Bangabandhu Sheikh Mujibur Rahman Science and Technology University
Department of Computer Science & Engineering
1st Year 1st Semester B.Sc. Engg. Final Examination-2019

Course No: CSE103 **Course Title: Structure programming Language**
Full Marks: 60 **Time:** 3 hours

N.B.
i) Answer any **FIVE** questions out of **EIGHT**.
ii) All questions are of equal values.

Q.1 (a) Draw flow chart of "How source code turns into machine code". 3
(b) What is identifier? Write rules of declaring identifier. 3
(c) What are the differences between 3
i. compiler and interpreter ii. constants and variables
(d) Why preprocessor directive is used in C program? 1

Q.2 (a) Write a C program that will read an integer from the user and print the sum of its digits in reverse order. 4
Sample Input : 5137
Sample Output : 61
Explanation to sample: 16= 5+1+3+7
(b) Write a function to concatenate three strings. 3
Sample input: Structured
Programming
Language
Sample output: Structured Programming Language
(c) Write the difference between following terms 3
i. while and do while ii. == and = iii. ++count and Count++

Q.3 (a) Write the basic structure for ***if***and ***if-else***statement with example. 3
(b) Write any 10 keywords of C programming language. 2
(c) How you declare structure variables with example? 2
(d) Find out the output or error of the following codes 3

i.
```
#include<stdio.h>
void display(int*, int*);
int main(){
int i=5, j=2;
fun(&i, &j);
printf("%d, %d", i, j);
 return 0;
}
void display(int *i, int *j){
*i = *i**i;
*j = *j**j;
}
```

ii.
```
#include<stdio.h>
int main(){
 struct  student{
 char *n;
 int age;
};
struct student s1 = {"Rakib", 18};
struct student s2 = s1;
strupr(s2.n);
printf("%s\n", s1.n);
return 0;
}
```

Q.4 (a) Write a C program to print a pyramid of stars with N rows where N is an odd number. Value of N takes as input. 4
Sample Input : Enter number of rows : 5
Sample Output :

```
*
**
***
*****
******
```

(b) What is the difference between entry control loop and exit control loop? Describe for statement and do statement? 4
(c) Find error, if any, in the following looping segment. Assume that all the variables have been declared and assigned values. 2

```
name = 0;
do{
   name = name + 1;
   printf("CSE\n");
}
while(name=1)
```

Q.5 (a) Read a string of no more than 50 characters. Now write a c program to display the frequency of vowel. 4

Sample input: I like programming

Sample output: a=1, e=1, i=3, o=1, u=0.

(b) What do you mean by function overloading? 2

(c) Explain the following terms with example 2

i. Break ii. Goto

(d) The variables Count, Price and City have the following values: 2

Count=3205

Price=276.8

City=Mexico

Show the exact output that the following output statements will produce:

i. printf("%3d %f", Count, Price); ii. printf("%d %3.2f", Count, Price);

iii. printf("%-10d %s", Count, City); iv. printf("%d", City);

Q.6 (a) What is an array? How array is declared C program?. 2

(b) Write a C program to display the following series: 4

3 4 7 11 18 29 47 .....

(c) Create a C structure named **Cricket** to hold the following information's: 4

A Player name : maximum 30 characters long

A team name: maximum 50 characters long

Batting average : a floating point number

Using cricket, declare an array player with 11 elements and write a program to read the information about all the players and print the players name with their batting average.

Q.7 (a) i. What do you mean by int arr[5]? 4

ii. What are the first and last elements of it?

iii. What will happen when you do:

```
arr[5] = {0};
```

(b) How do expression statements differ from compound statements? Summarize the rules associated with it. 4

(c) How many times the body of the loop will be executed for the following loop? 2

```
m=1;
do{
  m = m+2;
}while(m<10)
```

Q.8 (a) Suppose two files INPUT1 and INPUT2 contain sorted lists of integers. Write a program to produce a third file OUTPUT which holds a single sorted, merged list of these two files. 5

(b) Describe the use and limitations of the functions GETC() and PUTC(). What is the significance of EOF? 3

(c) If x and y have been declared as integers and m1 and m2 as pointers to integers, then state error, if any, in the following statements. 2

i. m1=&x; ii. m2=y; iii. *m1=&y; iv. m2= &*&x; v. x=m2-m1; vi. m1=&m2

Bangabandhu Sheikh Mujibur Rahman Science and Technology University, Gopalganj
Department of computer Science & Engineering
1st Year 1st Semester B.Sc. Engg. Examination-2019

Course No: ENG105 Course Title: Technical English Language

Full Marks: 60 Times: 3 Hours

N.B.:
Answer any SIX questions.
All questions are of equal values

1. Read the passage and answer the questions that follow 5+5

THE SCIENTIFIC METHOD

A

'Hypotheses,' said Medawar in 1964, 'are imaginative and inspirational in character'; they are '**adventures** of the mind'. He was arguing in favour of the position taken by Karl Popper in The Logic of Scientific Discovery (1972, 3rd edition) that the nature of scientific method is hypothetico-deductive and not, as is generally believed, inductive.

B

It is essential that you, as an intending researcher, understand the difference between these two interpretations of the research process so that you do not become discouraged or begin to suffer from a feeling of 'cheating' or not going about it the right way.

C

The myth of scientific method is that it is inductive: that the formulation of scientific theory starts with the basic, raw evidence of the senses - simple, unbiased, unprejudiced observation. Out of these sensory data - commonly referred to as 'facts' — generalisations will form. The myth is that from a disorderly array of factual information an orderly, relevant theory will somehow emerge. However, the starting point of induction is an impossible one.

D

There is no such thing as an unbiased observation. Every act of observation we make is a function of what we have seen or otherwise experienced in the past. All scientific work of an experimental or exploratory nature starts with some expectation about the outcome. This expectation is a hypothesis. Hypotheses provide the initiative and incentive for the inquiry and **influence** the method. It is in the light of an **expectation** that some observations are held to be relevant and some irrelevant, that one methodology is chosen and others discarded, that some experiments are conducted and others are not. Where is your naive, pure and objective researcher now?

E

Hypotheses arise by guesswork, or by inspiration, but having been formulated they can and must be tested rigorously, using the appropriate methodology. If the predictions you make as a result of deducing certain consequences from your hypothesis are not shown to be correct then you discard or modify your hypothesis. If the predictions turn out to be correct then your hypothesis has been supported and may be retained until such time as some further test shows it not to be **correct**. Once you have arrived at your hypothesis, which is a product of your imagination, you then proceed to a strictly logical and rigorous process, based upon deductive **argument** — hence the term 'hypothetico-deductive'.

F

So don't worry if you have some idea of what your results will tell you before you even begin to collect data; there are no scientists in existence who really wait until they have all the evidence in front of them before they try to work out what it might possibly mean. The closest we ever get to this situation is when something happens by accident; but even then the researcher has to formulate a hypothesis to be tested before being sure that, for example, a mould might prove to be a successful antidote to bacterial infection.

G

The myth of scientific method is not only that it is **inductive** (which we have seen is incorrect) but also that the hypothetico-deductive method proceeds in a step-by-step, inevitable fashion. The hypothetico-deductive method describes the logical approach to much research work, but it does not describe the psychological behaviour that brings it about. This is much more holistic — involving guesses, reworkings, corrections, blind alleys and above all inspiration, in the deductive as well as the hypothetic component -than is immediately apparent from reading the final thesis or published papers. These have been, quite properly, organised into a more serial, logical order so that the worth of the output may be evaluated independently of the behavioural processes by which it was obtained. It is the difference, for example between the academic papers with which Crick and Watson demonstrated the structure of the DNA molecule and the fascinating book The Double Helix in which Watson (1968) described how they did it. From this point of view, '**scientific** method' may more usefully be thought of as a way of writing up research rather than as a way of carrying it out.

a) The reading passage has seven paragraphs **A-G**.
Choose the most suitable headings for paragraphs **C-G** from the list of headings below.

List of Headings

i	The Crick and Watson approach to research
ii	Antidotes to bacterial infection
iii	The testing of hypotheses
iv	Explaining the inductive method
v	Anticipating results before data is collected
vi	How research is done and how it is reported
vii	The role of hypotheses in scientific research
viii	Deducing the consequences of hypotheses
ix	Karl Popper's claim that the scientific method is hypothetico-deductive
x	The unbiased researcher

Write the appropriate numbers **i-x** beside C-G on your answer sheet.

Passage C -

Passage D -

Passage E -

Passage F -

Passage G –

b) Write a summary of the passage in five sentences.

2. a) Change the following words as directed and make sentences with the words: 5
i) Happiness (adjective), ii) Throughout (adverb), iii) Call (Verb), iv) Pen (Verb), v) Milk (verb)

b) Write whether the statements are right or wrong. If wrong, give correct answers. 5
i. He goes to Dhaka yesterday.
ii. He lacks in experience.
iii. You had better going home.
iv. The train is approaching to Boston.
v. Summarize the article briefly.

3. a). Transcribe the following words by using phonetic symbols: (Any Five) 5
Campus, student, assignment, Lab room, semester, teacher, Friday

b). Complete the following sentences: 5
i. Would you mind……..
ii. I would build a splendid building if …….
iii. While he was walking along the road, …….
iv. I went to bed after I…….
v. You talk as if you …….

4. Fill in the blanks and rewrite the following passage: 10

Remembering Al Mahmud's literary contribution

Al Mahmud was one of the most iconic _____(poet) in Bengali literature. In his early youth, he _____(enter) Dhaka city with _____(a) broken suitcase. The same man, through his masterful poetry, took us to a wonderful journey of imagery. Conscious readers of poetry _____(watch) his magic over time, and _____(be) repeatedly spellbound. Al Mahmud was one of those poets who _____(contribute) a lot to the progress of modern Bengali poetry.

Lok Lokantor, Kaler Kolos, Sonali Kabin, Mayabi Porda Duley Otho, Adristabadider Rannabanna, Bokhtiarer Ghora, Arabya Rojonir Rajhas and *Doel o Doyita* _____(are) some of his remarkable poetic works. However, the book which was accepted by critics and connoisseurs as a classic piece was his *Sonali Kabin.*

Al Mahmud entered into the realm of poetry following the _____(style) of Jasimuddin and Jibanananda Das. Jasimuddin _____(unique) depicted the picture of rustic Bengal in his poems. People of the agro-based Bengali Muslim society first saw _____(his) identity in literature through Jasimuddin's work. Their sorrow, sufferings, poverty, hunger and love, depicted vividly in his poems, attracted not only the Bengali society, but also the entire world.

5. Write a news report on any one of the following topics: 10

a) There are many intentional man-made causes of natural disaster which could be managed in a proper way in due time. Suppose you are a reporter of *The Daily Star*. Write a report on this.

b) Lack of appreciation of extra-curricular activities is a cause of depression among new generation. Suppose you are a reporter of *The Showbiz* magazine. Write a report on this.

6. "Now-a-days media is playing a vital role in creating social consciousness but in doing so it is also a cause of social and mental insecurity of mass people." To what extent do you agree or disagree with above topic. Justify your position in at least 350 words. 10

7. Northern University of Business and Technology Khulna is looking for some lecturers for Computer Science and Engineering Department. Interested candidates are requested to send their CV along with a cover letter in English to the Registrar, Northern University of Business and Technology Khulna (NUBTK), Akunjee Tower, Shibbari Mor, Khulna by 30 May, 2019.*(Job Source: The Daily Star, Published on April 26, 2019)* 10

8. Human beings are originally wild, barbarous and savage. They wear a social facade to subdue these characteristics. They pretend to be good enough to maintain social status. What is your view? 10

Bangabandhu Sheikh Mujibur Rahman Science and Technology University
Department of Computer Science & Engineering
1st Year 1st Semester B.Sc. Engineering Examination-2019

Course No: **EEE105** Course Title: **Electrical Circuit Analysis**
Full Marks: 60 Time: 03 hours

N.B. i) Answer any **SIX** questions. ii) All questions are of equal values.

1. (a) State Kirchoff's Voltage Law (KVL) and Current Law (KCL). 2
   (b) Determine the voltage V_o in the circuit of figure for Q. no. 1(b). 4

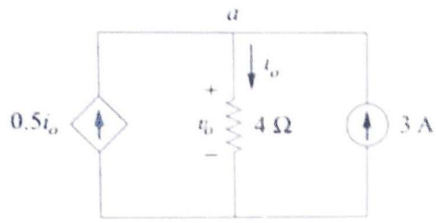


Figure for Q. no. 1(b).

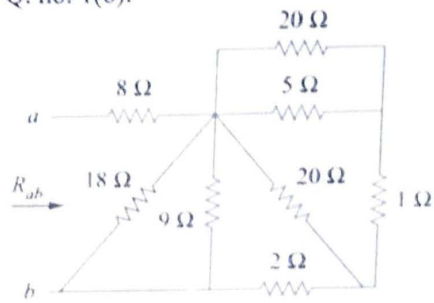


Figure for Q. no. 1(c).

   (c) Calculate the equivalent resistance across a-b of figure for Q. no. 1(c). 4

2. (a) Find $v_0(t)$ in the circuit shown in figure for Q.no. 2(a) 5

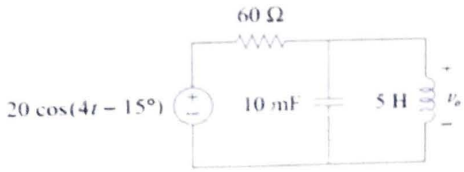


Figure for Q. no. 2(a)

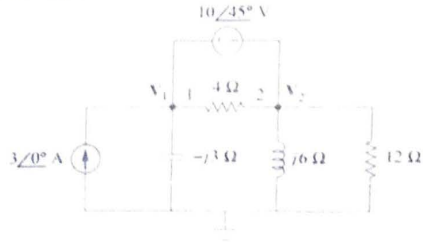
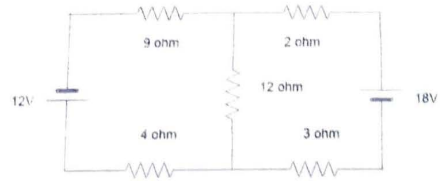


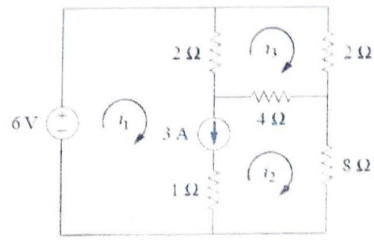
Figure for Q. no. 2(b)

   (b) Calculate V_1 and V_2 in the circuit shown in figure for Q. no. 2(b) using Nodal Analysis. 5

3. (a) (a) Calculate the current flowing through the 12 Ω resistor 4



   (b) Determine i1, i2, and I3 using mesh analysis in following figure 6

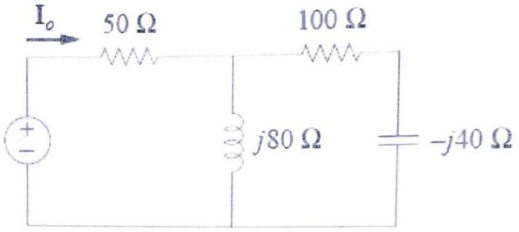


4. (a) (a) Transform these sinusoids to phasor and find $\frac{V}{I}$ as phasor

i. V=10 cos(100t-40)

ii. I=-5 sin(100t+30)

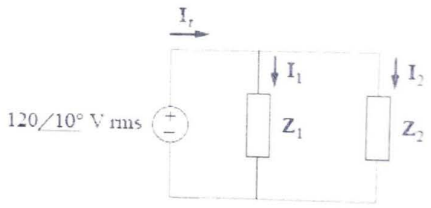
(b) Find I_0 of the following circuit considering the value of voltage source as 100 sin(100t) 6



5. (a) In the following figure Z1= $30\sqrt{3} - 30i$ and Z2= $20\sqrt{2} + 20\sqrt{2}i$. With proper unit find the total 6

i. Real Power iii. Apparent Power

ii. Reactive Power iv. Power factor



(b) Find the value of parallel capacitance needed to correct a load of 100 KVA at 0.8 lagging pf to unity pf. Consider that the load is supplied by a 220-V (rms), 50-Hz line. 4

6. (a) For a series RLC circuit derive the equation of resonance frequency, cut-off frequencies and the Q. 6

(b) Find the resonance frequency, cutoff frequencies, and Q factor of a series RLC circuit, where the value of R= 10Ω, L= 5 mH and C= 2 μF. 4

7. (a) Show that, for wye connected load $V_L = \sqrt{3}V_p$ and $I_L = I_P$, for delta connected load $V_L = V_p$ and $I_L = \sqrt{3}I_P$. Also show that real power $P = \sqrt{3}V_L I_L cos\theta$ for both connections. 6

(b) For a Δ connected balanced 3φ load, line voltage is 220 V rms and per phase impedance is 6+j8 Ω. Find phase voltage, phase current, line current and total reactive power. 4

8. (a) Define i) Low pass ii) High pass iii) Band pass iv) Band stop filter graphically 3

(b) Draw High pass filter and Band pass filter circuit using passive elements. 3

(c) 4

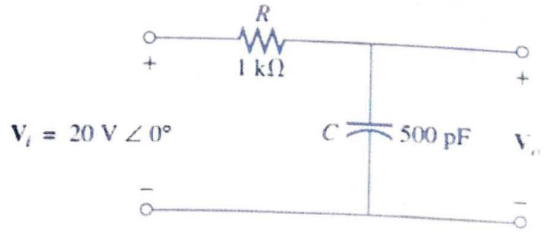


Figure for Q. no.8(c)

i. Sketch the output voltage V_o versus frequency for the low-pass R-C filter shown in figure for Q.no.8(c).

ii. Determine the voltage V_o at f=100 kHz and 1 MHz.

Bangabandhu Sheikh Mujibur Rahman Science and Technology University
Department of Computer Science & Engineering
1st Year 1st Semester B.Sc. Engineering Examination-2019

Course No: CSE 101 **Course Title: Introduction to Computer Systems**
Full Marks: 60 **Time: 3 hours**

N.B. i) Answer any **SIX** questions, out of the following **EIGHT** questions
ii) All questions are of equal values.

Q.1 (a) State the definition of computer. Explain the components of a computer 3
(b) What is computer? Briefly discuss various applications of a computer. 3
(c) Describe the various types of Computers based on operating principles. 4

Q.2 (a) Define central processing unit. What are the main operations of the CPU? 3
(b) List the different types of register in CPU. 3
(c) Draw a block diagram of basic computer organization and explain the function of various units of a computer system. 4

Q.3 (a) Why are binary codes used by computer systems? 2
(b) Subtract $(1110011)_2$ from $(11110011)_2$ by using 2's complementary method. 3
(c) Convert the given decimal number into its equivalent hexadecimal number. 5
i. 9463
ii. 1567

Q.4 (a) Write down the difference between RAM and ROM. 3
(b) Define I/O devices. What is the role of I/O devices in computer system? 3
(c) State the commonly used secondary devices and explain any one device from them. 4

Q.5 (a) What is cache hit? Explain the concept of using the cache memory in computer system with diagram. 4
(b) Draw a flowchart to add two integer variables and print the result as integer variable. 3
(c) Differentiate between compiler, assembler and interpreter. 3

Q.6 (a) Show the major categories of software and write the definition of all of them. 4
(b) Operating system (OS) is the principal component of system software. What are the major functions of it? Show the hardware-OS-user interface with diagram. 4
(c) Convert the Gray coded number 11010011 to its binary equivalent 2

Q.7 (a) What is a complement system,and why is it used in the computer system? 3
(b) Perform the binary addition of -8 and -2 in two's complement system. 2
(c) Draw the switching circuits and obtain truth table of following Boolean equations: 5
i. $A(B + C) = AB + AC$
ii. $A + BC = (A + B)(A + C)$

Q.8 (a) What are the different components used in the data communication? Explain each component briefly. 3
(b) What is network topology? Explain any two network topologies through suitable illustrations. 4
(c) LAN, MAN and WAN are computer networks based on geographical area. Differentiate among LAN, MAN and WAN. 3

Bangabandhu Sheikh Mujibur Rahman Science and Technology University
Department of Computer Science & Engineering
1st Year 1st Semester B.Sc. Engineering Examination-2019

Course No: **MAT105** Course Title: Differential and Integral Calculus
Full Marks: 60 Time: 03 hours

N.B.
i) Answer any **SIX** questions.
ii) All questions are of equal values.

1. (a) Define limit of a function. The real valued function f is given by 05

$$f(x)=\begin{cases}\dfrac{x^2-4}{x-2} & \text{when } x\neq 2\\ 3 & \text{when } x=2\end{cases}$$

. Show that the function f is discontinuous at $x=2$. Define the function f in such a way that it is continuous at $x=2$.

(b) Discuss the continuity and differentiability of the function $f(x)=|x-1|+|x+3|$ at the point $x=-3$. 05

2. (a) Define continuous function. Discuss the continuity at $x=0$ of the function 04

$$f(x)=\begin{cases}\dfrac{|x|}{x}; x\neq 0\\ 0; x=0\end{cases}$$

(b) Discuss the continuity and differentiability of the function 06

$$f(x)=\begin{cases}1 & \text{, when } x<0\\ 1+\sin x & \text{, when } 0\le x<\dfrac{\pi}{2}\\ 2+(x-\pi/2)^2 & \text{, when } x\ge\dfrac{\pi}{2}\end{cases}$$

at the point $x=\dfrac{\pi}{2}$.

3. (a) State and prove the Euler's theorem. 05

(b) Using the definition of differential coefficient show that $\dfrac{d}{dx}(x\ln x)=1+\ln x$. 05

4. (a) Find the area enclosed by the curve $x^{\frac{2}{3}}+y^{\frac{2}{3}}=a^{\frac{2}{3}}$. 05

(b) What is the n order Taylor Polynomial for $5x^2+7x+3$ power series of $(x-2)$. 05

5. (a) State Leibnitz's theorem. 05
If $y=e^{a\sin^{-1}x}$ then show that $(1-x^2)y_{n+2}-(2n+1)xy_{n+1}-(n^2+a^2)y_n=0$.

(b) Evaluate $\int\dfrac{2x^2-1}{(x+1)^2(x-2)}dx$ by partial fraction method. 05

6. (a) Find out maximum value, minimum value and critical point of the function $f(x)=4x^3-9x^2+6x$. 05

(b) Using L'Hospital's rule , show that 05

(i) $\lim_{x\to 0}(\cos x)^{\cot x}=1$ (ii) $\lim_{x\to 0}\left(\dfrac{\tan x}{x}\right)^{\frac{1}{x^2}}=1$

7. (a) Define definite integral. Find the volume of the solid formed by the revolution of the ellipse $\dfrac{x^2}{a^2}+\dfrac{y^2}{b^2}=1$ 05

(b) Show that $\beta(m,n)=\beta(n,m)$. 02

(c) Show that $\beta(m,n)=\int_0^\infty\dfrac{y^{n-1}}{(1+y)^{m+n}}dy$ where $m,n>0$. 03

8. Evaluate : (any four) 10

(i) $\int\dfrac{\sqrt{x}}{\sqrt{a^3-x^3}}dx$ (ii) $\int\dfrac{dx}{(1+x)\sqrt{1-x^2}}$ (iii) $\int\dfrac{dx}{(1+x^2)\sqrt{x^2+4}}$

(iv) $\int_0^1 x^2\sqrt{1-x^2}dx$ (v) $\int_0^1\dfrac{x^3\sin^{-1}x}{\sqrt{1-x^2}}dx$ (vi) $\int_0^{\pi}\dfrac{xdx}{1+\cos^2 x}$

ngabandhu Sheikh Mujibur Rahman Science and Technology University
Department of Computer Science and Engineering
1st Year 1st Semester B.Sc. Engineering Midterm Examination-2019

ourse Title: Introduction to Computer Systems **Course Code: CSE101**
Total Marks: 20 **Time: 1 (One) Hour**

N.B.: Answer any **Four** from following questions.

availability

1. Describe the various types of computers on the basis of applications. How many ways computer data can be represented? Explain each of them with examples. 5
2. What is cache hit? Explain the concept of using the cache memory in computer system with diagram. 5

3. What is the importance of decoding phase of machine cycle? Illustrate the communication process between the processor and memory.

4. Why complement is needed in the computer system? Subtract 6 from 4 using two's complement method. 5

5. Convert the Gray coded number 11010011 to its binary equivalent and vise-versa. 5

Bangabandhu Sheikh Mujibur Rahman Science and Technology University

Department of Computer Science & Engineering

1st Year 1st semester B.Sc. Engineering Midterm Examination-2019

Course No. : MAT105, **Course Title:** Differential Calculus and Integral Calculus, **Session**:2018-2019

Full Marls: 20 **Time:** 01 hour

[Answer any two of the following questions]

1. (a) Define limit of a function. The real valued function f is given by $f(x)=\begin{cases}\dfrac{x^2-4}{x-2}, & \text{when } x\neq 2\\ 3, & \text{when } x=2\end{cases}$. 5

Show that the function f is discontinuous at $x=2$. Define the function f in such a way that it is continuous at $x=2$.

(b) Discuss the continuity and differentiability of the function $f(x)=|x-1|+|x+3|$ at the point $x=-3$. 5

2. (a) Using the definition of differential coefficient show that $\frac{d}{dx}(x\ln x)=1+\ln x$. 5

(b) If $y=\sin nx+\cos nx$, then show that $y_r=n^r[1+(-1)^r\sin 2nx]^{1/2}$ 5

3. (a) If $y=a\cos(\ln x)+b\sin(\ln x)$ then show that $x^2y_{n+2}+(2n+1)xy_{n+1}+(n^2+1)y_n=0$. 5

(b) State Rolle's theorem. If $f(x)=x^2+5x-6$, is Rolle's theorem applicable in the interval (-6,1). 5

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1st Year 1st Semester B.Sc. Engineering Midterm Examination-2019

Course No: ENG105 **Course Title: Technical English Language**
Full Marks: 20 **Time: 1 hour**

(Figures in the right margin indicate full marks. Answer any two of the following)

1. Correct the mistakes and rewrite the following passage: 10

Jane Eyre are one of the finest novels' to the English fictionist Charlotte Bronte (1816-1855). This novel tells us the story of an orphan girls who grew up in her aunt's house. The novel is named under its focal character, the protagonist who is find in the story leading a very painfully life. She never received any loves or care from her aunt Mrs. Reed's family. Nobody in that house ever talk to her in an affectionate way. Even she had to face physical assaults by his cousin John Reed several times. Confronting humiliation were a part of her daily experience from the words of the Reed family.

2

a) Identify the root and types of affixes in the following words: 5
Technical, Phonology, Apolitical, Illegal, uncomfortable

b) Identify the vowel sounds in the following words: 5
out, girl, fight, worm, thanks

3 a) Use the following phrases in your own sentences: 5

i. Adjective phrase
ii. Adverbial phrase
iii. Infinitive phrase
iv. Participle phrase
v. Noun phrase

b) Identify the types of dependent clauses in the following sentences:

i) We shed too many tears for the poor fellow who was struck by one of these particles of radiation.
ii) Work hard, otherwise you will fail in the midterm exam.
iii) How she was murdered is still a mystery.
iv) She depended entirely on whom her mother sent with her.
v) It was long since I had last seen her.

Bangabandhu Sheikh Mujibur Rahman Science and Technology University, Gopalganj
Department of Computer Science and Engineering
Mid term examination 1st semester 2019
Course code: EEE 105

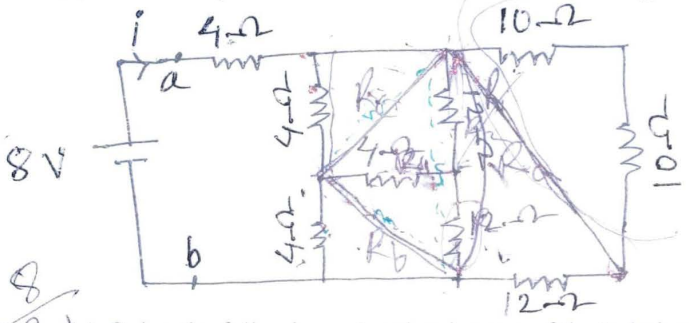
Time: 1 hr

Full marks: 20

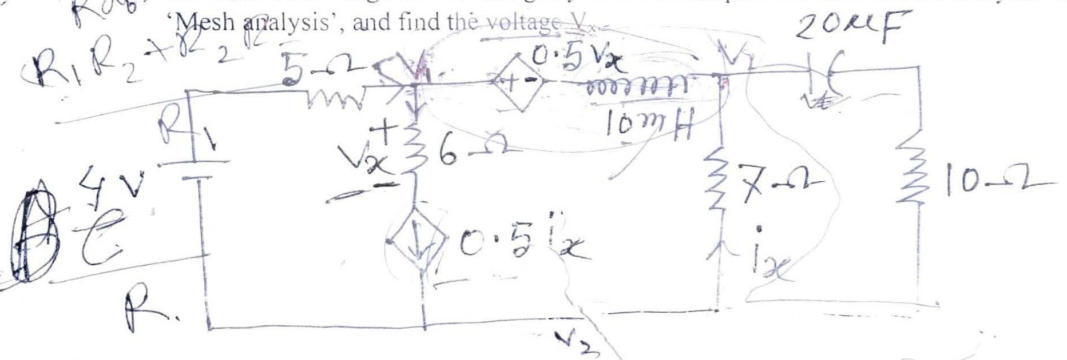
Answer all the questions

1. (a) Describe Kirchhoff's current law (KCL) and voltage law (KVL). [2]

(b) Find the equivalent resistance R_{ab} for the following circuit and use it to find current *i*. [3]



(c) Solve the following network using any of the techniques between 'Nodal analysis' and 'Mesh analysis', and find the voltage V_x. [5]



2. (a) What is Form factor and Crest factor? Express the following sinusoids as phasor quantity and state which sinusoid is leading.

$$V1 = -10\sin(wt + 50) \quad \& \quad V2 = 20\cos(wt - 30)$$ [1+2]

(b) Find the current i for the following RLC circuit. With proper unit, calculate the total [3]

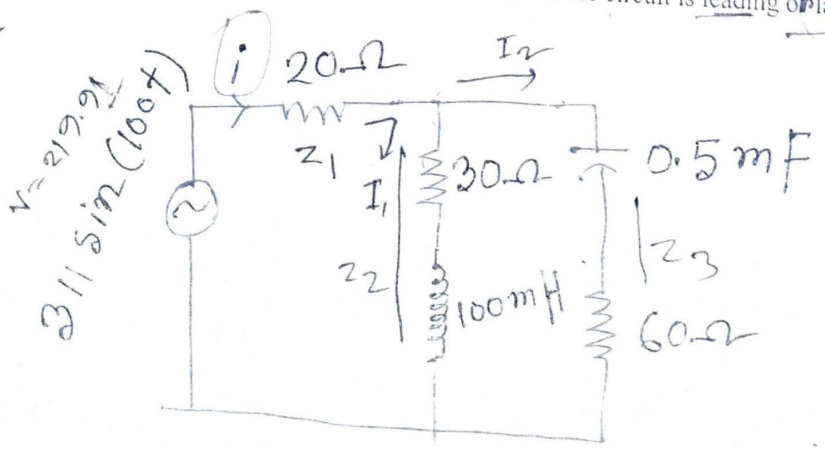
i. Apparent power [1]

ii. Real power [1]

iii. Reactive power [1]

iv. Power Factor [1]

State whether the "Power Factor" of the circuit is leading or lagging? [1]



Bangabandhu Sheikh Mujibur Rahman Science and Technology University
Department of Computer Science and Engineering
1st Year 1st Semester Midterm Examination -2019

Course Title: Structure programming Language **Course No: CSE103**
Total Marks: 20 **Time: 1 Hour**

N.B. i) Answer **Two** questions taking from **Three** questions

1. a) What do you mean by variable? What are the rules for running a variable? 3
   b) Consider the following variable declarations and definitions in C. Which are valid or invalid? 2

   i) int var_9 = 1;
   ii) int 9_var = 2;
   iii) int _ = 3;
   iv) int char = 34;

   c) Find out the output: 3

```
int m=-14,n=3;
printf("%d\n",m/n*10);
n=-n;
printf("%d\n",m/n*10);
```

   d) Write down the differences between constant and variable? 2

2. a) Write Short Note on C operators and Keywords. 5
   b) Find out the output: 3

```
main(){
  int x =100,y=200;
  if(x > y)
    printf("yes\n");
  else
    printf("no\n");
  printf("%d", (x<y)? x : y);
}
```

   c) Write down the differences between if...else statement and switch case statement? 2

3. a) Draw the flow chart of nested-if...else statement. 3
   b) What is the function of scanf and printf with example? 2
   c) Find out the output: 3

```
int main()
{
        int x=5,y=50,z=500;
        x=y=z++;
        printf("%d %d %d", x,y,z);
        return 0;
}
```

   d) Write down the differences between while loop and do while loop? 2