.

Max. Marks: 80

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1 a. Derive Nernst equation for single electrode potential. **(05 Marks)**
   b. What are ion selective electrodes? Explain the determination of P^H using glass electrode. **(05 Marks)**
   c. What are fuel cells? Describe the construction and working of $CH_3OH - O_2$ fuel cell. **(06 Marks)**

OR

2 a. Calculate EMF of a concentration cell constructed by immersing two silver electrodes in siver nitrate solutions of concentration 0.1M and 100M at 298K. Write cell representation. **(05 Marks)**
   b. Describe the construction and working of Zinc – Air battery. **(05 Marks)**
   c. Explain the following battery characteristics :
      i) Cell potential/EMF   ii) Capacity   iii) Cycle life. **(06 Marks)**

Module-2

3 a. Explain electrochemical theory of corrosion of iron. **(05 Marks)**
   b. Discuss the effect of i) relative areas of anode and cathode ii) nature of corrosion product on the rate of corrosion. **(05 Marks)**
   c. What is electroless plating? Mention any four differences between electroplating and electro-less plating. **(06 Marks)**

OR

4 a. Describe differential aeration corrosion with an example. **(05 Marks)**
   b. What is Galvanization? Describe the process of Galvanization of iron sheet. **(05 Marks)**
   c. Explain the effect of the following on the nature of electro-deposit :
      i) Current density   ii) P^H iii) Temperature of electro plating bath. **(06 Marks)**

Module-3

5 a. On combustion, 0.80 g of solid fuel in a Bomb calorimeter, increased the temperature of 3.1 kg of water by 2.3°C. The water equivalent of copper calorimeter and latent heat of steam are 0.47kg and 2457kJ/kg respectively. If the fuel contains 2.5% Hydrogen. calculate the gross and net calorific value of the fuel. Given specific heat of water of 4.187kJ/kg°C. **(05 Marks)**
   b. Explain the synthesis of petrol by Fischer – Tropsch's process. **(05 Marks)**
   c. Describe the preparation of solar grade silicon by union carbide process. **(06 Marks)**

OR

6 a. Explain how calorific value of a solid fuel determined using bomb calorimeter. **(05 Marks)**
   b. What is meant by reformation of petrol? Explain any four reforming reactions. **(05 Marks)**
   c. Describe the construction and working of a photovoltaic cell. Mention the advantages.
      (06 Marks)

Module-4

7 a. Define glass transition temperature. Discuss any two paramters influencing T_g of a polymer.
      (05 Marks)
   b. Discuss the synthesis and applications of expoxy resins. **(05 Marks)**
   c. What are conducting polymers? Describe the mechanisms of conduction in polyaniline.
      (06 Marks)

OR

8 a. Illustrate free radical mechanism of addition polymerization taking vinyl choride as monomer. **(05 Marks)**
   b. Discuss the following structure – property relationships i) Tensile strength ii) Crystallinity.
      (05 Marks)
   c. Explain the preparation of : i) polymethyl – methalacrylate (PMMA) ii) Kevlar. **(06 Marks)**

Module-5

9 a. What is boiler corrosion? Discuss the boiler corrosion due to dissolved oxygen and $MgCl_2$.
      (05 Marks)
   b. Define COD and BOD. Mention any three differences. **(05 Marks)**
   c. What are nano-materials? Discuss the synthesis of nano-materials by sol-gel method.
      (06 Marks)

OR

10 a. Discuss secondary treatment of sewage using activated sludge method. **(05 Marks)**
   b. What is meant by desalination of water? Explain desalination by reverse osmosis method.
      (05 Marks)
   c. Write a note on carbon nano tubes and fullerenes. **(06 Marks)**

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USN ☐☐☐☐☐☐☐☐☐☐   **18CPS13/23**

First/Second Semester B.E. Degree Examination, Dec.2019/Jan.2020
C Programming for Problem Solving

Time: 3 hrs.   Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1   a.   How would you explain the components of a computer with the block diagram? **(08 Marks)**
    b.   Describe the types of computers. **(06 Marks)**
    c.   Convert the following mathematical expression into C equivalent statements.

      i) $m = x^4 + \sqrt{x + \dfrac{y}{k} - 4x + 6}$

      ii) $x = \dfrac{-b + \sqrt{b^2 - 4ac}}{2a}$

      iii) $Area = \pi r^2 + 2\pi rh$ **(06 Marks)**

OR

2   a.   How can you write the basic structure of a C program? Explain with examples. **(08 Marks)**
    b.   Define a token. Explain the different tokens available in C language. **(08 Marks)**
    c.   How would you explain logical operator in a C language. **(04 Marks)**

Module-2

3   a.   With examples how would describe the formatted input and formatted output statements in C language. **(08 Marks)**
    b.   How would you explain if – else statement in C language? Give the relevant example. **(06 Marks)**
    c.   Write a program in C to display the grade based on the marks as follows :

Marks	Grades
0 to 39	F
40 to 49	E
50 to 59	D
60 to 69	C
70 to 79	B
80 to 89	A
90 to 100	O

            (06 Marks)

OR

4   a.   How would you explain switch statement with an example? **(08 Marks)**
    b.   How the while loop differs from do-while loop? **(06 Marks)**
    c.   Write a program to check whether a given integer is palindrome or not? **(06 Marks)**

Module-3

5   a.   Define an array. How would you explain declaration and initialization of one dimensional array? **(06 Marks)**
    b.   Write a program in C to implement binary searching technique. **(06 Marks)**
    c.   How would you explain with examples, the string manipulation functions? **(08 Marks)**

OR

6   a. Write a program to read N integers and to arrange them in ascending order using bubble sort technique. **(06 Marks)**
     b. How would you explain the declaration and initialization of string variables? **(06 Marks)**
     c. Write a program to multiply 2 matrices, by ensuring their multiplication compatibility.
     (08 Marks)

Module-4

7   a. How would you illustrate the elements of user defined functions with examples? **(10 Marks)**
     b. Write a program in C to find the factorial of a given integer using functions. **(05 Marks)**
     c. Explain how call by value differs from call by reference while invoking a function.
     (05 Marks)

OR

8   a. How would you explain the categories of user defined functions? **(10 Marks)**
     b. Write a program in C to compute the Fibonacci series up to n terms using recursion.
     (06 Marks)
     c. List the storage class specifiers. Explain any one of them. **(04 Marks)**

Module-5

9   a. Define a structure. How would you declare and initialize structure variables? Give examples.
     (07 Marks)
     b. Define a Pointer. How the pointers are declared and initialized? **(06 Marks)**
     c. Write a C program to read details of 10 students and to print the marks of the student if his name is given as input. **(07 Marks)**

OR

10   a. Write a program in C to add two numbers using pointers. **(05 Marks)**
     b. How would you explain the categories of preprocessor directives in C? **(10 Marks)**
     c. How would you explain nested structures? **(05 Marks)**

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17PCD13/23

First/Second Semester B.E. Degree Examination, Dec.2019/Jan.2020
Programming in C and Data Structures

Time: 3 hrs.

Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1   a. What is pseudo code? Explain how pseudo code can be used to solve the problem with suitable example. **(06 Marks)**
    b. Explain the structure of 'C' program with an example. **(08 Marks)**
    c. What is type conversion? Explain the different types of conversion with example. **(06 Marks)**

OR

2   a. Explain scanf( ) function and write the guidelines to be followed to use printf( ) function. **(07 Marks)**
    b. What is an operator? Explain the logical and bitwise operators. **(07 Marks)**
    c. Define keyword, constant, identifiers with examples. **(06 Marks)**

Module-2

3   a. Explain cascaded if else and switch statement with syntax and example. **(08 Marks)**
    b. Write a 'C' program to find the roofs of quadratic equation. **(08 Marks)**
    c. Explain how break and continue statements are used in 'C' program. **(04 Marks)**

OR

4   a. Explain the different types of loops used in 'C' with syntax and example for each. **(09 Marks)**
    b. Write a 'C' program to find whether a given no is palindrome or not. **(05 Marks)**
    c. What are the nested loops? Write a 'C' program to print to multiplication table upto 'n' using nested for loops. **(06 Marks)**

Module-3

5   a. What is an Array? Explain the declaration and initialization of one dimensional array with example. **(07 Marks)**
    b. Write a 'C' program to add two matrices. **(08 Marks)**
    c. Explain Recursion with an example. **(05 Marks)**

OR

6   a. Explain any four string manipulation library functions with example. **(08 Marks)**
    b. Explain function call, function definition and function prototype with example. **(08 Marks)**
    c. What are actual parameters and format parameters? **(04 Marks)**

Module-4

7   a. What is structure? Explain with syntax and example, the concept of structure defining, declaration and initialization. **(10 Marks)**
    b. Explain array of structures and structure within structure with example. **(10 Marks)**

OR

8 a. What is a file? Explain fopen( ), fclose( ) function with example.   (10 Marks)
   b. Give two university information files "studentname.txt" and "usn.tax" that contain studentname and USN respectively. Write a 'C' program to create a new file called "output.txt" and copy the content of "studentname.txt" and usn.txt" into "output.txt" file and then display on the screen.   (10 Marks)

Module-5

9 a. What is a pointer? Explain how the pointer variable is declared and initialized.   (06 Marks)
   b. What is preprocessor directive? Explain #define, #include preprocessor directive. (06 Marks)
   c. What is stack? Explain the operations performed on stack.   (08 Marks)

OR

10 a. What is dynamic memory allocation? Write and explain the different dynamic memory allocation function in 'C'.   (08 Marks)
    b. What is queue? Explain the types of queues.   (06 Marks)
    c. What is a linked list? Distinguish between a singly linked list and doubly linked list.
                                                                                      (06 Marks)

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USN [| | | | | | | |]   **15PCD13/23**

First/Second Semester B.E. Degree Examination, Dec.2019/Jan.2020
Programming in C and Data Structures

Time: 3 hrs.   Max. Marks: 80

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1   a.   What is Pseudocode and its use? Write a Pseudocode for adding four (4) numbers. **(04 Marks)**
    b.   Explain the structure of a 'C' program with an example syntax. **(08 Marks)**
    c.   Write a 'C' program to SWAP the values of two (2) variables without using third variable. **(04 Marks)**

OR

2   a.   What is an identifier? Give any five rules that are the be followed, while declaring a variable. Give example for valid and invalid. **(05 Marks)**
    b.   What is an operator? Explain different types of operators in 'C'. **(07 Marks)**
    c.   If a = 2, b = 8, c = 4, d = 10, what is the value of each of the following expression.
         i) a + b/c * d – c/a   ii) (b/a)% c   iii) a ++ +b – – + d ++   iv) ++ a + b – – + ++d. **(04 Marks)**

Module-2

3   a.   Explain switch statement with syntax. Write a program to simulate simple calculator that performs arithmetic operations using switch statement. **(08 Marks)**
    b.   List four differences between while loop and do-while loop along with, syntax and example. **(08 Marks)**

OR

4   a.   What are the different types of conditional decision making statements? Explain each with an example. **(09 Marks)**
    b.   Write a C program to find the roots of a quadratic equation (check for valid input values) **(07 Marks)**

Module-3

5   a.   What is an array? How an array is declared and initialize, explain. **(06 Marks)**
    b.   Explain any four string manipulation functions along with example each. **(04 Marks)**
    c.   Develop 'C' function ISPRIME (num) that accepts an integer argument and return 1 if argument is prime, a θ otherwise. Write a C program that invokes this function to generate prime no's between the given ranges. **(06 Marks)**

OR

6   a.   What is a function? Briefly explain parameters passing mechanism of functions. **(05 Marks)**
    b.   Write a C program to read a sentence and print the frequencies of each VOWEL total count of CONSONENTS. **(06 Marks)**
    c.   Write a recursion program to compute factorial of a given number 'n'. **(05 Marks)**

Module-4

7 a. What is structure? Explain declaration of structure with an example. **(05 Marks)**

b. Write a program to input the following detail of 'N' students using structures
RollNo, Name, Marks, Grade
Print the names of the students with marks ≥ 70. **(07 Marks)**

c. What is a file, explain fopen( ) and fclose( ) functions. **(04 Marks)**

OR

8 a. Explain the following file operations along with syntax and example.
i) fopen( )   ii) fscan( )   iii) fprinf ( )   iv) fgets( ). **(08 Marks)**

b. Given 2 university information file studentname.txt and usn.txt that contains students name
and USN respectively. Write a program to create a new file called "output.txt" and copy the
contents of file "studentname.txt and usn.txt into output file in the sequence shown below:

Student Name	USN
Name – 1	USN – 1
Name – 2	USN – 2
.	.
.	.
.	.
.	.

(08 Marks)

Module-5

9 a. Define pointer? Explain with an example, the declaration and initialization of pointer
variable. **(04 Marks)**

b. Explain the following 'C' functions
i) malloc( )   ii) calloc( )   iii) realloc( ) **(06 Marks)**

c. Write a C program to read two numbers and develop a function to swap these numbers using
pointers. **(06 Marks)**

OR

10 a. Explain any five preprocessor directives in C. **(05 Marks)**

b. What are primitive and non-primitive data types. **(04 Marks)**

c. What is stack? Explain stack operations with examples program. **(07 Marks)**

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First/Second Semester B.E. Degree Examination, Dec.2019/Jan.2020
Programming in C and Data Structures

Time: 3 hrs.   Max. Marks:100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1   a. What are data types? Mention the different data types supported by C language, giving an example to each. **(05 Marks)**

   b. Write a C program which takes as input p, t, r, compute the simple interest and display the result. **(05 Marks)**

   c. What is an operator? List and explain various types of operators. **(10 Marks)**

OR

2   a. What is a token? What are different types of tokens available in C language? Explain. **(08 Marks)**

   b. Write C expressions corresponding to the following (Assume all quantities are of same type)

   i) $A = \dfrac{5x + 3y}{a + b}$

   ii) $B = \sqrt{s(s - a)(s - b)(s - c)}$

   iii) $C = e^{|x + y - 10|}$

   iv) $D = x^{25} + y^{35}$

   v) $X = \dfrac{e^{\sqrt{x}} + e^{\sqrt{y}}}{x \sin \sqrt{y}}$

   vi) $X = \dfrac{-b + \sqrt{b^2 - 4ac}}{2a}$.   **(06 Marks)**

   c. What is the value of 'x' in following code segments? Justify your answers :

   i) int a, b ;   ii) int a, b ;
      float x ;   float x ;
      a = 4 ;   a = 4 ;
      b = 5 ;   b = 5 ;
      x = b/a ;   x = (float) b/a ;   **(06 Marks)**

Module-2

3   a. What are different types of conditional decision making statements? Explain each with examples. **(10 Marks)**

   b. Write a C program to simulate simple calculator that performs arithmetic operations using switch statement. Error message should be displayed, if any attempt is made to divide by zero. **(10 Marks)**

OR

4 a. Explain cascade if-else and nested if-else statements.   (06 Marks)
   b. Write a C program to implement simple calculator using operators +, −, * and /. Also handle divide by zero error. Use switch statement.   (10 Marks)
   c. What is dangling else problem? Explain how to handle this in C programming.   (04 Marks)

Module-3

5 a. Define array? How two dimension arrays are declared and initialized?   (06 Marks)
   b. Write a C program to generate Fibonacci numbers using arrays.   (06 Marks)
   c. Explain following string functions :
      i) strlen   ii) strcpy   iii) strcmp   iv) strcat.   (08 Marks)

OR

6 a. Explain various ways of passing parameters to the functions.   (06 Marks)
   b. Write a C program to find factorial of an integer using recursive function.   (08 Marks)
   c. Write a C program to find length of a string without using strlcn( ) function.   (06 Marks)

Module-4

7 a. What is a structure data type? Give the general form of a structure declaration.   (05 Marks)
   b. Explain the syntax of fprintf and fscanf functions in 'C'.   (05 Marks)
   c. Using the structure data type, write a program in 'C' to read a student record from the keyboard and store it in a file called student·dot.   (10 Marks)

OR

8 a. Explain the differences between arrays and structures.   (05 Marks)
   b. What is a file? Explain fopen( ) and fclose( ) functions in 'C' language.   (06 Marks)
   c. Write a program in 'C' using structure to read USN, name and marks in 3 subjects for each student and store it in a file called studmarks·dat.   (09 Marks)

Module-5

9 a. Define point variable. Explain with an example, the declaration and initialization of pointer variable.   (06 Marks)
   b. Explain following C functions along with syntax and example to each :
      i)   malloc( )
      ii) calloc( )
      iii) realloc( )
      iv) free( ).   (08 Marks)
   c. Develop a C program to read two numbers and function to swap these numbers using pointers.   (06 Marks)

OR

10 a. Explain with example # define directive.   (04 Marks)
   b. What is a stack? What are the operations we can carry out on a stack?   (08 Marks)
   c. Write a program in 'C' to create a simple linked list.   (08 Marks)

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USN [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]　　　　　　　　　18ELN14/24

First/Second Semester B.E. Degree Examination, Dec.2019/Jan.2020
Basic Electronics

Time: 3 hrs.　　　　　　　　　　　　　　　　　　　　　Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1　a.　Explain the working of PN junction diode under forward and reverse biased conditions.
　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　(06 Marks)
　　b.　Explain the working of Photodiode.　　　　　　　　　(05 Marks)
　　c.　Explain with neat circuit diagram and waveforms, the working of full wave bridge rectifier. Show that the efficiency of full wave bridge rectifier is 81%.　　(09 Marks)

OR

2　a.　Explain the operation of Half wave rectifier with capacitor filter with neat circuit diagram and waveforms.　　　　　　　　　　　　　　　　　　(06 Marks)
　　b.　A full wave rectifier uses 2 diodes having internal resistance of 10 Ω each. The transformer RMS secondary voltage from center to each end is 200V. Find I_m , I_{dc} , I_{rms} and V_{dc} if the load is 800 Ω.　　　　　　　　　　　　　　　　　　　(06 Marks)
　　c.　Explain how zener diode helps in voltage regulation with neat circuit diagram. Give detail mathematical analysis.　　　　　　　　　　　　　　　(08 Marks)

Module-2

3　a.　Explain the construction, working and characteristics of n-channel JFET.　(09 Marks)
　　b.　With a neat circuit diagram, explain the working of CMOS Inverter.　(06 Marks)
　　c.　For a n-channel JFET if I_{DSS} = 9 mA and V_p = –6V. Calculate I_D at V_{gs} = – 4V and V_{gs} at I_D = 3 mA.　　　　　　　　　　　　　　　　　　(05 Marks)

OR

4　a.　Explain the construction, working and characteristics of enhancement type MOSFET.
　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　(09 Marks)
　　b.　Explain the working of Silicon Controlled Rectifier [SCR] using two transistor model.
　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　(06 Marks)
　　c.　For an EMOSFET, determine the value of I_D if $I_{D(on)}$ = 4 mA. $V_{gs(on)}$= 6V. V_T = 4V and V_{gs} = 8V.　　　　　　　　　　　　　　　　　　　(05 Marks)

Module-3

5　a.　What is an OP-AMP? List the characteristics of an ideal OP-AMP.　(06 Marks)
　　b.　Explain the operation of an OP-AMP as inverting amplifier with neat diagram and waveforms.　　　　　　　　　　　　　　　　　　　　(06 Marks)
　　c.　Explain how OP-AMP can be used as (i) Integrator (ii) Voltage follower.　(08 Marks)

OR

6　a.　Explain the different input modes of an OP-AMP.　　　(06 Marks)
　　b.　Design an adder circuit using OP-AMP to obtain an output voltage, V_o= –$[2V_1 + 3V_2+5V_3]$. Assume R_f = 10 kΩ.　　　　　　　　　　　　　　　　(06 Marks)

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c. Explain the following terms with respect to OP-AMP:
   (i) CMRR   (ii) Slew rate   (iii) Input bias current   (iv) Supply Voltage Rejection ratio.
                                                                   (08 Marks)

Module-4

7   a. With a neat circuit diagram, explain how transistor is used as an amplifier. Derive an equation for A_v.   (08 Marks)

    b. Explain RC phase shift oscillator with circuit diagram and necessary equations.   (08 Marks)

    c. Explain the voltage series feedback circuit and derive an equation for voltage gain, A_v , with feedback.   (04 Marks)

OR

8   a. With a neat circuit diagram, explain the working of Wein-bridge oscillator.   (08 Marks)

    b. Explain the operation of IC555 as an Astable oscillator with neat circuit diagram and necessary equations.   (08 Marks)

    c. The Transistor in CE configuration is shown in Fig.Q8(c) with RC = 1 kΩ and β_{DC} = 125. Determine
   (i) V_{CE} at V_{in} = 0 V.
   (ii) $I_{B(min)}$ to saturate the collector current
   (iii) $R_{B(max)}$ when V_{in} = 8 V
   $V_{CE(sat)}$ can be neglected.
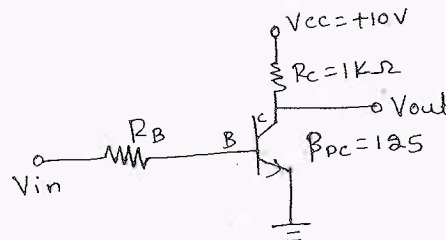
Fig.Q8(c)   (04 Marks)

Module-5

9   a. Design Full adder circuit and implement it using basic gates.   (08 Marks)

    b. Find (i) $(1101\ 0111\ 0110\ 1010)_2 = (\ ?\ )_{16}$
   (ii) $(EB986)_{16} = (\ ?\ )_2$
   (iii) $(925.75)_{10} = (\ ?\ )_8$ (06 Marks)

    c. Explain the basic elements of communication system with block diagram.   (06 Marks)

OR

10   a. State and prove De-Morgan's theorem.   (06 Marks)

    b. With a block diagram, explain the working of a 3-bit ripple counter.   (06 Marks)

    c. What is a Flip-flop? Explain the operation of master-slave JK flip-flop.   (08 Marks)

* * * * *

2 of 2

USN ☐☐☐☐☐☐☐☐☐☐   17ELN15/25

First/Second Semester B.E. Degree Examination, Dec.2019/Jan.2020
Basic Electronics

Time: 3 hrs.   Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1   a.   Define the following diode parameters :
        i) Static resistance   ii) Dynamic resistance   iii) Reverse saturation current
        iv) Peak Inverse voltage   v) Knee voltage.   **(05 Marks)**
    b.   With circuit diagram and neat sketch, explain the common base input and output characteristics for pnp transistor.   **(08 Marks)**
    c.   A full wave rectifier with a transformer secondary voltage 60V – 0 – 60V. supplies a load resistance $R_L = 2k\Omega$. The diode forward resistance R_f is 10Ω. Determine
        i) maximum value of current in conducting diodes   ii) dc value of current through R_L
        iii) output dc voltage and   iv) PIV across each diode.   **(07 Marks)**

OR

2   a.   With a neat circuit diagram and waveforms , explain the working of Bridge rectifier.
                                                                                          (08 Marks)
    b.   A 9V reference source is to use a series connected zener diode and a resistor connected to 30V supply. If zener diode with $V_Z = 9V$, $I_{ZT} = 20mA$ is selected , then determine the value of series resistance and calculate the circuit current when the supply voltage drops to 27V.
                                                                                          (05 Marks)
    c.   Define Common – base current gain and Common – emitter current gain of transistor. Derive the relationship between them. If a transistor has $I_C = 3mA$, $I_E = 3.03mA$. then find β of transistor.   **(07 Marks)**

Module-2

3   a.   With circuit diagram and necessary equations, explain the base bias circuit.   **(05 Marks)**
    b.   For the voltage divider bias circuit using silicon transistor, $V_{cc} = 18V$, $R_1 = 33K\Omega$, $R_2 = 12K\Omega$, $R_c = 1.2K\Omega$ and $R_E = 1K\Omega$. Using approximate analysis. determine V_E , V_C , V_B , I_C and V_{CE}.   **(08 Marks)**
    c.   With a neat circuit diagram, derive an equation for output voltage of non inverting amplifier using op - amp.   **(07 Marks)**

OR

4   a.   For the circuit shown in fig.Q4(a), find the Q – point values and draw the dc load line. The transistor has $V_{BE} = 0.7V$ and β = 50.   **(07 Marks)**
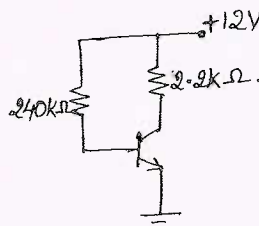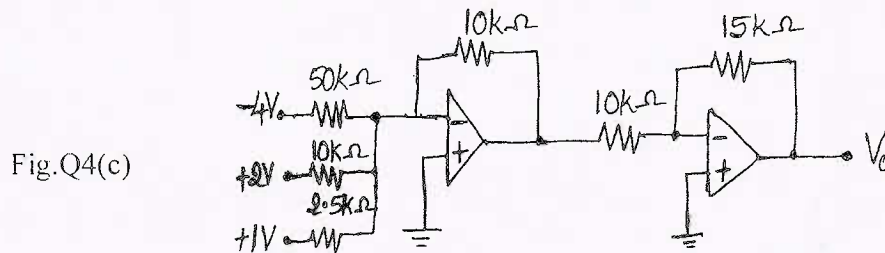

Fig.Q4(a)

b. Mention the characteristics of ideal op – amp. (05 Marks)

c. Calculate the output voltage for the circuit shown in fig.Q4(c). (08 Marks)

Fig.Q4(c)

Module-3

5 a. Convert the following : i) $(283.728)_{10} = (?)_8$. ii) $(AB.5E)_{16} = (?)_8$. (06 Marks)

   b. Simplify $Y = \overline{A} BC + A \overline{B} C + ABC$ and then realize using
      i) basic gates only   ii) NOR gates only. (08 Marks)

   c. Explain half adder circuit and realize using basic gates. (06 Marks)

OR

6 a. Subtract i) $(1011)_2 - (110)_2$ using 1's complement
             ii) $(1001)_2 - (1110)_2$ using 2's complement. (06 Marks)

   b. Draw the symbol and write the truth table of the exclusive – NOR gate and EX – OR gate.
      Realize the same using basic gates also. (06 Marks)

   c. Simplify the following Bodean expressions :
      i) $Y = A + \overline{A} B + ABC + A \overline{C}$ ii) $Y = (A + \overline{B} + \overline{C})(A + \overline{B} + C)$.
      and realize using basic gates. (08 Marks)

Module-4

7 a. What is flipflop? Explain the operation of clocked RS flip flop. (06 Marks)

   b. Explain the operation of NOR gate latch. (06 Marks)

   c. With a neat block diagram, describe 8051 microcontroller. (08 Marks)

OR

8 a. Explain the operation of NAND gate latch. (05 Marks)

   b. List the salient features of 8051 micro controller. (07 Marks)

   c. Interface stepper motor to 8051 microcontroller with a neat block diagram. Explain its working principle, full step and half step sequence. (08 Marks)

Module-5

9 a. Explain the block diagram of communication system. (06 Marks)

   b. The total power content of an AM wave is 2.64KW at a modulation index of 80%.
      Determine the power content of i) carrier   ii) each sideband. (04 Marks)

   c. Write a note on i) thermistor   ii) photo electric transducer. (10 Marks)

OR

10 a. Give a comparison of AM and FM. (06 Marks)

   b. With a neat circuit diagram, explain the demodulation of AM signal. (06 Marks)

   c. Give the classification of transducers. Also mention the desirable properties of a good transducer. (08 Marks)

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2 of 2

USN | | | | | | | | | |

15ELN15/25

First/Second Semester B.E. Degree Examination, Dec.2019/Jan.2020
Basic Electronics

Time: 3 hrs.

Max. Marks: 80

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1 a. What is Rectifier? Explain the operation of full wave rectifier, with neat circuit and waveform. **(06 Marks)**

   b. Explain the operation of npn transistor. **(04 Marks)**

   c. A half wave rectifier circuit is supplied from secondary transform voltage of 108.423V to a resistive load of 10KΩ. The diode forward resistance is 10Ω. Calculate the maximum , average , RMS value of current , DC output voltage , efficiency of transformer. **(06 Marks)**

OR

2 a. Explain the input and output characteristics of npn transistor in Common Base Mode. **(06 Marks)**

   b. Draw the V- I, characteristics of Si and G_e diode. **(04 Marks)**

   c. Establish the relationship between α and β. Also calculate β, α and I_E of the transistor, when $I_B = 100\mu A$ and $I_C = 2mA$. Find new value of B when I_B changes by +25 μA and I_C by 0.6mA. **(06 Marks)**

Module-2

3 a. Define the following and derive the expression for its output voltage
   i) Differentiator   ii) Integrator. **(06 Marks)**

   b. List the ideal characteristics of Op - amp. **(04 Marks)**

   c. Calculate the minimum and maximum values of I_C and V_{CE} for the voltage divider bias circuit when $h_{fc(max)} = 60$ and $h_{fc(min)} = 50$. For circuit $V_{CC} = 12V$, $R_1 = 10K$, $R_2 = 2K$, $R_E = 470\Omega$ and $R_C = 2K$. Assume Silicon transistor. **(06 Marks)**

OR

4 a. For the circuit diagram shown in fig. Q4(a), Si transistor with β = 50 is used. Draw dc load line and determine the operating point. **(08 Marks)**
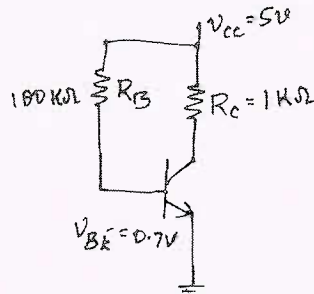
Fig.Q4(a)

   b. Draw inverting bumming amplifier circuit and obtain an expression for the output voltage. **(06 Marks)**

   c. Find the gain and output voltage for a non – inverting amplifier using Op – amp when input voltage is i) 0.5V   ii) -3V. **(02 Marks)**

Module-3

5 a. State and prove De Morgan's Theorem for 3-variables.   (04 Marks)

    b. Realize the following expression using only NAND gates

        $f = (A + \overline{B} + C)(\overline{A} + B + C)$.   (04 Marks)

    c. Explain full adder and implement full adder using two half adder and an OR gate. (08 Marks)

OR

6 a. Perform Binary subtraction using 1's and 2's complement method for the following :

       i) $15 - 13$ ii) $28 - 19$.   (08 Marks)

    b. Convert the following : i) $(12.125)_{10} = (?)_2$ ii) $(10AB)_{16} = (?)_2$

       iii) $(101010111100)_2 = (?)_{16}$ iv) $(57.6)_8 = (?)_2$.   (04 Marks)

    c. Realize OR and AND gates using only NAND gates and using only NOR gates. (04 Marks)

Module-4

7 a. Explain NOR gate latch.   (04 Marks)

    b. With neat block diagram, explain the architecture of micro controller. (08 Marks)

    c. Explain the working of clocked RS flip flop.   (04 Marks)

OR

8 a. List the difference between Microcontroller and Microprocessor. (04 Marks)

    b. With neat block diagram, explain the interfacing of stepper motor to 8051 microcontroller.

                                 (08 Marks)

    c. Explain NAND gate latch.   (04 Marks)

Module-5

9 a. Explain the need for modulation.   (04 Marks)

    b. An audio frequency signal $10 \sin 2\pi\, 500t$ is used to amplitude modulate a carrier of $50 \sin 2\pi\, 10^5$. Calculate i) Modulation index   ii) Side band frequencies

       iii) Amplitude of each side band   iv) Bandwidth required

       v) Total power delivered to the load 600Ω vi) Transmission efficiency. (06 Marks)

    c. Give the comparison between FM and AM.   (06 Marks)

OR

10 a. Explain the working of Envelope detector.   (04 Marks)

    b. Define Modulation index in terms of E_{max} and E_{min}. (06 Marks)

    c. Write short note on :

       i) Resistive transducer   ii) Peltier effect   iii) Seebeck effect. (06 Marks)

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USN ☐☐☐☐☐☐☐☐☐☐   14ELN15/25

First/Second Semester B.E. Degree Examination, Dec.2019/Jan.2020
Basic Electronics

Time: 3 hrs.   Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module - 1

1   a. Draw and explain zener voltage regulator with and without load. (06 Marks)
    b. With a neat circuit diagram and input output waveforms. Explain the working of a center tapped full wave rectifier and determine average load voltage. (08 Marks)
    c. What is a rectifier? Compare bridge rectifier with full wave rectifier. (06 Marks)

2   a. In a fullwave rectifier, the input is from 30-0-30V transformer the load and diode forward resistances are 100Ω and 10Ω respectively. Calculate the average voltage, rectification efficiency (η) and percentage regulation. (07 Marks)
    b. Draw the CE circuit and sketch the output characteristics. Also indicate the different regions on the characteristics curve. (08 Marks)
    c. Draw the circuit diagram and explain the working of a half wave rectifier. (05 Marks)

Module - 2

3   a. Explain the operation of a voltage divider bias with suitable circuit diagram. (07 Marks)
    b. Mention 4 ideal characteristics of an opamp. (04 Marks)
    c. With a neat circuit diagram, explain opamp as an inverting amplifier. (05 Marks)
    d. Define the following: i) CMRR   ii) Slewrate. (04 Marks)

4   a. Mention five applications of opamp. (05 Marks)
    b. Find the output of the op-amp circuit shown below (05 Marks)
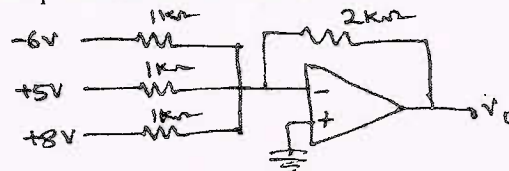
Fig.Q.4(b)

    c. Derive the application of opamp as a voltage follower. (05 Marks)
    d. Write the opamp symbol and label its parts. (05 Marks)

Module - 3

5   a. State Demorgan's theorem for 2 variables and prove it by perfect induction method. (06 Marks)
    b. Design an Halfadder using nand gates and also write its truth table. (06 Marks)
    c. Realize basic gates using nand gates. (06 Marks)
    d. Explain the construction of not gate using transistor and also write its truth table. (02 Marks)

6   a.   Define 1's and 2's complement binary numbers with suitable example.   (04 Marks)
     b.   Perform the binary addition of +29 and +19.   (04 Marks)
     c.   Perform the following conversion:
        i) $(ABFE)_{16} = (\quad)_2 = (\quad)_{10}$
        ii) $(10AB)_{16} = (\quad)_{10}$ (06 Marks)
     d.   Perform subtraction using 2's complement method:
        i) $28 - 19$
        ii)   Multiply 11×13 in binary number system.   (06 Marks)

Module - 4

7   a.   Explain the working of NAND gate RSFF with suitable logic diagram.   (05 Marks)
     b.   Explain the pinout and signal of 8051 microcontroller.   (08 Marks)
     c.   What thermister? Mention 5 passive electric transducers.   (07 Marks)

8   a.   Explain the architecture of 8085 microprocessor with suitable block diagram.   (08 Marks)
     b.   Explain see beck effect and peltier effect with suitable example.   (04 Marks)
     c.   Mention any 4 active electric transducers.   (04 Marks)
     d.   Explain piezo electric transducers.   (04 Marks)

Module - 5

9   a.   Analyze the amplitude modulation and get an equation by derivation as sum of LSB and USB in addition to carrier as modulated signal ie.

$$e(t) = E_c \sin w_c t + \frac{1}{2}mE_c \sin(w_c + w_m)t - \frac{1}{2}m E_c \sin(w_c - w_m)t$$ (08 Marks)

     b.   Compare the characteristics between amplitude modulation and frequency modulation.
                                                        (04 Marks)
     c.   Explain the block diagram of optical fibre communication.   (08 Marks)

10   a.   Explain elements of common system with the help of a block diagram.   (07 Marks)
     b.   What is demodulation (of AM)? Explain.   (05 Marks)
     c.   Explain the block diagram of cellular mobile.   (05 Marks)
     d.   What are the 3 types of ISDN channels?   (03 Marks)

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CBCS SCHEME

USN [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

First/Second Semester B.E Degree Examination, Dec.2019/Jan. 2020
Environmental Studies
(COMMON TO ALL BRANCHES)

Time: 2 hrs.]   [Max. Marks: 30

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the **Thirty** questions, each question carries one mark.

2. Use only **Black ball point pen** for writing / darkening the circles.

3. For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.

4. Darkening two circles for the same question makes the answer invalid.

5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.

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1. The science that deals with the relationship of various organisms with their environment is known as
   a) Economics   b) Geology   c) Ecology   d) Anthropology

2. A simple detritus food chain starts with
   a) Green plant   b) Wastes of organisms and dead organisms
   c) Both of these   d) None of these

3. Word environment is derived from
   a) English   b) German   c) French   d) Italy

4. Housing has become inaccessible to the poor due to
   a) Increased population   b) Non – availability of load
   c) High cost   d) None of the above

5. Which of eh following is major environmental issues in mining activities?
   a) Air pollution and dust   b) Water pollution
   c) Soil degradation   d) All the above

6. The important goal of a EIA is to
   a) Increase pollution level   b) Resource conservation
   c) Stop development activities   d) Deforestation

- A1 -

7. Sustainability requires
   a) Conservations of resources
   b) Minimizing depletion of non – renewable sources
   c) using sustainable practices for managing renewable resources
   d) All the above

8. Major source of Fluoride available in
   a) River water   b) Ground water   c) Food products   d) Both a and c

9. Excess of Nitrate in drinking water causes
   a) Gastro enteritis   b) Minamata   c) Blue Baby syndrome   d) None of these

10. India has the world's largest shore of
    a) Manganese   b) Mica   c) Copper   d) Diamond

11. Which is considered as energy source of future
    a) Wind   b) Hydrogen   c) Ocean   d) None of these

12. Bhopal Gas Tragedy happened in the year
    a) Dec. 1984   b) Dec. 1983   c) Dec. 1994   d) Dec.1987

13. Good example of renewable energy resource is
    a) Hydropower   b) Coal   c) Oil   d) All the above

14. The basic element in fossil fuels is
    a) Sulphur   b) Phosphorus   c) Carbon   d) Oxygen

15. The maximum average permissible noise levels during day time hours as per Environment Protection Act in India is
    a) 30dB   b) 45dB   c) 50dB   d) 75dB

16. Minamata disease is caused by
    a) Lead   b) Mercury   c) Cadmium   d) Arsenic

17. World 'Ozone day' is being celebrated on ever year.
    a) June 5th   b) Oct 15th   c) Sept 5th   d) Sept 16th

18. The country which has the largest number of child laborer in the world is
    a) India   b) Bangladesh   c) China   d) Pakistan

19. EPA means
    a) Environmental Prevention act   b) Environmental Pollution Act
    c) Environmental Protection act   d) Environmental Protection Agency

20. Problem of solid waste disposal can be reduced through
    a) Recycling   b) Less Pollution   c) More timber   d) Population control

- A2 -

21. Remote sensing includes gathering of
    a) Images   b) Changes   c) Movements   d) Sounds

22. Important sources of land pollution are
    a) Industrial wastes   b) Agricultural wastes   c) Both a and b   d) None of these

23. How many Indian states have so far setup state Human rights commissions
    a) 12   b) 16   c) 19   d) 28

24. Geothermal energy is a
    a) Wind Energy   b) Heat Energy   c) Solar Energy   d) Current Energy

25. First satellite of NASA was
    a) Sputnik 2   b) Explores 1   c) Sputnik 1   d) Terra 1

26. Biomedical waste may be disposed off by
    a) Incineration   b) Autoclaving and land filling
    c) Both a and b   d) None of these

27. Which atmospheric layer is closest to the Earth's surface
    a) Mesosphere   b) Troposphere   c) Stratosphere   d) Thermosphere

28. Environment protection is a fundamental duty of the citizen of India under the
    a) Article 51A   b) 48A   c) 47   d) 21

29. Sulabh biogas plants are based on the use of
    a) Human excreta   b) Cattle dung   c) Agriculture waste   d) None of these

30. Environmental protection is the responsibility of
    a) Government of India   b) NGO's
    c) Individuals   d) All.

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USN ☐☐☐☐☐☐☐☐☐☐ | **15CIV18/28**

First/Second Semester B.E Degree Examination, Dec.2019/Jan.2020
Environmental Studies
(COMMON TO ALL BRANCHES)

Time: 2 hrs.]   [Max. Marks: 40

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the **forty** questions, each question carries **ONE mark**.

2. Use only **Black ball point pen** for writing / darkening the circles.

3. For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.

4. Darkening two circles for the same question makes the answer invalid.

5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.

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1. Which of the following conceptual spheres of the environmental is having the least storage capacity
   a) Atmosphere   b) Lithosphere   c) Hydrosphere   d) Biosphere

2. Which of the following organisms is the 'Producer' of the ocean?
   a) Phyto Plankton   b) Nekton   c) Benthos   d) Zoo Plankton

3. Which of the following is not a necessary condition for ensuring food security?
   a) Availability of food   b) Access to food
   c) Self sufficiency in the production of food within a country
   d) Must fulfill nutritional requirements.

4. World Environment day is celebrating on
   a) 5th May   b) 5th June   c) 18th July   d) 16th August

5. A food web consists of
   a) A portion of food chain   b) Producers, Consumers and Decomposers
   c) Interlocking of food chains   d) A set of similar consumers

6. Eutrification is
   a) An improved water quality status of lakes
   b) The result of accumulation of plant nutrients in water bodies
   c) A process in the carbon cycle   d) A water purification techniques

- A1 -

7. Earth's Day is celebrating on every year
   a) June 22nd b) September 22nd c) April 22nd d) June 22nd

8. EIA can be expanded as
   a) Environmental and Industrial Activities   b) Environment Impact Activities
   c) Environmental Impact Assessment   d) Environmental Internal Activities

9. As per the FAO definition the minimum percentage of deflection of tree crown cover , that can be considered as deforestation is
   a) 50 %   b) 60%   c) 70%   d) 90%

10. India has the World's largest share of which of the following :
    a) Manganese   b) Mica   c) Copper   d) Diamond

11. Major purpose of most of the dams around the world is
    a) Power generation   b) Irrigation   c) Drinking water supply   d) Flood control

12. Identify the non renewable source of energy from the following :
    a) Coal   b) Fuel cell   c) Wind power   d) Wave power

13. Methemoglobinemia is caused by the contamination of water due to ____
    a) Mercury   b) Nitrate   c) Arsenic   d) Lead

14. What is the maximum allowable concentration of fluorides in drinking water?
    a) 1.0 mg/ℓ   b) 1.25 mg/ℓ   c) 1.5 mg/ℓ   d) 1.6 mg/ℓ

15. What does BOD stand for?
    a) Biological oxygen demand   b) Basic oxygen dissolved
    c) Biological oxygen decomposition   d) Biological organic demand

16. In an ecosystem, the flow of energy is
    a) Bidirectional   b) Cyclic   c) Unidirectional   d) Multidirectional

17. An alternative eco – friendly fuel for automobiles is
    a) Petro   b) Diesel   c) CNG   d) Kerosene

18. Cauvery water dispute is between
    a) India and Pakistan   b) Punjab and Haryana
    c) Uttar Pradesh and Madhya Pradesh   d) Karnataka and Tamil Nadu

19. Both power and manure is provided by
    a) Nuclear plants   b) Thermal plants
    c) Biogas plants   d) Hydroelectric plants

20. Nitrogen fixing bacteria exists in _____ of plants
    a) Leaf   b) Roots   c) Stem   d) Flower

- A2 -

21. Chernobyl nuclear disaster occurred in the year
    a) 1984   b) 1952   c) 1986   d) 1987

22. Minamata disease is caused by
    a) Lead   b) Mercury   c) Cadmium   d) Arsenic

23. Bhopal gas tragedy occurred due to the leakage of
    a) Methyl Iso Cyanate   b) Sulphur dioxide
    c) Mustard gas   d) Methane gas

24. Nuclear fusion reaction occurs in the
    a) sun   b) stars   c) Hydrogen bomb   d) All of these

25. Conversion of nitrates into gases of nitrogen is called.
    a) Nitrification   b) Nitrogen fixing   c) Reduction   d) Denitrification

26. Definition of noise is
    a) Loud sound   b) Unwanted sound
    c) Constant sound   d) Sound of high frequency

27. Demography is the study of
    a) Animal behaviour   b) Geography   c) Rivers   d) Population growth

28. The Ozone layer depletion in the stratosphere is chiefly caused by the release of
    a) Chlorofluoro carbons   b) Methane
    c) Carbon dioxide   d) None of these

29. Important sources of land pollution are
    a) Industrial waste   b) Agricultural waste   c) Both a and b   d) None of these

30. Acid rain is caused by increase in the atmospheric concentration of
    a) Ozone and dust   b) SO_2 and NO_2 c) SO_3 and CO   d) CO_2 and CO

31. World ozone day is celebrated on
    a) September 5th b) October 15th c) September 16th d) June 5th

32. Global warming could affect
    a) Climate   b) Increase in sea level   c) Melting of glaciers   d) All of these

33. GIS can be expanded as
    a) Geographic Information system   b) Geological Information system
    c) Geographic Information Satellite   d) None of these

34. The Wild Life Protection Act in India was passed in
    a) 1978   b) 1972   c) 1986   d) 1992

- A3 -

35. Environment Protection Act was enacted in the year
    a) 1986   b) 1974   c) 1992   d) 1984

36. Environmental protection is the fundamental duties of the citizen of India under the article
    a) 51 – A(g)   b) 48 - A   c) 47   d) 21

37. The Forest Conservation Act was enacted in the year
    a) 1986   b) 1974   c) 1980   d) 1972

38. The Protocol that reduces green house gas emission is
    a) Kyoto protocol b) Montreal protocol   c) Cartagena protocol   d) Vienna protocol

39. The leader of Chipko movement is
    a) Sunderlal Bahuguna   b) Medha Parkar
    c) Vandana Shiva   d) Suresh Hebilkar

40. Environment Education is must for
    a) Children   b) Women   c) Everyone   d) Scientists

* * * * *

- A4 -

USN `2 V D 1 9 C S 0 3 7`

First Semester B.E Degree Examination, Dec.2019/Jan.2020
Technical English – I
(COMMON TO ALL BRANCHES)

Time: 3 hrs.]   [Max. Marks: 100

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the **hundred** questions, each question carries one mark.

2. Use only **Black ball point pen** for writing / darkening the circles.

3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**

4. Darkening two circles for the same question makes the answer invalid.

5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.

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1. Which of these element is not involved in the process of communication
   a) Pipe   b) Sender   c) Message   d) Channel

2. Communication refers to an exchange of
   a) Information   b) Ideas   c) Emotions   d) All of these

3. An informal flow of communication exists in the organization. It is
   a) Grapes   b) Grapevine   c) Grapewine   d) Water

4. Intrapersonal Communication implies
   a) Takes places with self   b) Takes place with others
   c) Takes place with animals   d) Takes place with mothers

5. Interpersonal Communication is also called
   a) Dyadic   b) Virtual reality
   c) Mass Communication   d) Public speaking

6. Communication is a non-stop
   a) Process   b) Programme   c) Plan   d) Paper

7. Our dress code is an example of
   a) Non Verbal   b) Verbal   c) Written   d) Spoken

8. Extra personal communication takes place with
   a) Animals   b) Dolls   c) Books   d) Plants

9. Badly coded messages confuse the receiver
   a) True   b) False   c) Never   d) We do not know

10. The building block of communication is
    a) Listening   b) Singing   c) Dancing   d) Thinking

11. Communication that moves from bottom to top is
    a) Cross wise   b) Downward   c) Upward   d) Horizontal

12. Written communication is important in an organization
    a) It has a legal status   b) It can be thrown away
    c) People do not read   d) Writing is boring

13. Which of the following is a oral communication
    a) Dictation   b) Email   c) Notice   d) Letters

14. No communication is complete without
    a) Noise   b) Feedback   c) Sleep   d) Yawn

15. The common barriers to communication in an organization is
    a) Listening barrier   b) Language   c) Cultural barrier   d) All of these

Name the parts of speech which are underlined: (Q.No.16 to Q.No.20)

16. He walked <u>around</u> the park.
    a) Noun   b) Preposition   c) Verb   d) Conjunction

17. She got a strawberry <u>ice cream</u>.
    a) Noun   b) Verb   c) Interjection   d) Adverb

18. <u>Older</u> people have less energy.
    a) Verb   b) Adjective   c) Adverb   d) Noun

19. My sister answered <u>quietly</u>.
    a) Noun   b) Conjunction   c) Verb   d) adverb

20. I like chips <u>and</u> cake.
    a) Noun   b) Conjunction   c) Adverb   d) Verb

Choose the correct option (phonetics): (Q.No.21 to Q.No.26)

21. Which of these terms refer to the study of speech process?
    a) Phonology   b) Phonetic substance
    c) Phonetics   d) Semantics

22. Which is <u>not</u> a type of phonetics?
    a) Articulatory   b) Acoustic   c) Personal   d) Auditory

23. What is the full form of IPA?
    a) Indian Phonetic Alphabet   b) International Phonetic Alphabet
    c) Indian Phonetic Agreement   d) Indian People Alphabet

24. What is the phonetic transcription of "reach"?
    a) [ra:tʃ]   b) reah   c) [ri:rʃ]   d) [rəʃ]

25. The word plastic has (plas-tic)
    a) 2 syllables with stress on one   b) 2 syllables with stress on both
    c) 2 syllables with no stress   d) 3 syllables with stress on the third

26. The syllable structure for the word "PLANT"
    a) CCVC   b) CCCC   c) CVVVV   d) VVVV

Mark the compound noun: (Q.No27 to Q.No.30)

27. A lot of old students came to the alumini meet
    a) old students   b) Lot   c) Meet   d) Came

28. Her strength is amazing. (abstract noun)
    a) Her   b) Strength   c) Was   d) Amazing

29. I need the information about the college (which is unaccountable noun)
    a) I   b) Information   c) College   d) Need

30. Most kids like a play in the Water. (Identify the noun)
    a) Unaccountable   b) Countable   c) Abstract   d) Live

Point out the underlined nouns are common, proper, collective, abstract: (Q.No.31 to Q.No.35)

31. You must speak the truth.
    a) Collective noun   b) Proper   c) Abstract   d) Common

32. He gave me a bunch of grapes.
    a) Proper   b) Common   c) Collective   d) Abstract

33. Priya is my younger sister.
    a) Proper   b) Common   c) Collective   d) Abstract

34. The Lion is the king of beasts.
    a) Proper   b) Common   c) Collective   d) Abstract

35. He owns a fleet of cars.
    a) Proper   b) Common   c) Collective   d) Abstract

Silent and non silent words. Select the missing or silent letters: (Q.No.36 to Q.No.41)

36. a _____ nife.
    a) k   b) b   c) x   d) z

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37. _____ rong.
    a) X   b) C   c) W   d) F

38. _____ sychology.
    a) p   b) b   c) t   d) k

39. I always _____ in class.
    a) lisen   b) list   c) listn   d) listen

40. The leaves fell in _____.
    a) Autumn   b) autum   c) atum   d) atom

41. Do you have a _____.
    a) doubt   b) dot   c) dout   d) dought

Find the Homophones which are right: (Q.No.42 to Q.No.46)

42. You might see a grizzly _____ in the forest.
    a) bear   b) bare   c) boot   d) boo

43. Hey, who _____ the pizza?
    a) ate   b) eight   c) eat   d) eated

44. My mother says, I must not _____ my brothers.
    a) tease   b) teas   c) tees   d) taste

45. _____ is my favourite colour.
    a) blue   b) blew   c) blu   d) blow

46. He feels a little _____ after his illness.
    a) weak   b) week   c) wak   d) wake

Choose the right articles: (Q.No.47 to Q.No.51)

47. Sarala lives in _____ one bed room house.
    a) an   b) a   c) the   d) no article

48. The test result will be available in _____ hour.
    a) a   b) an   c) the   d) no article

49. _____ old friend of mine came today.
    a) a   b) an   c) the   d) no article

50. We are running out of _____ water. We need to buy a bottle.
    a) a   b) an   c) the   d) no article

51. _____ Mexico is a beautiful country.
    a) a   b) an   c) the   d) no article

Choose speech of sound : (Q.No.52 to Q.No.53)

52.   Which has the sound / i: /
       a) see   b) it   c) fill   d) money

53.   RP is called
       a) Received Pronunciation   b) Retotalled pronounciation
       c) Received pages   d) Received sounds

Prepositional phrases – Choose the right one: (Q.No.54 to Q.No.65)

54.   He is very simple _____ heart.
       a) on   b) at   c) a   d) for

55.   Could you put your ideas _____ paper?
       a) at   b) on   c) a   d) for

56.   Do not waste time _____ regret.
       a) with   b) on   c) above   d) by

57.   The shops are _____ walking distance.
       a) within   b) with   c) by   d) on

58.   She was blind _____ the age of ten.
       a) by   b) under   c) with   d) at

59.   He was _____ trial for murder.
       a) on   b) by   c) at   d) in

60.   She put her house up _____ sale.
       a) at   b) for   c) under   d) within

61.   I want to be a docter.
       a) doc-tor   b) doct-r   c) doct-re   d) doctor

62.   He likes to eat an apple.
       a) apple   b) ap'pl   c) app'le   d) appl'e

63.   The table was broken.
       a) teible   b) tei'ble   c) tayyal   d) tabl'ee

64.   today I am going to America.
       a) to'day   b) To-day   c) T-oday   d) Tod'ay

65.   The demand for cell phones was acute.
       a) deMand   b) Demand   c) DEMAND   d) DeMond

Question tags: (Q.No.66 to Q.No.72)

66. Give an example,
    a) will you   b) won't you   c) can you   d) do you

67. Let's go to the party,
    a) shall we   b) shan't we   c) should we   d) do we

68. Gopal was never been to Gao,
    a) was he?   b) does he?   c) hasn't he?   d) will he?

69. You were at home,
    a) weren't you   b) are you   c) do you   d) had you

70. She is an American,
    a) isn't she?   b) is she?   c) not she   d) won't she

71. We must watch the movies,
    a) shouldn't we   b) mustn't we   c) do they   d) mustn't they

72. I am beautiful,
    a) aren't I   b) are I   c) Is there   d) am I not

Synonyms: (Q.No.73 to Q.No.82)

73. Accept
    a) name   b) extract   c) make decision   d) will

74. Important
    a) essential   b) useless   c) specific   d) horrible

75. Obsolete
    a) currently   b) trending   c) out of date   d) organised

76. Reel
    a) bloated   b) whirl   c) restricted   d) response

77. Erudite
    a) Learned   b) Easy   c) Loving   d) Fault

78. Destroy
    a) rain   b) build   c) display   d) ruin

79. Galore
    a) scanty   b) grand   c) abundance   d) sway

80. Prominently
a) predominantly   b) distinctly   c) indefinitely   d) splendid

81. Enormous
a) huge   b) small   c) tiny   d) invisible

82. Melodrama
a) tear jerker   b) comedy   c) horror   d) romance

Choose the right meaning: (Q.No.83 to Q.No.85)

83. Analogy
a) dissimilar   b) comparison   c) meaning   d) stupid

84. Woe
a) sad   b) misery   c) happiness   d) anger

85. Articulate
a) clear   b) eloquent   c) expressive   d) unintelligible

Choose Correct Prefix/Suffix: (Q.No.86 to Q.No.89)

86. He was an _____ happy man.
a) happyful   b) unhappy   c) rehappy   d) dishappy

87. We had to _____ heat the oven before baking the cake.
a) pre   b) un   c) dis   d) ful

88. We watched the fireworks _____ ploda in the sky.
a) un   b) pre   c) dis   d) ex

89. Our teacher told us to be care _____ with fire.
a) much   b) ful   c) un   d) dis

Correct spelling: (Q.No.90 to Q.No.92)

90. The class room could _____ all the students.
a) accomodat   b) accomodate   c) accommodat   d) accommodate

91. An essential item in Indian _____ is dhal.
a) cuisine   b) ciuisine   c) ciusine   d) cuisinee

92. Proper _____ is important to communication.
a) Etiquete   b) Etiquette   c) Etiquet   d) Ettiquete

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Choose the correct verb/tense: (Q.No.93 to Q.No.94)

93. Eagles horde _____ the dead bodies.
    a) over   b) above   c) across   d) on

94. _____ of the water has evaporated.
    a) any   b) many   c) few   d) some

Similar relationships – Analogues: (Q.No.95 to Q.No.100)

95. Flower : buds
    a) Tree : Seed   b) Fish : Plankton   c) Larva : Butterfly   d) Eagle : Sparrow

96. Rabbit : Burrows
    a) Hens : Coops b) Den : Lion   c) Birds : Jungle   d) Insects : Fossils

97. Water : Cotton
    a) Petrol : Coal b) Cloth : Vapour   c) Gallons : Bales   d) Liters : Meters

98. Busy engaged : _____ Brief
    a) Laconic   b) Impress   c) Iconic   d) Indefinite

99. Pearl : Oyster
    a) Gold : Diamond b) Petrol : Coal   c) Ruby : Carbon   d) Iron : Calcium

100. Dear : fawn
    a) Giraffe : Cow   b) Goat : Kid   c) Pig : Doe   d) Ant : Drone

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CBCS SCHEME

USN [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

| Question Paper Version : C |

Second Semester B.E Degree Examination, Dec.2019/Jan.2020
Technical English – II
(COMMON TO ALL BRANCHES)

Time: 3 hrs.]   [Max. Marks: 100

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the **hundred** questions, each question carries one mark.

2. Use only **Black ball point pen** for writing / darkening the circles.

3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**

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Choose the right form of the verb. (Q.No.1 to Q.No.3)

1. Surekha was _____ to the broadcast.
   a) listen   b) listens   c) listening   d) listened

2. The river has _____ its banks.
   a) overflow   b) overflowed   c) overflowing   d) overflown

3. We are _____ to Delhi.
   a) went   b) go   c) gone   d) going

4. Correct the following Indianism –
   There was <u>pin drop silence</u> in the hall.
   a) no noise   b) quiet
   c) perfect/complete silence   d) nil noise

5. Technical Reports that are <u>oral</u> in nature are
   a) permanent   b) formal   c) ephemeral   d) written

6. One characteristic feature of a business report is
   a) a factual account   b) for a general purpose
   c) to be read by a layman   d) a personal account

7. An informal report is
   a) lengthy   b) has detailed analysis
   c) one that fulfils a long-term requirement   d) in the form of a letter or memorandum

8. Choose the routine/periodic report from those mentioned below.
   a) formal report   b) inventory report
   c) a research report that interprets   d) circular

Choose the appropriate phrases from the given options to fill in the blanks. (Q.No.9 and Q.No.10)

9. You really hit the nail _____ in your speech.
   a) in the head   b) over the head   c) above the head   d) on the head

10. I wonder what that was about, it was all _____ to me.
    a) Greek and Latin   b) French and Chinese
    c) Spanish and Chinese   d) Latin and Greek

Select the correct tense form of the verb. (Q.No.11 to Q.No.15)

11. Someone _____ left their luggage outside.
    a) have   b) has   c) is   d) was

12. One of the novelists _____ been nominated for a prize.
    a) have   b) was   c) is   d) has

13. The M.D. as well as his secretary _____ reaching here in an hour.
    a) are   b) was   c) may be   d) is

14. People really _____ about noise pollution.
    a) bothers   b) bothered   c) bother   d) bothering

15. The singer and actor _____ our guest today.
    a) an   b) is   c) are   d) was

Select the correct preposition to complete the sentence (Q.No.16 to Q.No.25)

16. The migrant workers arrived in the city four years _____.
    a) before   b) earlier   c) since   d) ago

17. The British P.M. lives _____ No.10, Downing street.
    a) in   b) on   c) at   d) by

18. The minister cannot be disturbed _____ meeting.
    a) while   b) since   c) between   d) during

19. The forms have to be submitted _____ 25th of October 2019.
    a) by   b) at   c) during   d) within

20. The bakery is _____ the street.
    a) over   b) on   c) across   d) in

21. The students went _____ home.
    a) to   b) at   c) in   d) none

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22. Flour is made _____ wheat.
    a) of   b) by   c) with   d) from

23. The teacher agreed _____ the official.
    a) with   b) to   c) for   d) from

24. The farmer is suffering _____ dengue.
    a) for   b) with   c) by   d) from

25. The course comprises _____ five modules.
    a) in   b) for   c) of   d) none

Select the correct gender of the underlined words: (Q.No.26 to Q.No.30)

26. My <u>niece</u> is a beautiful child.
    a) masculine   b) feminine   c) neuter   d) common

27. A <u>peacock</u> was dancing on the lawn.
    a) masculine   b) feminine   c) neuter   d) common

28. <u>She</u> is the author of this book.
    a) masculine   b) feminine   c) neuter   d) common

29. She is an <u>actress</u> from Hollywood.
    a) masculine   b) feminine   c) neuter   d) common

30. The <u>scenery</u> of Switzerland is charming.
    a) masculine   b) feminine   c) neuter   d) common

Fill in the blanks with the appropriate adjectives (Q.No.31 to Q.No.35)

31. The fish are moving in a _____ manner.
    a) fast   b) quick   c) slow   d) none of these

32. They have a _____ home in the hills.
    a) beauteous   b) beauty   c) beautiful   d) none of these

33. She is the _____ intelligent girl in the class.
    a) more   b) much   c) most   d) poor

34. It is a _____ unique idea.
    a) very   b) quite
    c) no adjective required   d) none of these

35. It is the _____ peak in the range.
    a) northern   b) northerner   c) northernmost   d) none of these

Select the correct meaning of the underlined idiom (Q.No.36 to Q.No.38)

36. Many startups turn in a profit <u>once in a blue moon</u>.
    a) scarcely   b) rarely   c) suitably   d) quietly

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37. The stockholders <u>poured cold water on</u> the plan to invest in a new venture.
   a) praise   b) silence   c) criticize   d) hush

38. If you try to <u>cut corners</u> during a manufacturing process, you stand to lose.
   a) save money   b) waste money
   c) discount   d) change the product

Choose the appropriate verb that agrees with the subject. (Q.No.39 to Q.No.42)

39. Either of the brothers _____ responsible for this.
   a) are   b) am   c) were   d) was

40. Which of these students _____ won the medal?
   a) have   b) has   c) having   d) not have

41. The horse and carriage _____ ready.
   a) are   b) is   c) am   d) have

42. The cricket team _____ arriving in two different trains today.
   a) am   b) was   c) is   d) are

Choose the correct word to fill the gaps in the following. (Q.No.43 to Q.No.44)

43. April 22nd is celebrated <u>1</u> Earth Day. The first <u>2</u> was held in the US in 1970. Globally even the Earth week is <u>3</u> Environmental problems are <u>4</u> with.
   1) (A) on   (B) as   (C) at   (D) in
   2) (A) one   (B) day   (C) week   (D) party
   3) (A) noted   (B) observed   (C) hailed   (D) greeted
   4) (A) dealt   (B) deal   (C) dealing   (D) deals
   a) AABA   b) CBDB   c) DCCA   d) BDAC

44. Nothing teaches you more than <u>1</u> the world and <u>2</u> experiences. The term travelling and education cannot be <u>3</u> from each other. Travelling is now <u>4</u> as an important part of education.
   1) (A) kayaking   (B) exploring   (C) yachting   (D) snorkelling
   2) (A) astounding   (B) accretion of   (C) agreeable   (D) accumulating
   3) (A) alienated   (B) divided   (C) segregated   (D) enumerated
   4) (A) noted   (B) considered   (C) regarded   (D) treated
   a) BDAC   b) ABCD   c) DABC   d) BADC

45. Essay writing should include _____.
   a) magniloquence   b) ornamentation
   c) coherence   d) rhetoric

46. Business letters must have a clear and concise _____.
   a) directive   b) purpose   c) letterhead   d) design

47. The main intention of a letter of application is _____.
    a) to advertise our qualities
    b) to boast of our abilities
    c) to impress with our writing skills
    d) to offer accurate information about our suitability for the post

48. Choose the accurate form of leave taking in a formal letter.
    a) your's truly   b) your's sincerely   c) yours faithfully   d) yours sincerely

49. Which element helps in making oral reports different?
    a) voice   b) mellifluousness   c) being soft spoken   d) nuances of voice

50. A resume is of limited value without
    a) a photography   b) pan-card details
    c) a cover letter   d) bank account details

    Choose the appropriate adverbs: (Q.No.51 to Q.No.55)

51. The candidate performed _____.
    a) brilliance   b) brilliant   c) brilliantly   d) none

52. In the exam, I wrote the answers _____.
    a) quicker   b) quickest   c) quickly   d) quicken

53. He _____ studies, yet scores well.
    a) hard   b) harder   c) hardly   d) hardest

54. It is _____ said that silence is golden.
    a) rightly   b) wrongly   c) wrongfully   d) rightfully

55. The function ended too _____.
    a) quickly   b) nicely   c) wonderfully   d) awesome

    Choose the correct form of the Active or Passive Voice of the following sentences: (Q.No.56 to Q.No.60)

56. People speak Chinese in China.
    a) Chinese is spoken in China   b) Chinese is spoken by the Chinese
    c) Chinese is being spoken by the Chinese   d) China has Chinese speakers

57. Is he painting these lovely pictures?
    a) These lovely pictures are his paintings.
    b) Are these lovely pictures being painted by him?
    c) He is the painter of these lovely pictures.
    d) His paintings are of lovely pictures.

58. Which song shall I sing?
    a) Which song should be sung by me?   b) Shall I sing a song? Which one?
    c) Which song will be sung by me?   d) Which song is to be sung?

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59. The dog was being attacked by the leopard.
    a) The leopard attacked the dog
    b) The leopard could attach only one dog.
    c) The leopard is attacking the dog.
    d) The leopard is unable to attack.

60. Let the speech be begun.
    a) Let the speech go on
    b) Begin the speech
    c) Give the speech
    d) Continue the speech

Choose the right conjunction to close the gap: (Q.No.61 to Q.No.65)

61. _____ he travels a lot, he works very hard.
    a) though   b) but   c) yet   d) still

62. The match was called off _____ of the rain.
    a) despite   b) in spite   c) because   d) none of these

63. Not only the visitors _____ the family were happy.
    a) but also   b) but   c) also   d) and

64. No sooner had we arrived _____ the programme started.
    a) when   b) than   c) then   d) none of these

65. Hardly had we reached the station, _____ the train pulled in.
    a) when   b) then   c) than   d) none of these

66. She said, "I have won seven gold medals." The indirect speech of the sentence is
    a) She said that she had won seven gold medals
    b) She claimed that she had won several medals
    c) She said that she has won several gold medals
    d) None of these

67. Which word of the following is a conjunction?
    a) because   b) fast   c) most   d) none of these

68. Which of the following is an interjection?
    a) Wow   b) Nonsense   c) Quiet please   d) none of these

69. Select the correctly spelt word.
    a) Britanica   b) Brittannica   c) Britannica   d) Bretannic

70. Choose the word pair that expresses a similar relationship:
    MUSICIAN : ENTERTAINMENT
    a) Banker : Bank
    b) Doctor : Medicine
    c) Gardener : Spade
    d) Painter : Canvas

71. Which of the following words is a preposition?
    a) under   b) sitting   c) kindly   d) become

72. Select the wrongly spelt word.
    a) emanate   b) copious   c) beligerently   d) gamut

73. Name an interpersonal barrier from the choices given below.
   a) similar perception
   b) identical assumptions
   c) differing background
   d) same inferences

74. Which of the following is barrier to effective listening?
   a) listen carefully
   b) listen positively
   c) recall
   d) listeners know too little

75. Identify the Indianism.
   a) I'm angry on him.
   b) get off at the next step
   c) Time is up
   d) I purchased a property.

Choose the correct articles from the given options. (Q.No.76 and Q.No.77)

76. The more the effort, _____ more the reward.
   a) a
   b) an
   c) the
   d) no article required

77. _____ iron is a useful metal.
   a) a
   b) an
   c) the
   d) no article required

Choose the correct pronoun that agrees with the noun. (Q.No.78 to Q.No.80)

78. The jury has concluded the proceedings and given _____ verdict.
   a) the
   b) there
   c) their
   d) themselves

79. Let _____ and me carry out the reconnaissance.
   a) he
   b) his
   c) him
   d) himself

80. This is the office of Rohan, _____ is an activist.
   a) who
   b) whom
   c) which
   d) none

81. Choose the part of the given sentences in which the grammatical error is noticeable.
   One of the / novelists / are selected / for a prize.
   a) one of the
   b) novelists
   c) are selected
   d) for a prize

82. Choose the option that is a hindrance to personal communication skills.
   a) verbosity
   b) listening
   c) distraction
   d) attentiveness

83. Non-verbal communication does not include.
   a) gestures
   b) silence
   c) posture
   d) words

84. Which of the following is not an element of group discussion?
   a) participants
   b) common objectives
   c) sharing of views
   d) written test

85. Pick an aspect of non-verbal communication from the options given below.
   a) Proxemics
   b) Paraphrasing
   c) Report
   d) Singing

86. Pick the factor that is necessary for planning a presentation.
   a) Its objective
   b) an appreciative audience
   c) articulation
   d) handwriting

87. The standard font size for a resume is _____.
 a) 8-10   b) 10-12   c) 6-8   d) 12-14

88. Choose the best option in the following sentence set.
 a) With his arrival, all welcomed the guest
 b) In his arrival, the guest was welcomed
 c) On his arrival, the guest was welcomed
 d) At his arrival, all welcomed the guest

89. Which is necessary at an interview?
 a) disagreement   b) constant nodding   c) timely responses   d) silence

90. Which of the following would not be a part of a typical presentation?
 a) Introduction   b) Conclusion
 c) Questions and answers   d) a lengthy speech

Choose the correct one word substitute: (Q.No.91 to Q.No.95)

91. A study of birds.
 a) ornithology   b) orientology   c) ethnology   d) democracy

92. A government by officials.
 a) Bureaucracy   b) aristocracy   c) Plutocracy   d) autocracy

93. One who is a newcomer
 a) neophyte   b) neonate   c) newbie   d) non-violent

94. One with a broad and international outlook.
 a) Cynic   b) Cosmopolitan   c) Stoic   d) Democrat

95. One who can speak many languages.
 a) polyglot   b) critic   c) analyst   d) philosopher

Choose the correct word to fill the blank: (Q.No.96 to Q.No.100)

96. The company purchased _____.
 a) machineries   b) machines   c) machinery   d) mechanics

97. He is the _____ of the two.
 a) elder   b) older   c) eldest   d) none of these

98. Your _____ imagination helped you write well.
 a) clear   b) vivid   c) strong   d) poor

99. A _____ of artistes have arrived in town.
 a) troop   b) troops   c) troupe   d) single

100. The cave furniture _____ the interior of the cafe.
 a) compliments   b) compliment   c) complements   d) complaints

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Version – C: Page 8 of 8

USN ☐☐☐☐☐☐☐☐☐☐   **18CHE12/22**

First/Second Semester B.E. Degree Examination, Aug./Sept.2020
Engineering Chemistry

Time: 3 hrs.   Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1. a. Define Standard reduction potential and derive Nernst equation for single electrode potential.   **(06 Marks)**
   b. What is a Reference electrode? Explain the construction and working of a Calomel electrode.   **(07 Marks)**
   c. Define Cell Potential. Give the cell representation , cell reactions and calculate the potential of the cell consists of Li and Cu electrodes dipped in 0.1 M Li Cℓ and 0.5M $CuSO_4$ solutions at 25^0C. Given E^0Li = -3.05V and E^0Cu = 0.34V.   **(07 Marks)**

OR

2. a. Define Ion selective electrode. Explain the determination of pH using glass electrode.   **(06 Marks)**
   b. Derive an equation for potential of a concentration cell and calculate the potential of following cell at 25^0C. $Ag/Ag NO_3$ (0.005m) // $Ag NO_3$(0.5m)/Ag.   **(07 Marks)**
   c. Explain the construction and working of Li - ion cells. Mention its applications.   **(07 Marks)**

Module-2

3. a. Briefly explain the effect of following factors on rate of corrosion :
   i) The ratio of Anodic and Cathodic areas   ii) Nature of corrosion product.
   iii) pH of the medium.   **(06 Marks)**
   b. Define Corrosion of metals. Describe the electrochemical theory of rusting of iron.   **(07 Marks)**
   c. Define Electroless plating and explain electroless plating of copper.   **(07 Marks)**

OR

4. a. Explain Electroplating of hard chromium and mention its applications.   **(06 Marks)**
   b. Discuss the following : i) Differential metal corrosion   ii) Anodization of aluminum.   **(07 Marks)**
   c. Explain in brief : i) Sacrificial anode method   ii) Decomposition potential.   **(07 Marks)**

Module-3

5. a. Define Calorific value of a fuel and calculate the gross and net calorific value of a coal from the following data :
   i) Mass of coal burnt = 0.85 gms.
   ii) Water equivalent mass of copper calorimeter = 0.65kg.
   iii) Mass of water taken in the copper calorimeter = 2.2kg.
   iv) Rise in temperature of water = 3.0^0C.
   v) Percentage of H_2 in the coal = 3.2.
   vi) Latent heat of steam = 2457.76 kJ/kg.   **(06 Marks)**
   b. Define Fuel cell and explain the construction and working $CH_3OH – O_2$ fuel cell.   **(07 Marks)**
   c. Describe the preparation of solar grade silicon by Union carbide process.   **(07 Marks)**

OR

6   a.   Explain the experimental determination of calorific value of a fuel using bomb calorimeter.
(07 Marks)

   b.   What are Solar cells? Explain the construction and working of a Photo voltaic cell. (06 Marks)

   c.   Discuss : i) Knocking of petrol engine   ii) Power alcohol.   (07 Marks)

Module-4

7   a.   Discuss the sources , effects and control measures of oxides of nitrogen.   (06 Marks)

   b.   Explain the causes, effects and disposal methods of biomedical wastes.   (07 Marks)

   c.   Explain Scale and Sludge formation in boilers.   (07 Marks)

OR

8   a.   Define BOD and COD. Calculate the COD of a wastewater if 25ml of which consumes 10.5ml of 0.02N $K_2Cr_2O_7$ for complete oxidation.   (06 Marks)

   b.   Explain the softening of water by ion exchange method.   (07 Marks)

   c.   Explain the following : i) Ozone depletions   ii) Reverse osmosis.   (07 Marks)

Module-5

9   a.   Explain the theory and instrumentation of colorimetry.   (07 Marks)

   b.   Discuss the theory of conductometric titration and explain the nature of graph for the following titrations :
         i)   Strong acid with strong base   ii)   Weak acid with strong base.   (07 Marks)

   c.   Explain the synthesis of nanomaterials by Chemical Vapour Deposition method.   (06 Marks)

OR

10   a.   Explain Sol – gel method of synthesis of nanomaterials.   (06 Marks)

   b.   Write a note on synthesis , properties and uses of Fullerenes.   (07 Marks)

   c.   Explain 'Atomic Absorption Spectroscopy'.   (07 Marks)

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17CHE12/22

First/Second Semester B.E. Degree Examination, Aug./Sept.2020
Engineering Chemistry

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. Define Single Electrode Potential. Derive the Nernst equation for single electrode. **(07 Marks)**
   b. What are reference electrodes? Describe the construction and working of glass electrode. Mention the uses. **(07 Marks)**
   c. Define fuel cells. Explain the difference between battery and fuel cell. **(06 Marks)**

OR

2 a. What are concentration cells? An electrolyte concentration cell consists of two magnesium electrodes immersed in magnesium nitrate solutions of 0.024 M and 0.064M concentration at 25°C. Give the cell representation, cell reaction and calculate the emf of the cell. **(07 Marks)**
   b. Describe he construction and working of lithium ion battery. Mention the uses. **(07 Marks)**
   c. Write a note on (i) Voltage (ii) Cycle life (iii) Shelf life. **(06 Marks)**

Module-2

3 a. What is galvanization? Explain galvanization process by hot dipping? Mention uses. **(07 Marks)**
   b. Define Electroless Plating. Explain electroless plating of copper with relevant reactions. **(07 Marks)**
   c. Explain the following factors affecting rate of corrosion :
      (i) Nature of the metal   (ii) Ratio of anodic and cathodic area   (iii) pH **(06 Marks)**

OR

4 a. Define corrosion. Explain the electrochemical theory of corrosion by taking Iron as an example. **(07 Marks)**
   b. Define electroplating? Explain the electroplating of chromium. Mention the uses. **(07 Marks)**
   c. Define Metal Finishing? Give the technological importance of metal finishing. **(06 Marks)**

Module-3

5 a. What is cracking? Explain fluidized catalytic cracking process. **(07 Marks)**
   b. 0.85g of coal sample (Carbon = 90%, H_2 = 5% and ash = 5%) was subjected to combustion in a bomb calorimeter. Mass of water taken in the calorimeter was 2000g and the water equivalent of the calorimeter was 600g. The rise in temperature was found to be 3.5°C. Calculate the gross and net calorific values of the sample.
      (Latent heat of steam = 2454 kJ kg^{-1}, Specific heat of water = 4.2 kJ kg^{-1} $°C^{-1}$) **(07 Marks)**
   c. Explain the purification of Silicon by zone refining process. **(06 Marks)**

OR

6 a. Define calorific value of fuel? Explain the experimental determination of calorific value of a solid fuel using Bomb Calorimeter. **(07 Marks)**
   b. Describe the synthesis of petrol by Fishcer – Tropsch process. **(07 Marks)**
   c. Explain the construction and working of Photovoltaic Cell. **(06 Marks)**

Module-4

7 a. Define Polymers. Differentiate between Addition and Condensation polymerization.
(07 Marks)
   b. Explain the free radical mechanism of addition polymerization of by taking vinyl chloride as an example. (07 Marks)
   c. Explain the synthesis and applications of (i) Polyurethanes (ii) Polycarbonates. (06 Marks)

OR

8 a. In a sample of a polymer, 100 molecules have molecular mass 10^3 g/mol, 250 molecules have molecular mass 10^4 g/mol and 300 molecules have molecular mass 10^5 g/mol. Calculate the number average and weight average molecular mass of the polymer.
(07 Marks)
   b. Define Glass transition temperature? Explain any three factors affecting glass transition temperature. (07 Marks)
   c. Give the synthesis and applications of (i) Kevlar (ii) Epoxy resin. (06 Marks)

Module-5

9 a. What is boiler corrosion? Explain with reactions. (07 Marks)
   b. What is desalination? Explain desalination of seawater by Reverse Osmosis process.
(07 Marks)
   c. What are nano materials? Explain the synthesis of nano materials by Sol-gel method.
(06 Marks)

OR

10 a. Define COD and BOD. In a COD test 20.5 cm^3 and 10.5 cm^3 of 0.01 N FAS solution are required for blank and sample titration respectively. The volume of test sample used is 25 cm^3. Calculate the COD of the sample. (07 Marks)
    b. Explain any three size dependent properties of nanomaterials. (07 Marks)
    c. Write short notes on :
        (i) Fullerenes
        (ii) Carbon nano rods. (06 Marks)

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First/Second Semester B.E. Degree Examination, Aug./Sept.2020
Engineering Chemistry

Time: 3 hrs.

Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1 a. State Nernst equation. Derive Nernst equation for electrode potential. (05 Marks)
   b. Why Calomel electrode is a reversible electrode? Discuss its construction and working. (05 Marks)
   c. List out all the characteristics of a battery. Explain any two of them. (05 Marks)
   d. Explain the construction and working of $Li-MnO_2$ battery with neat sketch. (05 Marks)

OR

2 a. Why glass electrode is called ion – selective electrode? Discuss its applications in the determination of pH of a solution. (05 Marks)
   b. What is an electrolyte concentration cell? A concentration cell is constructed by dipping two Ag electrodes in 0.01M and 0.5M $AgNo_3$ solution. Write the cell scheme, redox reactions and calculate the emf of the cell at 298 K. (05 Marks)
   c. Explain the construction and working of zinc – air battery. (05 Marks)
   d. Explain the construction and working of $CH_3 OH – O_2$ fuel cell using concentration H_2SO_4 as electrolyte. (05 Marks)

Module-2

3 a. Define Corrosion. What are the factors influence rate of corrosion? Explain any two of them. (05 Marks)
   b. An iron equipment functions in an moist atmosphere becomes covered with dust/soil gradually suffers with corrosion. Indicate the type of corrosion and explain the mechanism of it. (05 Marks)
   c. What is metal finishing? Define the polarization and over – voltage which governs the electroplating. (05 Marks)
   d. Discuss the relevant details of electroplating of decorative chromium. (05 Marks)

OR

4 a. How does the design and selection of material helps to control corrosion? Briefly explain. (05 Marks)
   b. Write a brief note on :
      i) Sacrificial anodic method   ii) Impressed current cathodic protection. (05 Marks)
   c. Define Decomposition potential. Illustrate it. Mention its importance in electroplating. (05 Marks)
   d. What is Electroless plating? Discuss the electroless plating of copper on PCB's. (05 Marks)

Module-3

5 a. What are Fuels? How are they classified? Give an example for each. (04 Marks)
   b. Discuss the principle and process involved in the experimental determination of GCV of coal sample by Bomb – Calorimetric method. (06 Marks)

c. What is PV cell? Explain briefly the designing of PV cell in the form of modules, panels and arrays. **(05 Marks)**

d. What is doping of Silicon? Outline the doping of Silicon by diffusion method. **(05 Marks)**

OR

6 a. Define the following : i) Octane number   ii) Cetane number   iii) Gasoline Knocking   iv) Power alcohol   v) Bio – diesel. **(05 Marks)**

b. 0.85 g of coal sample [C = 90% , H = 5% and ash = 5%] was subjected to combustion in a bomb calorimeter. Mass of water taken in the calorimeter was 2500 g and the water equivalent of the calorimeter was 650g. the rise in temperature was found to be 3.2^0C. Calculate the GCV and NCV of the sample if specific heat of water as 4.187KJ/kg/^{0}C , Latent heat of steam = 2457KJ/kg. **(05 Marks)**

c. Discuss the production of solar grade Silicon by union carbide process. **(05 Marks)**

d. Give an account on purification of Si by zone refining method with neat diagram. **(05 Marks)**

Module-4

7 a. What is addition polymerization? Explain the free radical mechanism of polymerization of vinyl chloride. **(05 Marks)**

b. Explain the terms : i) Number average polymer mass   ii) Weight average polymer mass. **(05 Marks)**

c. What are polymer composites? Briefly discuss the synthesis and applications of Kevlar. **(05 Marks)**

d. What are conducting polymers? Explain the mechanism of conduction in polyaniline. **(05 Marks)**

OR

8 a. A polymer sample contains 100, 200, 300 and 400 molecules having molar mass 1000, 2000, 3000 and 4000 respectively. Calculate the number average and weight average molar masses of the polymers. **(04 Marks)**

b. What is Tg? Discuss how the following factors influence on Tg : i) Intermolecular forces   ii) Molar mass   iii) Branching and cross linking. **(06 Marks)**

c. Explain the synthesis and applications of i) Plexiglass   ii) Polyurethane. **(05 Marks)**

d. What are Adhesives? Outline the synthesis and applications of Epoxy resins. **(05 Marks)**

Module-5

9 a. What are the sources and impurities present in natural water? Mention the boiler troubles. **(05 Marks)**

b. Define BOD. Discuss the experimental determination of BOD of paper and pulp industrial discharge by Winkler's method. **(05 Marks)**

c. What are nano materials? Explain the synthesis of nano materials by Sol – gel method. **(05 Marks)**

d. Write an explanatory note on Fullerenes. **(05 Marks)**

OR

10 a. Define COD. Calculate the COD of 25cm^3 of waste water when mixed with 25cm^3 of $K_2Cr_2O_7$. acidified and refluxed. The unreacted $K_2Cr_2O_7$ acidified required 8.2cm^3 of FAS. In a blank titration , 25cm^3 of $K_2Cr_2O_7$ acidified required 16.4cm^3 of same 0.2N of FAS. **(05 Marks)**

b. What is ion – exchanged water? Discuss with all relevant equations how the softening of water by ion – exchange process is carried out. **(05 Marks)**

c. Explain the synthesis of nano materials by Chemical vapour condensation method. **(05 Marks)**

d. What are Carbon Nano Tubes (CNT)? Explain their importance in the Engineering and Technology. **(05 Marks)**

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18ELN14/24

First/Second Semester B.E. Degree Examination, Aug./Sept.2020
Basic Electronics

Time: 3 hrs.

Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1   a. Explain the operation of PN – junction diode under forward and reverse bias condition.
(08 Marks)
    b. Explain how zener diode can be used as voltage regulator. (06 Marks)
    c. A silicon diode has I_S = 10nA, operating at 25°C. Calculate diode current I_D for a forward bias of 0.6V. (06 Marks)

OR

2   a. With neat circuit diagram, explain the operation of center tapped full wave rectifier. Draw input and output waveforms. (08 Marks)
    b. Explain photo diode and LED in brief. (06 Marks)
    c. Explain LM7805 fixed voltage regulator. (06 Marks)

Module-2

3   a. Explain construction and operation of n–channel JFET. Draw transfer and drain characteristic. (08 Marks)
    b. Explain the operation of CMOS inverter. (06 Marks)
    c. A n–channel JFET has I_{Dss} = 8mA, V_p = –4V. Determine I_D for V_{GS} = –1V and V_{GS} = –2V.
(06 Marks)

OR

4   a. Explain construction and operation of n – channel depletion MOSFET. (08 Marks)
    b. Explain the operation of SCR using 2 – Transistor model. (06 Marks)
    c. Explain natural and forced commutation turn off methods of SCR. (06 Marks)

Module-3

5   a. Define following terms with respect to OP –Amp : i) CMRR   ii) Input offset voltage iii) Slew rate. Also mention op-amp ideal characteristics. (08 Marks)
    b. A certain op-amp has an open loop differentials voltage gain of 1,00,000 and CMRR = 4,00,000. Determine common mode gain and express CMRR in decibels.
(06 Marks)
    c. Explain op-amp as integrator. (06 Marks)

OR

6   a. With neat circuit, explain the operation of three input adder circuit. Derive expression for V_0. (08 Marks)
    b. A non inverting amplifier has closed loop gain of 25. If input voltage V_i = 10mv, R_f = 10KΩ determine the value of R_1 and output voltage V_0. (06 Marks)
    c. Explain difference amplifier using op-amp. (06 Marks)

Module-4

7 a. With neat circuit, explain transistor as an amplifier. Derive expression for voltage gain.
(08 Marks)

   b. Mention types of feedback amplifier. With block diagram, explain voltage series feedback amplifier. (06 Marks)

   c. A negative feedback amplifier has gain $A = 1000$ and bandwidth of 200KHz. Calculate gain and bandwidth with feedback if feedback factor $\beta = 20\%$. (06 Marks)

OR

8 a. What is phase shift oscillator? Explain with circuit, RC phase shift oscillator. (08 Marks)

   b. Explain with circuit, Astable multivibrator using IC 555. (06 Marks)

   c. An Astable multivibrator circuit has $R_1 = 6.8K\Omega$, $R_2 = 4.7K\Omega$, $C = 0.1\mu F$. Calculate frequency of oscillation and duty cycle. (06 Marks)

Module-5

9 a. Convert :

   i) $(2467.125)_{10} = (?)_2 = (?)_{16}$

   ii) $(765.16)_8 = (?)_{10} = (?)_2$

   iii) $(101111.101)_2 = (?)_8 = (?)_{10}.$ (08 Marks)

   b. Explain full adder using truth table and expression. Implement sum and carry expressions. (06 Marks)

   c. Implement half adder using NAND gates. (06 Marks)

OR

10 a. State and prove De–Morgan's theorems for two variables. (08 Marks)

    b. With the help of logic diagram and truth table, explain the working of clocked SR – Flip flop. (06 Marks)

    c. Explain the basic block diagram of communication system. (06 Marks)

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First/Second Semester B.E. Degree Examination, Aug./Sept.2020
Basic Electronics

Time: 3 hrs.   Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. Explain pn junction diode operation in both forward and reverse bias conditions with suitable diagrams. **(06 Marks)**
   b. With a neat diagram and waveforms, explain the operation of bridge rectifier. **(08 Marks)**
   c. Explain Zener diode voltage regulator with no load and with load. **(06 Marks)**

OR

2 a. With a neat circuit diagram, explain the operation of center tapped full wave rectifier. Draw the input and output waveforms. **(07 Marks)**
   b. Sketch the transistor input and output characteristics of CE configuration and briefly explain the three regions of operation. Also calculate the value of I_C and β_{dc} for a transistor with $\alpha_{dc} = 0.98$ and $I_B = 120$ μA. **(07 Marks)**
   c. What is the need of capacitor filter? Explain the operation of C-filter for half wave rectifier. **(06 Marks)**

Module-2

3 a. Write the procedure for drawing dc load line on the transistor CE output characteristics. **(06 Marks)**
   b. Derive an equation for output voltage of a non-inverting op-amp. Find the gain of op-amp if $R_F = 10$ KΩ and $R_1 = 1$ KΩ. **(08 Marks)**
   c. Design a base bias circuit with a 12V supply that uses a transistor with $h_{fe} = 70$ so that $I_C = 2$ mA and $V_{CE} = 9$V. Assume $R_E = 0$ and $V_{BE} = 0.7$ V. **(06 Marks)**

OR

4 a. With a neat circuit diagram, explain the voltage divider bias circuit using approximate analysis. Given $V_{CC} = 15$ V, $R_C = 2.7$ KΩ, $R_E = 2.2$ KΩ, $R_1 = 22$ KΩ, $R_2 = 12$ KΩ. $V_{BE} = 0.7$ V. Calculate V_E, V_C, I_C and V_{CE}. **(09 Marks)**
   b. Derive an expression for output voltage of op-amp subtractor. **(07 Marks)**
   c. An op-amp has a slew rate of 0.8 V/μsec. What is the maximum amplitude of undistorted sine wave that the op-amp can produce at a frequency of 40 kHz? What is the maximum frequency of the sine wave that op-amp can reproduce if the amplitude is 3V? **(04 Marks)**

Module-3

5 a. Perform the following operations:
      (i) $(ABC.E5F)_{16} = (?)_{10}$ (ii) $(100.974)_{10} = (?)_2$ (iii) $(1100111.0101)_2 = (?)_8$ **(06 Marks)**
   b. Design and implement full adder using logic gates. **(06 Marks)**
   c. Using NOR gates realize NOT gate, OR gate, AND gate and NAND gate. **(08 Marks)**

OR

6   a. State and prove Demorgan's theorem. (06 Marks)
    b. Subtract: (i) $(11011.11)_2 - (10101.11)_2$ using 1's complement method
        (ii) $(10101.11)_2 - (11011.11)_2$ using 2's complement method. (06 Marks)
    c. Simplify and realize the following Boolean expressions using NAND gates:
        (i) $Y_1 = \overline{A}\,\overline{B}\,\overline{C} + ABC + \overline{A}B\overline{C} + A\overline{B}C$ (ii) $Y_2 = (\overline{A} + \overline{B} + C)(A + \overline{B} + C)$ (08 Marks)

Module-4

7   a. Define flip-flop. Explain the operation of RS flip-flop. (06 Marks)
    b. Explain the architecture of 8051 microcontroller with a neat block diagram. (08 Marks)
    c. Explain the operation of NAND gate latch. (06 Marks)

OR

8   a. Explain the operation of clocked RS flip-flop. (06 Marks)
    b. Write the features of 8051 microcontroller. (08 Marks)
    c. With a neat interfacing diagram, explain how stepper motor is interfaced to 8051 microcontroller. (06 Marks)

Module-5

9   a. Explain the elements of communication system with the help of neat block diagram. (06 Marks)
    b. Define modulation. With suitable equations and waveforms, explain frequency modulation. (08 Marks)
    c. What are passive and active transducers? Explain Seebeck effect and Peltier effect. (06 Marks)

OR

10 a. With circuit diagram and waveform, explain the AM detection. (06 Marks)
    b. A 1 MHz carrier of 1 KW power is amplitude modulated with a message signal of 2 kHz. The depth of modulation is 60%. Determine the total power, sideband frequencies and power in sidebands of the AM wave. (06 Marks)
    c. Explain the construction and operation of LVDT. (08 Marks)

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2 of 2

CBCS SCHEME

USN ☐☐☐☐☐☐☐☐☐☐ **15ELN15/25**

First/Second Semester B.E. Degree Examination, Aug./Sept.2020
Basic Electronics

Time: 3 hrs.   Max. Marks: 80

Note: Answer any FIVE full questions, choosing one full question from each module.

Module-1

1 a. What is diode? Explain the various parameters of diode in brief. **(06 Marks)**
   b. Draw the center tap full wave rectifier circuit and explain its operation. **(05 Marks)**
   c. Explain how zener diode can be used as a voltage regulator. **(05 Marks)**

OR

2 a. Establish the relationship between α and β. **(04 Marks)**
   b. Explain about common emitter characteristics with diagram. **(08 Marks)**
   c. Calculate α_{dc} and β_{dc} for the transistor if I_C is measured as 1 mA and I_B is 25 μA. Also determine the new base current to give I_C = 5 mA. **(04 Marks)**

Module-2

3 a. Discuss the selection of operating point related to DC load line. **(04 Marks)**
   b. Explain about voltage divider bias circuit with diagram. **(06 Marks)**
   c. Calculate the minimum and maximum values of I_C and V_{CE} for the base bias when $h_{FE(min)}$ = 50 and $h_{FE(max)}$ = 60. For circuit V_{CC} = 12V, R_C = 2 kΩ and R_B = 150 k (Assume silicon transistor). **(06 Marks)**

OR

4 a. What is Op–Amp? Write the characteristics of ideal Op–Amp. **(06 Marks)**
   b. Explain the Op–Amp integrator circuit with equation. **(06 Marks)**
   c. An inverting amplifier has R_1 = 20 kΩ, R_f = 100 kΩ. Find the O/P voltage, I/P resistance and I/P current for an I/P voltage of 1V. **(04 Marks)**

Module-3

5 a. Perform the following operations :
      i) $(110.1101)_2 = (?)_{10} \rightarrow$ Binary to Decimal
      ii) $(47.8125)_{10} = (?)_2 \rightarrow$ Decimal to Binary
      iii) $(31C.DE)_{16} = (?)_{10} \rightarrow$ Hexadecimal to Decimal
      iv) $(11010.101)_2 = (?)_{16} \rightarrow$ Binary to Hexadecimal. **(08 Marks)**
   b. State and prove Demorgan's theorem with two variables. **(04 Marks)**
   c. Construct a circuit for the expression X = AB + CD using :
      i) Only NAND gates
      ii) Only NOR gates. **(04 Marks)**

OR

6 a. Prove and implement by using basic gates :
      i) $A + \overline{A}B = A + B$
      ii) $(A + B)(A + C) = A + BC$. **(04 Marks)**
   b. Explain half adder circuit by using only NAND gates along with expression. **(06 Marks)**
   c. Explain the basic laws of Boolean algebra. **(06 Marks)**

Module-4

7   a.   What is Flip–Flop? List out the applications of Flip–Flop.   (04 Marks)

     b.   Explain about working of clocked SR Flip–Flop along with truth table.   (08 Marks)

     c.   Mention the features of 8051.   (04 Marks)

OR

8   a.   Explain the architecture of 8051 with neat diagram.   (08 Marks)

     b.   Briefly explain about SR latch with NAND gate structure.   (06 Marks)

     c.   Mention the application of Micro controller.   (02 Marks)

Module-5

9   a.   Compare between FM and AM.   (06 Marks)

     b.   Define transducer. Explain about piezoelectric transducer and resistive transducer. (06 Marks)

     c.   If FM is represented by $V = 10 \sin (8 \times 10^8 + 4 \sin 1000t)$. Calculate :

       i)   Carrier frequency (f_c)

       ii)   Modulating frequency (f_m).   (04 Marks)

OR

10   a.   What is LVDT? Explain with diagram.   (06 Marks)

     b.   Explain elements of communication system along with block diagram.   (06 Marks)

     c.   List out the difference between active and passive transducer.   (04 Marks)

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First/Second Semester B.E. Degree Examination, Aug./Sept.2020
Elements of Mechanical Engineering

Time: 3 hrs.　　　　　　　　　　　　　　　　　　　　　　Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
*　　　2. Use of steam tables is permitted.*

Module-1

1　a. Differentiate renewable energy sources with non-renewable sources.　(04 Marks)
　b. Briefly explain Global Warming and Ozone depletion.　(08 Marks)
　c. Define Zeroth, 1st law, 2nd law and 3rd law of thermodynamics.　(08 Marks)

OR

2　a. Define:
　　　(i)　Internal energy
　　　(ii)　Enthalpy
　　　(iii)　Entropy　(06 Marks)
　b. Explain the formation of steam.　(06 Marks)
　c. Explain briefly the application of hydel, wind, nuclear and bio-fuels.　(08 Marks)

Module-2

3　a. Explain the working of Lancashire boiler with neat sketch.　(10 Marks)
　b. With neat sketch, explain working of Francis turbine.　(10 Marks)

OR

4　a. List and explain functions of any four boiler mountings.　(06 Marks)
　b. Explain the working of centrifugal pump with neat sketch.　(08 Marks)
　c. Explain the phenomenon of priming and cavitation in pump.　(06 Marks)

Module-3

5　a. Explain the working of four-stroke diesel engine with neat sketch.　(10 Marks)
　b. A single cylinder two stroke petrol engine develops 7.5 KW at 2500 rpm. The mean effective pressure on the piston is 8 bar and mechanical efficiency is 80%. Calculate the diameter and stroke length of the cylinder if stroke to bore ratio is 1.5, also calculate the fuel consumption rate if the brake thermal efficiency is 28%. The calorifical value of the fuel used is 43,900 kJ/kg.　(10 Marks)

OR

6　a. Define:
　　　(i)　Refrigerating effect
　　　(ii)　Tonn of refrigeration
　　　(iii)　Ice making capacity
　　　(iv)　Coefficient of performance
　　　(v)　Unit of refrigeration　(10 Marks)
　b. With a neat sketch, explain the working of vapour compression refrigeration.　(10 Marks)

1 of 2

Module-4

7 a. Write short note on smart materials and shape memory alloys. (08 Marks)
  b. Explain with neat sketch the oxy-acetylene gas welding. (08 Marks)
  c. Explain briefly thermoplastics and thermosetting polymers. (04 Marks)

OR

8 a. Define velocity ratio of belts. Derive the length of the belt in open drive. (10 Marks)
  b. List the advantages of V-belts over flat belts. (04 Marks)
  c. Explain spur, helical and bevel gears. (06 Marks)

Module-5

9 a. Explain the following lathe operations:
     (i) Turning
     (ii) Facing
     (iii) Knurling
     (iv) Drilling (10 Marks)
  b. Explain the following milling operations:
     (i) Plane milling
     (ii) End milling
     (iii) Slot milling
     (iv) Gang milling (10 Marks)

OR

10 a. With a neat sketch, explain components of CNC system. (08 Marks)
   b. List the advantages of CNC machines. (04 Marks)
   c. Explain the application of Robots in material handling and assembly. (08 Marks)

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USN | | | | | | | | | | 18CPS13/23

First/Second Semester B.E. Degree Examination, Aug./Sept.2020
C – Programming for Problem Solving

Time: 3 hrs.   Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1 a. Define Computer. Explain the generations of computer. (08 Marks)
   b. List the input devices of computer and explain any two input devices. (06 Marks)
   c. Define Algorithm. Write an algorithm to find the area and perimeter of a rectangle. (06 Marks)

OR

2 a. Explain the basic structure of C program, with an example. (08 Marks)
   b. What is an Operator? List and explain any 4 types of operator. (08 Marks)
   c. Evaluate the following expressions :
      i) $100\% 20 < = 20 - 5 + 100\% 10 - 20 = = 5 > = 1! = 20.$
      ii) $a + = b * = c - = 5$, where $a = 3$, $b = 5$ and $c = 8$. (04 Marks)

Module-2

3 a. Explain formatted input output functions in C with examples. (06 Marks)
   b. What are different types of conditional statements? Explain if, if else and nested if with syntax and examples. (08 Marks)
   c. Write a C program to find the sum of natural numbers from 1 to N using while loop. (06 Marks)

OR

4 a. List the differences between while and do – while loop along with syntax and example. (06 Marks)
   b. Write a C program to find all possible roots of quadratic equation and print them with appropriate messages. (08 Marks)
   c. Explain break and continue statements with example. (06 Marks)

Module-3

5 a. What is an array? Write syntax for declaring two dimensional array and initialize the same with suitable examples. (08 Marks)
   b. Write a C program to find biggest of n numbers using arrays. (06 Marks)
   c. List the differences between Linear and binary search. (06 Marks)

OR

6 a. Explain any 4 string manipulation library functions with examples. (08 Marks)
   b. Write a C program to find transpose of a given matrix. (06 Marks)
   c. Write an algorithm for linear search. (06 Marks)

Module-4

7 a. Define Function. What are the advantages of user defined functions? (06 Marks)
   b. Explain types of functions based on parameters. (08 Marks)
   c. Define Recursion. Write a C program to find factorial of a number using recursion. (06 Marks)

OR

8 a. Define the following :
   i)   Actual parameter   ii) Formal parameter
   iii) Global variable   iv) Local variable.   (06 Marks)
   b. Write a C function isprime (num) that accepts an integer argument and returns 1 if the argument is prime, 0 otherwise. Write a C program that invokes this function to generate prime numbers between given range.   (08 Marks)
   c. Write a C program to generate Fibonacci series using recursive function.   (06 Marks)

Module-5

9 a. What is a Structure? Explain structure with syntax and example.   (08 Marks)
   b. Differentiate between Structures and Unions.   (04 Marks)
   c. Write a C program to maintain record of n students using structures with 4 fields (Rollno, marks, name and grade). Print the names of students with marks > = 70.   (08 Marks)

OR

10 a. What is a Pointer? Explain how pointer variable is declared and initialized.   (06 Marks)
   b. What is Preprocessor directive? Explain #define and #include preprocessor directive.
                                                                              (06 Marks)
   c. Explain call by value and call by reference with functions.   (08 Marks)

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2 of 2

USN | | | | | | | | | | **17PCD13/23**

First/Second Semester B.E. Degree Examination, Aug./Sept. 2020
Programming in C and Data Structures

Time: 3 hrs.   Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1 a. What is Pseudocode? Write pseudocode to swap the contents of two variables. (06 Marks)
   b. Explain the use of following statements in C with syntax and example.
      i)   Declaration statement
      ii) Assignment statement
      iii) Formatted input/output statement.   (10 Marks)
   c. Define the following with example.
      i) Variable   ii) Keyword   iii) Identifier   v) Constant. (04 Marks)

OR

2 a. List the operators used in C. Explain basic data types in C language. (06 Marks)
   b. Define precedence and Associatively of an operator, and evaluate the following expressions.
      i) $a + 2 > b \;\|\; !c \& \& a = = d \;\|\; a - 2 <= e$
           Where a = 11, b = 6, c = 0, d = 7 and e = 5.
      ii) 5*(11.0 –5) * 2/4 + 9   (08 Marks)
   c. Write C program for the following :
      i) Compute sum and average of any three integer numbers
      ii) Compute compound interest.   (06 Marks)

Module-2

3 a. Explain the working of following statements in C language with syntax and example
      i)   The nested if else statement
      ii) The switch statement
      iii) The do-while loop.   (09 Marks)
   b. Write a C program to find sum of odd and even numbers from 1 to n.   (05 Marks)
   c. Write a C program to print Fibonacci series up to n terms.   (06 Marks)

OR

4 a. Explain how break and continue statement are used in the loop of C program. (08 Marks)
   b. Write the following statement into nested conditional operator and nested if else statement.
      "Consider weekly salary of a salesman who sells some products, if X is the number of products sold in a week his salary is given by as bellow".
           salary = 4x + 100 for x < 40
           salary = 300   for x = = 40
           salary = 4.5x + 15 for x > 40   (04 Marks)
   c. Write a C program to reverse the digits of gives integer number and check for palindrome. (08 Marks)

Module-3

5 a. What is array? Write a C program to read values into an two dimensional array and display the contents of the same array. (06 Marks)

b. Explain the use of following functions with example :
   i) getchar( )   ii) gets( )   iii) putchar( )   iv) puts( ).   (08 Marks)

c. What are three important elements of user defined functions? Explain each with syntax and example.   (06 Marks)

OR

6 a. Write a C program to perform addition of two matrices.   (08 Marks)

b. Explain the use of stremp( ) and strcat( ) functions with example and write a C program to count number of a's in a given string.   (06 Marks)

c. Write a program to sort the elements of an array by passing the array to a function called as sort( ).   (06 Marks)

Module-4

7 a. What is Structure? Define a structure type employee that contain Ename, Eid, and salary using this structure, write a C program to Read this information for one employee from the keyboard and print the same.   (08 Marks)

b. Explain Defining, opening and closing of a file with example.   (06 Marks)

c. Explain array of structure and nested structure with example.   (06 Marks)

OR

8 a. Write programming using structure to accept the rollno, name and marks obtained in 3 tests of three students and display name, rollno and marks in 3 subjects and average.   (08 Marks)

b. Explain File I/O operations and write a program to read data from the keyboard and write if to a file named as 'Input' then read the data from 'Input' file and display it on to the screen.   (12 Marks)

Module-5

9 a. What is Pointer? Explain how pointer variable is declared and initialized.   (05 Marks)

b. What are primitive and Non-primitive Data structure? Explain.   (07 Marks)

c. Write a program using pointer to compute the sum of all elements stored in an array.   (08 Marks)

OR

10   Write a short notes on :
   a. Pinter to pointer   (04 Marks)
   b. Stack   (04 Marks)
   c. Queue   (04 Marks)
   d. Dynamic memory management   (04 Marks)
   e. Preprocessor directives.   (04 Marks)

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USN ☐☐☐☐☐☐☐☐☐☐

15PCD13/23

First/Second Semester B.E. Degree Examination, Aug./Sept.2016
Programming in C & Data Structures

Time: 3 hrs.   Max. Marks: 80

Note: Answer any FIVE full questions, choosing one full question from each module.

Module-1

1 a. Explain the structure of C-program.   (05 Marks)
   b. List logical operators and write C-Program to demonstrate working of these logical operators.   (06 Marks)
   c. Which of the following are valid and invalid variable? If invalid give reasons.
       (i) V143   (ii) help + me   (iii) Auto   (iv) 1947_India   (v) Hello_How_Are_You
                                                                             (05 Marks)

OR

2 a. What is a token? What are different types of tokens available in C language? Explain.
                                                                             (08 Marks)
   b. Write an algorithm and program to find the biggest of given three numbers.   (08 Marks)

Module-2

3 a. Write C-program to find the roots of a quadratic equation.   (08 Marks)
   b. Explain a syntax of while statement. Write a C-program to check the given no. is a Palindrome or not.   (08 Marks)

OR

4 a. What is an array? How to declare and initialize the two dimensional array.   (08 Marks)
   b. Explain the break and continue statements with an example.   (08 Marks)

Module-3

5 a. What is a function? Write a C program to find the sum of array elements using a function.
                                                                             (08 Marks)
   b. What is recursion? Explain call by value in C using suitable example.   (08 Marks)

OR

6 a. Write a C program to sort the elements of an array using bubble sort.   (08 Marks)
   b. Write a C-program to concatenate two strings without using built in function.   (08 Marks)

Module-4

7 a. What is a structure? Explain how to declare and initialize a structure with an example.
                                                                             (08 Marks)
   b. Explain with an example how to pass structure variable as function argument in C.(08 Marks)

OR

8 a. Write a C program to store and print Name, USN, Subject Name and IA marks of students using structure.   (08 Marks)
   b. Explain the following functions with examples: i) malloc ( )   ii) calloc ( )   (08 Marks)

Module-5

9 a. What is a pointer? Give advantages and disadvantages in C.   (08 Marks)
   b. What is queue? Explain its operations with examples.   (08 Marks)

OR

10 a. Write C program to swap two numbers using pointers.   (05 Marks)
   b. Explain any five preprocessor directives in C.   (05 Marks)
   c. What are primitive and non-primitive data structures? Explain with examples.   (06 Marks)

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USN | | | | | | | | | | |

First/Second Semester B.E. Degree Examination, Aug./Sept.2020
Programming in C and Data Structures

Time: 3 hrs.   Max. Marks:100

Note: *Answer any FIVE full questions, selecting ONE full question from each module.*

Module – 1

1 a. Explain basic concepts of C program.   (08 Marks)
   b. Define variable. Give example. List out any four rules to be followed while using a variable.
                                                                                               (06 Marks)
   c. Write a C program to swap the contents of two variables.   (06 Marks)

2 a. Explain relational operators in C with example.   (08 Marks)
   b. Define Pseudocode. What is its purpose? Write pseudocode to display numbers from 1 to 10
       along with their squares.   (06 Marks)
   c. What would be the value of 'a' after the execution of the following expressions:
       (i)   a+ = (a++) + (++a)   (ii) a = (– – a) – (a – –)   (06 Marks)

Module – 2

3 a. Explain single selection and two way selection in C language along with syntax.   (08 Marks)
   b. What is purpose of switch statement? Explain with syntax.   (04 Marks)
   c. Write a C program to simulate the working of a calculator with addition, subtraction,
       multiplication and division. Use switch.   (08 Marks)

4 a. How do you perform looping in C? Give the syntax of loop constructs.   (08 Marks)
   b. Explain the following statements supported in C – break, continue, goto.   (06 Marks)
   c. Write a C program to find the sum of individual digits of the given number.   (06 Marks)

Module – 3

5 a. What is an array? Explain the declaration and initialization of two dimensional arrays with
       example.   (06 Marks)
   b. Write a C-program to sort the given numbers in ascending order using bubble sort technique.
                                                                                          (06 Marks)
   c. Explain any four string manipulation library functions with examples.   (08 Marks)

6 a. What is a function? explain the different types of functions   (06 Marks)
   b. Write a recursive program to find the factorial of a given number.   (10 Marks)
   c. Explain different parameter passing techniques used in C functions.   (04 Marks)

Module – 4

7 a. What is a structure? Explain the syntax of structure declaration with an example. (06 Marks)
   b. Write a C program to maintain an employee information consisting of three fields (empid,
       name, salary) using array of structures.   (10 Marks)
   c. Explain with an example how fscanf( ) and fprintf( ) function is used with the file. (04 Marks)

1 of 2

8   a.   Write a program to copy the content of one file to other file.   (08 Marks)

      b.   What is a file? Explain the different modes in which the file can be opened.   (06 Marks)

      c.   What are command line arguments? Explain its parameters.   (06 Marks)

Module – 5

9   a.   What is pointer? Explain how pointer variables are declared and initialized with example.   (04 Marks)

      b.   Write a C program using pointer to compute the sum, mean and standard deviation of all elements stored in an array of n real numbers.   (10 Marks)

      c.   What is dynamic memory allocation? Explain different dynamic memory allocation.   (06 Marks)

10   a.   What is preprocessor? Explain # define preprocessor directive.   (04 Marks)

      b.   What is data structure? What are primitive and non primitive data types?   (04 Marks)

      c.   Write note on:

        (i) Stack   (ii) Queue   (iii) Linked list   (iv) Tree   (12 Marks)

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CBCS SCHEME

First/Second Semester B.E. Degree Examination, Aug./Sept.2020
Environmental Studies
(COMMON TO ALL BRANCHES)

Time: 2 hrs.]

[Max. Marks: 30

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the thirty questions, each question carries **ONE mark**.

2. Use only **Black ball point pen** for writing / darkening the circles.

3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**

4. Darkening two circles for the same question makes the answer invalid.

5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.

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1. Which of the following conceptual sphere of the environment is having least storage capacity for the matter
   a) Lithosphere
   b) Atmosphere
   c) Hydrosphere
   d) Biosphere

2. Which of the following is a possible produces in an ecosystem.
   a) Animals
   b) Plants
   c) Human beings
   d) Fish

3. The largest reservoir of nitrogen in our planet is
   a) Oceans
   b) Biosphere
   c) Atmosphere
   d) Rivers

4. Which of the following is an example of impact of developmental activities on the hydrosphere?
   a) Air pollution
   b) Soil Pollution
   c) Soil erosion
   d) Water Pollution

5. The removal of carbon dioxide from the earth's atmosphere and the provision of long team storage of carbon in the terrestrial biosphere is known as
   a) Carbon sequestration
   b) Carbon dating
   c) Carbon fixing
   d) Photosynthesis

-A1-

6. India has the world's largest share of which of the following.
   a) Manganese   b) Mica
   c) Copper   d) Diamond

7. Identify the non-renewable source of energy from the following.
   a) Coal   b) Fuel cells
   c) Wind power   d) Wave power

8. Which of the following is a disadvantage of most of the renewable energy sources?
   a) Highly polluting   b) High waste disposal cost
   c) Unreliable supply   d) High running cost.

9. Tendency of pollutants to become concentrated in successive trophic levels is known as
   a) Bioremediation   b) Biomagnification
   c) Biopiracy   d) Biorhythm

10. Which of the following terminologies is not associated with the vertical structure of forest.
    a) Canopy   b) Understory
    c) Forest Floor   d) First Floor.

11. Which if the following is an endemic species of India?
    a) Asian elephant   b) Lion tailed macaque
    c) Whales   d) Panda

12. Which of the following is cause of loss of biodiversity?
    a) Habitat degradation and loss   b) Invasion of non-native species.
    c) Pollution   d) All of these

13. Which of the following is an air pollutant?
    a) Nitrogen   b) Carbon dioxide
    c) Carbon monoxide   d) Oxygen

14. Smog is
    a) a natural phenomenon   b) colourless
    c) combination of smoke and fog   d) All of these

15. Which of the following devices is suitable for removal of gaseous pollutants?
    a) Scrubber   b) Fabric Filter
    c) Cyclone separator   d) Electrostatic precipitator.

16. Air pollution from automobiles can be controlled by fitting
    a) Electrostatic precipitator   b) Cyclone separator
    c) Wet collector   d) Catalytic converter

17. Noise is
    a) loud sound   b) constant sound
    c) high frequency sound   d) unwanted sound

18. When the solid waste consist of large amounts of organic matter and if the moisture content is high, which of the methods of treatment will be ideal.
    a) Composting   b) Palletizing   c) Incineration   d) Recycling

-A2-

19. One of the major reasons for the accumulation of e-waste in recent years is
   a) Lack of technology of recycling
   b) Rapid technology obsolescence
   c) Lack of strict regulations
   d) All of these

20. First of the major environmental protection acts to be promulgated in India was
   a) The water act
   b) The air act
   c) The environment act
   d) Noise pollution rules.

21. Chernobyl Nuclear Disaster occurred in the year
   a) 1984
   b) 1985
   c) 1986
   d) 1987

22. The primary cause of acid rain around the world is
   a) Carbon dioxide
   b) Sulphur dioxide
   c) Carbon monoxide
   d) Ozone

23. The world population in the year 2011 was around
   a) 8 Billion
   b) 6 Billion
   c) 7 Billion
   d) 5 Billion

24. The average life expectancy around the world is currently
   a) changing
   b) stabilizing
   c) not changing
   d) increasing

25. The universal declaration of Human Rights was proclaimed by the UN in the year
   a) 1946
   b) 1948
   c) 1947
   d) 1949

26. World Environmental day is held every year on
   a) June 5th
   b) October 2nd
   c) April 22nd
   d) November 1st

27. Ozone layer thickness is measured in _____
   a) mm
   b) cm
   c) Dobson unit
   d) Db

28. Forests are called as _____
   a) Air purifiers
   b) Earth's lungs
   c) Oxygen reservoir
   d) CO_2 absorbers.

29. Blue baby syndrome is causes due to _____
   a) Manganese
   b) Ozone
   c) Silver
   d) Nitrate

30. World earth's day is annually celebrated on
   a) April 22nd
   b) June 5th
   c) January 1st
   d) May 1st

* * * * *

-A3-

USN ☐☐☐☐☐☐☐☐☐☐

15CIV18/28

Question Paper Version : A

First/Second Semester B.E. Degree Examination, Aug./Sept.2020
Environmental Studies
(COMMON TO ALL BRANCHES)

Time: 2 hrs.]   [Max. Marks: 40

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the fourty questions, each question carries **ONE mark**.

2. Use only **Black ball point pen** for writing / darkening the circles.

3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**

4. Darkening two circles for the same question makes the answer invalid.

5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.

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1. Troposphere is mainly constants of
   a) CO_2 b) H_2
   c) SO_2 d) O_2 and N_2.

2. The word 'Environment' is derived from
   a) Greek   b) French
   c) Spanish   d) Latin.

3. World Environmental day is celebrated on
   a) 5th May   b) Sept 15
   c) 5th June   d) April 22

4. The upper most layer of the atmosphere is called
   a) Thermosphere   b) Stratosphere
   c) Exosphere   d) Mesosphere

5. Mining of ore is done by
   a) Surface mining   b) Sub-surface mining
   c) Tunneling   d) Both (a) and (b).

6. Minamata episode of Japan is due to the Poisoning of
   a) Lead   b) Mercury
   c) Nickel   d) Cadmium

-A1-

7. Hydrological cycle mainly involves
   a) Sun and water
   b) Soil and water
   c) Air and water
   d) Vegetation and water.

8. Water Logging is phenomena is which
   a) Crop patterns are rotated
   b) Soil root zones become saturated due to over irrigation
   c) Erosion of soil
   d) Rock weathering.

9. Percentage of ICC at present on the Globe is
   a) 4%
   b) 12%
   c) 30%
   d) 40%.

10. Mineral meaning
    a) Naturally forming Inorganic substance
    b) Naturally forming organic substance
    c) Both (a) and (b)
    d) None.

11. Carbon content is higher in
    a) Living matter
    b) Soil
    c) Water
    d) Atmosphere.

12. What is the Permissible range of PH for drinking water as per the Indian standard
    a) 6 to 6.5
    b) 7 to 8
    c) 6.5 to 9.5
    d) 6.5 to 8.5.

13. Spring means
    a) Surface water
    b) Atmospheric water
    c) Both (a) and (b)
    d) Ground water.

14. Biomass power generation uses
    a) Crops
    b) Animal Dung
    c) Crop residue
    d) All the above.

15. Electromagnetic radiation can cause
    a) Leukemia
    b) Genetic damage
    c) Cancer
    d) All.

16. Which of the following is highest percentage of calorific value
    a) Anthrasite
    b) Peat
    c) Lignite
    d) Bituminous coal.

17. Chernobyl nuclear disaster took place in the year
    a) 1982
    b) 1986
    c) 1990
    d) 2003.

18. Karnataka is having present forest cover of
    a) 20.19%
    b) 10%
    c) 28%
    d) 30%.

-A2-

19. Middle Portion of the Earth is
   a) Crest   b) Mantle
   c) Core   d) Atmosphere.

20. India is a world leader in the production of
   a) Iron   b) Coal
   c) Mica   d) Copper.

21. Ozone layer exists in
   a) Thermosphere   b) Stratosphere
   c) Exosphere   d) Mesosphere.

22. Volcanic activity is
   a) Natural pollution   b) Manmade pollution
   c) Atmospheric pollution   d) Both (a) and (b).

23. Noise means
   a) Sound pollution   b) High frequency pollution
   c) Un-wanted pollution   d) Both (a) and (b).

24. Environment pollution is due to
   a) Rapid urbanization   b) Deforestation
   c) Afforestation   d) Both (a) and (b).

25. LPG is a mixture of
   a) Propane and Ethane   b) Propane and butane
   c) Ethane and Methane   d) None.

26. Which of the following is considered as an alternate promising fuel
   a) Kerosene   b) CNG
   c) Coal   d) Methane.

27. Wind Energy generation depends on
   a) Direction of wind   b) Atmospheric condition
   c) Velocity of wind   d) Oxygen percentage.

28. Which place in India the Tidal energy has been experimented
   a) Karantaka   b) Tamil Nadu
   c) Maharastra   d) Kerala.

29. Molasses from sugar industry is used to generate
   a) Biodiesel   b) Bioethanol
   c) Biomethanol   d) CO_2.

30. The largest reservoir of Nitrogen in our planet is
   a) Atmosphere   b) Ocean
   c) Biosphere   d) Lithosphere.

-A3-

31. Nitrogen fixing bacteria exists in
    a) Leaf
    b) Stem
    c) Roots
    d) Flower.

32. Global warming could affect
    a) Climate
    b) Increase in sea level
    c) Melting of glaciers
    d) All of these.

33. The Wild Life Protection Act in India was established in the year
    a) 1978
    b) 1986
    c) 1972
    d) 1990.

34. Remote sensing means
    a) Sensing object from distance
    b) Sensing object from the nearest point
    c) Both (a) and (b)
    d) None.

35. GIS means
    a) Geophysical Information system
    b) Geologic Information system
    c) Genetic Information system
    d) Geographic Information system.

36. Ore is a
    a) Metallic element
    b) Non-metallic element
    c) Organic matter
    d) None.

37. Cause of Acid rain is due to
    a) CO_2
    b) CO
    c) SO_2
    d) O_2.

38. The International protocol to protect the ozone layer is
    a) Kyoto protocol
    b) Vienna protocol
    c) Montreal protocol
    d) None.

39. Effective solid and liquid waste management is
    a) Dumping
    b) Incineration
    c) Recycling
    d) Both (a) and (b).

40. Which of the following is the highest percentage of green hergegas?
    a) Methane
    b) CFC
    c) H_2O
    d) Water.

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-A4-

USN

First/Second Semester B.E Degree Examination, Aug./Sept.2020
Environmental Studies
(COMMON TO ALL BRANCHES)

Time: 2 hrs.]   [Max. Marks: 50

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the fifty questions, each question carries **ONE mark**.

2. Use only **Black ball point pen** for writing / darkening the circles.

3. For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.

4. Darkening two circles for the same question makes the answer invalid.

5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.

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1. The objective of environmental education is
   a) Raise consciousness about environmental conditions
   b) To teach environmentally appropriate behavior
   c) Create an environmental ethic
   d) All of these

2. Atmosphere consists of 79 percent Nitrogen and 21 percent Oxygen by
   a) volume   b) weight   c) density   d) all of these

3. Which of the following is a biotic component of an ecosystem?
   a) Fungi   b) Solar light   c) Temperature   d) Humidity

4. The largest sink (pollutant receptor) of the planet is
   a) atmosphere   b) hydrosphere   c) lithosphere   d) biosphere

5. Biosphere is the
   a) envelope of gases surrounding the earth
   b) the outermost layer of earth's crust
   c) the thin layer of organic matter containing all living things on the surface of the earth
   d) none of these

6. Which of the following is not a renewable resource?
   a) coal   b) wind power
   c) geothermal energy   d) dendrothermal energy

7. The main causes of deforestation are
   a) overgrazing and agriculture   b) industry and other developmental projects
   c) timber extraction   d) all of these

8. The main purpose of dam construction is
   a) irrigation   b) flood control
   c) hydroelectricity   d) provide water to industry

9. _____ is the perpetual source of energy.
   a) Nuclear reactors   b) Hydropower   c) Solar energy   d) none of these

10. Famine is mainly the result of
    a) deforestation   b) overuse of surface water
    c) a prolonged drought   d) all of these

11. Burning of biomass produces
    a) thermal energy   b) bio-energy   c) wind energy   d) hydropower

12. India has second largest reserve of _____ after Brazel.
    a) iron ore   b) bauxite   c) coal   d) copper

13. The study of interaction between the living species and the environment is called
    a) biology   b) antology   c) ecology   d) zoology

14. Ecosystem consist of
    a) biotic components only   b) only abiotic component
    c) both biotic and abiotic components   d) none of these

15. The sequence of organisms which feed on one another for their survival known as
    a) passage of nutrients from one organism to other
    b) food chain
    c) trophic level
    d) biodiversity

16. The importance of ecosystem lies in
    a) transfer of food   b) flow of energy   c) cycling of materials   d) both b and c

17. The main source of energy in an eco system is
    a) sugar stored in plants   b) solar energy
    c) heat released during transpiration   d) heat released during fermentation

18. A ford chain consists of
    a) producers, consumers, decomposers   b) producers, carnivores, decomposers
    c) primary producers, herbivores, carnivores   d) producers, primary consumers, carnivores

19. Sustainable development means
    a) meeting present needs without compromising on the future needs
    b) progress in human well beings
    c) balance between human needs and the ability of earth to provide the resources
    d) all of these

20. Mining means
    a) to conserve and preserve minerals
    b) to check pollution due to mineral resources
    c) to extract mineral and ores
    d) none of these

21. E.I.A. can be expanded as
    a) Environment and Industrial Act
    b) Environment and Impact Activities
    c) Environment Impact Assessment
    d) Environmentally Important Activity

22. 'Earth Day' is held every year on
    a) June 5th b) November 23rd c) April 22nd d) January 26th

23. Which of the following is the most environmental friendly agriculture practice?
    a) Using chemical fertilizers
    b) Using insecticide
    c) Organic farming
    d) None of these

24. Bio-remediation means the removal of contaminants from
    a) soil
    b) wastewater
    c) groundwater
    d) both soil and groundwater

25. Deforestation means
    a) preservation of forests
    b) destruction of forests
    c) monocrop cultivation
    d) agriculture

26. Major causes of forestation are
    a) shifting cultivation
    b) fuel requirements
    c) raw materials for industries
    d) all of these

27. Out of the following nutrients in fertilizer, which one causes minimum water pollution?
    a) Nitrogen   b) phosphorous   c) potassium   d) organic matter

28. What is the permissible range of pH for drinking water as per the Indian Standards?
    a) 6 to 9   b) 6.5 to 7.5   c) 6 to 8.5   d) 6.5 to 8.5

29. The movement of carbon between _____ is called carbon cycle.
    a) atmosphere and biosphere
    b) atmosphere and hydrosphere
    c) geosphere and atmosphere
    d) biosphere, atmosphere, hydrosphere and geosphere

30. Mineral resources are
    a) renewable
    b) available in plenty
    c) non renewable
    d) equally distributed

31. The oceans are the largest storage of water on earth containing
    a) 95% of earths water
    b) 85% of earths water
    c) 97% of earths water
    d) 75% of earths water

32. The ground water depends on
    a) amount of rain fall
    b) geological formations
    c) run off
    d) all of these

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33. The required iron content in drinking water as specified by BIS is
    a) 300 mg/ℓ   b) 30 mg/ℓ   c) 0.3 mg/ℓ   d) 3 mg/ℓ

34. Which of the following is considered as on alternate fuel?
    a) CNG   b) Kerosene   c) Coal   d) Petrol

35. Oil and gas are preferred because of
    a) easy transportation   b) cheap
    c) strong smell   d) all of these

36. Wind energy generation depends on
    a) direction of wind   b) velocity of wind
    c) humidity   d) precipitation

37. Which of the following is a major source of thermal pollution of water bodies?
    a) sewage treatment plants   b) thermal power plants
    c) solid waste disposal   d) all of these

38. Biogas is gaseous fuel composed mainly of
    a) methane and carbon dioxide   b) methane and hydrogen sulphide
    c) methane and carbon monoxide   d) none of these

39. Molasses from sugar industry is used to generate
    a) biodiesel   b) hydrogen   c) bioethanol   d) biomethanol

40. Air pollution from automobiles can be controlled by fitting
    a) electrostatic precipitator   b) wet scrubber
    c) catalytic converter   d) all of these

41. Definition of noise is
    a) Loud sound   b) Unwanted sound
    c) Constant sound   d) Sound of high frequency

42. Which of the following is major cause of soil pollution?
    a) Accident involving vehicles that are transporting waste materials
    b) Pesticides and chemical fertilizers
    c) Improper solid waste disposal
    d) all of these

43. "Minamata Disease" is caused due to
    a) Lead   b) Arsenic   c) Mercury   d) Cadmium

44. Petroleum based vehicles emit traces of
    a) CO and NOx   b) SPM   c) Aldehydes   d) CH_4

45. Increase in asthma attacks has been linked to high levels of
    a) Nitrogen   b) Oxygen
    c) Air borne dust particles   d) all of these

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46. Which of the following is the facility that the urban people enjoy?
    a) Better communication access
    b) Better quality of air
    c) Large land at cheap rates
    d) none of these

47. Which of the following is the ill effect of urbanization?
    a) Decrease in agricultural land
    b) Loss of greenery
    c) Loss of water bodies
    d) All of these

48. The average life expectancy around the world is currently.
    a) decreasing
    b) increasing
    c) not changing
    d) stabilizing

49. The major objectives of family welfare programs in India is
    a) disease control
    b) population growth rate control
    c) employment generation
    d) none of these

50. Ozone hole was first discovered over
    a) Arctic
    b) Antarctica
    c) Tropical region
    d) Africa

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USN ☐☐☐☐☐☐☐☐☐☐   Question Paper Version : A

Second Semester B.E Degree Examination, Aug./Sept.2020
Technical English – II
(COMMON TO ALL BRANCHES)

Time: 3 hrs.]   [Max. Marks: 100

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the hundred questions, each question carries **ONE mark**.

2. Use only **Black ball point pen** for writing / darkening the circles.

3. For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.

4. Darkening two circles for the same question makes the answer invalid.

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Choose the appropriate verb that agrees with the subject: (Q.No.1 to Q.No.4)

1. Which of these is the best way to establish a proper rapport with auidence?
   a) Pointing a finger   b) Waving your hands   c) Making eye contact   d) Standing erect.

2. In an oral presentation, the speaker should not _____.
   a) panic   b) pause   c) make eye contact   d) inspire.

3. Which of these do not provide free E-mail?
   a) Hotmail   b) Radiff   c) WhatsApp   d) Yahoo.

4. Which of the following stages of an interview should take the largest time to complete?
   a) Greeting   b) Resume review   c) Questions and answers   d) Closing.

Choose the correct pronoun that agrees with the noun: (Q.No.5 to Q.No.7)

5. Which type of interview questions are most meaningful to employers, who want to assess how you will perform on the job?
   a) Traditional   b) Screening   c) Behavioral   d) All three.

6. What is typically NOT considered part of a job compensation package?
   a) Salary   b) Funds to pay taxes   c) Incentive pay   d) Benefits.

7. Which of these are vital for any organization?
   a) Debates   b) Group discussion   c) Speeches   d) Arguments.

Version A : Page 1 of 8

Fill in the blanks with appropriate adjectives : (Q.No.8 to Q.No.10)

8. Which of these factors do not enhance listening skills?
    a) Attention   b) Clear perception   c) Fakeness   d) Frankness.

9. In a formal letter what is the name given to the address and date at the top?
    a) Starting   b) Closing   c) Body   d) Heading.

10. If you didn't know the recipient's name, how would you address the person?
    a) Dear Mr./Mrs.   b) My dear   c) Hello   d) Dear Sir or Dear Madam.

Choose the appropriate adverbs: (Q.No.11 to Q.No.13)

11. A technical report establishes a _____.
    a) illogical conclusion   b) logical conclusion
    c) personal prejudice   d) misplaced learning.

12. Which of these must never be a basis for a technical report?
    a) Facts   b) Tests   c) Personal prejudices   d) Experiments.

13. Generally, when asked about long term goals, candidates should talk about where they want to be professionally in how many years?
    a) 3 years   b) 5 years   c) 10 years   d) 15 years.

Choose the right form of the verb: (Q.No.14 to Q.No.16)

14. Which of the following is NOT a typical employment test mentioned in the chapter?
    a) Drug   b) Aptitude   c) Polygraph   d) Personality.

15. The final activity in the interview process is
    a) The handshake   b) The follow-up   c) The negotiation   d) The thank you note.

16. When negotiating, what should be addressed first?
    a) Vacation   b) Benefits   c) Perks   d) Salary.

Select the correct tense form of the verb: (Q.No.17 to Q.No.18)

17. What is variety of questions that can be asked by the candidate?
    a) General   b) Defining   c) Controlling   d) All three.

18. A group discussion must advance.
    a) truth   b) dishonesty   c) personal glory   d) arguments.

Choose the correct article from the given options: (Q.No.19 to Q.No.21)

19. In a group discussion, one must communicate with
    a) Hostility   b) Ignorance   c) knowledge   d) long sentences.

20. Which of these must be avoided in a group discussion?
    a) Speaking facts   b) Asking questions   c) Speaking fast   d) Speaking with clarity.

21. Which of these qualities are important in a group discussion?
    a) Ignorance   b) Aggressiveness   c) Hostility   d) Emotional stability.

Select the correct preposition from the given option to complete the gap :
(Q.No.22 to Q.No.25)

22. In a group discussion, we should be
    a) Assertive   b) dominating   c) subjective   d) ignorant.

23. Which is not a part to a business letter?
    a) Salutation   b) Inside Address   c) Indenting   d) Signature.

24. The main point is written in which part of a formal letter?
    a) Post script   b) Closing   c) Opening   d) Body.

25. How would you address the recipient of an informal letter?
    a) Dear Mr.   b) My dear   c) Dear Sir/Madam   d) Hallo Sir/Madam.

Choose the right conjunction from the given options to complete the gap :
(Q.No.26 to Q.No.28)

26. If you know the recipient's name, how would you close the letter?
    a) With love   b) Yours sincerely   c) Yours faithfully   d) Affectionately yours.

27. How many times will your name appear on a business letter?
    a) 3   b) 2   c) 1   d) 4.

28. What style format is the business letter written in?
    a) Center Format   b) Left Format   c) Block Format   d) Square Format.

Select the correct meaning of the underlined idiom : (Q.No.29 to Q.No.31)

29. Summary of an effective technical document, included :
    a) examples   b) figures   c) two-three main ideas   d) briefing.

30. A list of illustrations, included, figures and tables, placed on :
    a) abstract vision   b) title page   c) table of contents   d) bottom line.

31. To which of these people is the report not very crucial?
    a) Engineers   b) Scientists   c) Teachers   d) Business executives.

Choose the appropriate phrases from the given options to fill in the blanks : (Q.No.32 to Q.No.33)

32. Which of these is NOT a part of a report?
    a) Front matter   b) Gender   c) Front cover   d) Title page.

33. Which of these must be avoided in a technical report?
    a) Facts   b) Logical conclusion
    c) Objective evaluation   d) Subjective evaluation.

Select the correct gender of the underlined words : (Q.No.34 to Q.No.36)

34. Which of these is NOT a parameter in a report?
    a) Age of writer
    b) Extent of information
    c) Quality information
    d) Ability to acquire information.

35. The application letter and the resume perform _____.
    a) 2 different tasks
    b) overlapping tasks
    c) the same tasks
    d) 2 opposite tasks.

36. The main goal of your cover letter is _____.
    a) Getting the job
    b) Getting an interview
    c) Writing an application
    d) Send CV.

Choose the correct word which indicates the right option to complete the gap: (Q.No.37 to Q.No.38)

37. Its best to address your cover letter to _____.
    a) The company
    b) The department
    c) A specific person
    d) Unknown person.

38. Would you submit a resume without a cover letter?
    a) Sure, if it's good enough
    b) of cause not !
    c) not necessary
    d) not in practice.

39. Letters that please the receiver are called _____.
    a) good news letter's
    b) Routine letters
    c) "yes" letters
    d) invitation letters.

40. A summary placed at the beginning of the CV acts as a _____.
    a) Preface
    b) Synopsis
    c) Statement of objective
    d) Letter recommendation.

41. What's the ideal cover letter length?
    a) one paragraph
    b) one page
    c) two paragraphs
    d) more than two pages.

42. Proof reading your cover letter is _____.
    a) Essential
    b) Not that big a deal for non-writing jobs
    c) Not essential
    d) boring

43. A curriculum vitae (CV) is a _____ word.
    a) French
    b) German
    c) Latin
    d) American.

44. Which of these is NOT mentioned in a job description CV?
    a) Name
    b) Address
    c) Nationality
    d) Education.

45. Which of these is NOT mentioned in a bio-data?
    a) Name
    b) Address
    c) Education
    d) Career aim.

46. Resume is a _____ word.
    a) French
    b) German
    c) Latin
    d) American.

47. Two singular subjects connected by or, neither/or neither/nor require a _____ verb.
    a) plural
    b) singular
    c) neutral
    d) pronoun.

48. Pair Nouns take _____ verbs.
    a) plural
    b) singular
    c) neutral
    d) pronoun

49. The pronoun <u>each</u> is singular and requires _____ verbs.
    a) plural   b) singular   c) neutral   d) pronoun.

50. The pronoun <u>everyday</u> is singular and requires _____ verbs.
    a) plural   b) singular   c) neutral   d) pronoun.

51. This singer, along with a few others, _____ the harmonica on stage.
    a) play   b) is playing   c) are playing   d) plays.

52. Each of the dancers _____ brilliantly.
    a) twirl   b) twirls   c) is twirling   d) are twirling.

53. Either Maggie or Sadie offered _____ help with proofreading.
    a) their   b) his   c) they   d) her.

Choose the pair of word / phrase from the options given that best expresses a similar relationship to that of the given pair : (Q.No.54 to Q.No.56)

54. Either Cassie or Marie _____ the employees this afternoon.
    a) is paying   b) pay   c) pays   d) are paying.

55. Please allow John and _____ to go to the movies.
    a) I   b) me   c) you   d) it.

56. He is as good a player as _____.
    a) me   b) I   c) you   d) it.

Choose the correct form of Active/Passive voice of the following sentences:
(Q.No.57 to Q.No.61)

57. Which verb correctly completes the sentence?
    My dad _____ me with my home work.
    a) help   b) helped   c) helping   d) being helped.

58. Which verb correctly completes the sentence? We _____ last night.
    a) go   b) gone   c) went   d) going.

59. Everyone of the shirts _____ a green collar.
    a) has   b) have   c) having   d) had

60. The famous singer and composer _____ arrived.
    a) have   b) having   c) had   d) has.

61. Gold, as well as platinum _____ recently risen in price.
    a) have   b) has   c) having   d) had.

Select the correct form of Reported Speech of the following sentences:
(Q.No.62 to Q.No.67)

62. One of the books _____ been missing.
    a) had   b) have   c) has   d) having.

63. He does not have _____ friends.
    a) more   b) much   c) many   d) little.

64. His old father hasn't got _____ hair on his head.
    a) more   b) much   c) many   d) little.

65. I was not well so I didn't get _____ sleep last night.
    a) more   b) much   c) many   d) little.

66. Please tell that how _____ fruit do you eat in an average day?
    a) more   b) much   c) many   d) little.

67. I find myself _____ on sunny days as opposed to rainy days.
    a) chippiest   b) chippier   c) more chipper   d) most chipper.

Choose the part of the sentences in which grammatical error is noticed :
(Q.No.68 to Q.No.71)

68. Chuck pops his gum _____ than Bucky.
    a) most often   b) more often   c) often   d) oftener.

69. That whale is _____ than this dingo.
    a) big   b) more big   c) biggest   d) bigger.

70. I'm positive that I am _____ than my little brother.
    a) more intelligent   b) more intelligenter   c) most intelligent   d) intelligenter.

71. Our crazy uncle Pete is the _____ fisherman in all of Oregon.
    a) talenteder   b) talentedest   c) most talented   d) more talented.

Choose the correct word to fill the gaps in the following : (Q.No.72 to Q.No.73)

72. Choose the correct modifiers :
    a) Entering the room, the light was off
    b) Entering the room, I found the light off
    c) Entering the room, the light was found off by me
    d) Entering the room, the room was found dark.

73. He is writing the book, (Active) The book _____ written by him.(Passive)
    a) has been   b) is being   c) is   d) was.

74. Why did you oppose her? (Active) why _____ by you? (Passive)
    a) She opposed   b) was she opposed   c) is she opposed   d) she opposes.

75. Rahul will pass the message (Active). The message _____ by Rahul (Passive).
    a) will passed   b) would be passed   c) will pass   d) will be passed

76. Let her watch the movie (Active), Let the movie ___ by her. (Passive)
    a) been watched   b) being watched   c) watch   d) be watched.

77. Raj said, "I'm teaching English online". (Direct Speech), Raj _____ teaching English online. (Indirect speech)
   a) told I am   b) asked me if I was   c) said that he was   d) whether I had seen last.

78. Ram remarked "what a wonderful day!" (Direct speech) Ram _____ a wonderful day. (Indirect speech)
   a) asked if it was   b) said what   c) asked what   d) exclaimed that it was.

79. I said to him, "why don't you work hard?" (Direct) I asked him why _____ hard (Indirect speech).
   a) didn't you work   b) he didn't work   c) he wouldn't work   d) he wasn't working.

80. He said to her, "what a hot day!" (Direct speech)
   a) He said that it was a hot day   b) He exclaimed that it was a hot day
   c) He told her that it was a hot day   d) He exclaimed sorrowfully that it was hot day.

81. 'Boat' is related to 'Oar' in the same way as 'Bicycle' is related to _____.
   a) Wheel   b) Paddle   c) Seat   d) Road.

82. 'Fire' is related to 'Ashes' in the same way as 'Explosion' is related to
   a) Debris   b) Explosive   c) Sound   d) Flame.

83. Adult : Baby : : Flower : ?
   a) Seed   b) Bud   c) Fruit   d) Butterfly.

84. Love : Friend : : Hate : ?
   a) Hatred   b) Companion   c) Enemy   d) None of these.

85. Fox : Chicken
   a) rat : mouse   b) dog : cat   c) rabbit : hen   d) cat : mouse.

86. Pebble : boulder
   a) feather : bird   b) fish : elephant   c) river : rapids   d) pond : ocean.

87. Mountain : Height : Climber
   a) Land : Farmer : Crop   b) Sea : Depth : Diver
   c) River : Length : Water   d) College : Building : Student.

88. Choose the answer that names the part of speech of the capitalized word in the following sentences:
   Have you heard the GOOD news?
   a) verb   b) adverb   c) pronoun   d) adjective.

89. The cat knocked a vase OFF the shelf.
   a) verb   b) preposition   c) adverb   d) pronoun.

90. EVERYONE met at the field house.
   a) pronoun   b) noun   c) adjective   d) adverb.

91. We _____ love and respect our parents and teachers.
    a) would   b) should   c) could   d) ought.

92. She _____ read when she was four
    a) could   b) would   c) can   d) may.

93. Student's _____ to obey their teachers.
    a) Ought   b) must   c) need   d) used

94. We _____ not hurry, we have got plenty of time.
    a) need   b) must   c) dare   d) ought.

95. If we'd more time we _____ finished it.
    a) could   b) cold have   c) would have   d) must have.

Close Test : Fill in the blanks in the following paragraph with words out of given respective options.

It is a well-established (96) that some people have "mathematical mind" while other do not. (97), the myth is (98) to mathematics ; you never hear, for example, that someone with a historical mind. It is a general belief (99) as that if we do not learn something it is because we cannot. In fact mathematical ideas that are difficult at an early age are much easier to (100) a few years later, if we give them another try.

96. a) myth   b) fable   c) legend   d) story.

97. a) Formidably   b) Dauntingly   c) Interestingly   d) Interest

98. a) Limited   b) restricted   c) perpetuated   d) limit

99. a) amongst   b) against   c) with   d) of

100. a) derive   b) comprehend   c) deduce   d) obtain.

* * * * *