

PURBANCHAL UNIVERSITY
2019

Bachelor in Information Technology (B.I.T.)/First Semester/Final

Time: 03:00 hrs.

Full Marks: 80 / Pass Marks: 32

BIT101SH: Mathematics-I (New Course)

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Group A

Answer ALL questions.

10×2=20

1. Transform the equation $x^2 + y^2 = x$ to cylindrical coordinates.
2. Define conic. When does it become ellipse?
3. Find the parametric equations of the line joining the points $P_1(1, 1, 0)$ and $P_2(0, 2, 3)$.
4. If $\vec{a} = \vec{i} - 2\vec{j} + 3\vec{k}$ and $\vec{b} = 2\vec{i} + \vec{j} - \vec{k}$, find $\vec{a} \cdot \vec{b}$ and $\vec{a} \times \vec{b}$.
5. State generalized mean value theorem.
6. Evaluate: $\lim_{x \rightarrow \frac{\pi}{2}} (\sin x)^{\tan x}$
7. Compute the area bounded by a loop of the lemniscates $r^2 = a^2 \cos 2\theta$.
8. Find $\frac{\partial z}{\partial x}$ and $\frac{\partial z}{\partial y}$ when $z = x + y + 3axy$.
9. Evaluate the double integral: $\int_0^2 \int_1^2 (x^2 + y^2) dx dy$
10. Define orthogonal matrix with an example.

Group B

Answer EIGHT questions.

8×5=40

11. Show that the tangent at (a, b) to the curve $\left(\frac{x}{a}\right)^3 + \left(\frac{y}{b}\right)^3 = 2$ is $\frac{x}{a} + \frac{y}{b} = 2$.
12. Find the coordinates of the vertices, the eccentricity and the coordinates of the foci of the hyperbola $9x^2 - 16y^2 + 36x + 32y - 124 = 0$

(2)

13. Find the volume of the parallelepiped whose concurrent edges are represented by $3\vec{i} - 3\vec{j} + 3\vec{k}$, $\vec{i} + 2\vec{j} - \vec{k}$ and $3\vec{i} - \vec{j} + 2\vec{k}$.
14. Find the radius of curvature at any point of the parabola $y^2 = 4ax$ and hence show that the radius of curvature at its vertex is equal to its semi-latus rectum.

Or,

Find the maximum and minimum values of the function defined

by $f(x) = \frac{40}{3x^4 - 2xy^3 - 18x^2 + 60}$.

15. Find the area bounded by the curve $x^2 = 4y$ and the straight line $x = 4y - 2$.
16. State Euler's Theorem. Verify Euler's theorem for the function $f(x, y) = x^3 - 3x^2y + 5xy^2 - y^3$.
17. Find the asymptotes of the curve: $y^3 - 6xy^2 + 11x^2y - 6x^3 + x + y = 0$.
18. Solve the following system of equations:
 $x + 2y - z = 2$
 $3x + 6y + z = 1$
 $3x + 3y + 2z = 3$
by Gaussian elimination method.

Group C

Answer FOUR questions.

4×5=20

19. Find the value of c so that the lines $\frac{x-1}{-3} = \frac{y-1}{2c} = \frac{z-1}{z}$ and $\frac{x-1}{3c} = \frac{y-5}{1} = \frac{z-6}{-5}$ are perpendicular to each other.
20. For all the vectors $\vec{a}, \vec{b}, \vec{c}$, prove that:
$$\vec{a} \times (\vec{b} \times \vec{c}) + \vec{b} \times (\vec{c} \times \vec{a}) + \vec{c} \times (\vec{a} \times \vec{b}) = 0.$$
21. Expand $e^{\sin x}$ by Maclaurin's theorem as far as term containing x^4 .
22. Evaluate the double integral $\iint xy(x+y) dx dy$ over the diagram bounded by the curves $y=x$ and $y=x^2$.
23. Find the volume of the sphere $x^2 + y^2 + z^2 = a^2$.

PURBANCHAL UNIVERSITY

2019

Bachelor in Information Technology (B.I.T.)/First Semester/*Final*

Time: 03:00 hrs.

Full Marks: 80 /Pass Marks: 32

BIT190MS: Principles of Management (New Course)

Candidates are required to give their answers in their own words as far as practicable.

Figure in the margin indicate full marks.

Group A

Answer TWO questions.

$2 \times 12 = 24$

1. It is said that management functions are interrelated with each other? Do you agree with statement? Comment critically.
2. What is system theory? Discuss the features and limitations of system theory with respect to the application of management practices in Nepalese context.
3. What are the various forms of organizational structure? Explain.

Group B

Attempt SEVEN questions

$7 \times 8 = 56$

4. Define the concept of communication. Explain the significance of management communication in an organization?
5. Define the concept of planning. Explain different factors affecting planning process.
6. "In matrix organization, the personnel working on the project does have a responsibility their functional manager and project manager". Justify the statement.
7. Why is SWOT analysis conducted? Describe the major components of SWOT analysis used for formulating strategic plans.
8. Discuss the significance of leadership in an organization.
9. Explain the steps in rational decision making process.
10. Explain management as control system.
11. "Co-ordination is an integral element of ingredient of all the managerial function". Explain.

**PURBANCHAL UNIVERSITY
2019**

Bachelor in Information Technology (B.I.T.)/First Semester/*Final*

Time: 03:00 hrs.

Full Marks: 80 /Pass Marks: 32

BIT175CO: Computer Programming in C (New Course)

Candidates are required to give their answers in their own words as far as practicable.

Figure in the margin indicate full marks.

Group A

Answer TWO questions.

$2 \times 12 = 24$

- 1(a) Define the following terms: *C tokens, Keywords, Identifiers.*
Discuss different data types in C with examples. Why do we comment a program? 6+4+2

- 2(a) What is the difference between while loop and do-while loop? Find the output that will be generated by the following program: 2+4

```
#include <stdio.h>
int main( )
{
    int i = 0, x = 0;
    while ( i < 20 ) {
        if ( i % 5 == 0 ) {
            x += i;
            printf( "%d", x );
        }
        ++i;
    }
    printf( "\nx = %d", x );
}
```

- (b) What is the difference between '=' and '==' operators in C. Write a C program that asks user to enter temperature in Celsius (C) and converts it into Fahrenheit (F). The Conversion formula is: $C=5(F-32)/9$: 2+4

- 3(a) What do you mean by precedence and associativity of operators?
A marking scheme in a particular exam is as follow.

(2)

Marks (in %)	Grade
80 -- 100	A
60 - 79	B
50 - 59	C
40 - 49	D
0 - 39	E

Write a program that asks student to enter his/her mark in any subject and print the equivalent grade. Your program should display "Invalid Input!", if the mark entered is less than 0 or more than 100 4+8

Group B

Answer SEVEN questions.

7×8=56

4. Write a program to enter n numbers in an array, and compute the sum of only prime numbers in the array. 8
5. Write a program to multiply given two matrices of given orders. 8
6. What do you mean by functions in C? Write its advantages. Using user defined function, write a program to find maximum value among three integers. 2+2+4
7. What do you mean by recursion? Write a program to calculate factorial of a given number using recursion. 2+6
8. Write any two differences between structure and union. Describe nested structure with example. 2+6
9. Discuss different file opening modes. Write a program to copy content of one text file to another. 4+4
10. Write a program using pointer to search a given element in an array of size, N. 8
11. Write short notes on any TWO:
 - (a) Algorithm and Flow Chart
 - (b) String Handling Functions
 - (c) DMA4+4



PURBANCHAL UNIVERSITY

2019

Bachelor in Information Technology (B.I.T.) / First Semester / Final

Time: 03:00 hrs.

Full Marks: 80 / Pass Marks: 32

BIT120EL: Basic Electrical System and Circuits (New Course)

Candidates are required to give their answers in their own words as far as practicable.

All questions carry equal marks. The marks allotted for each sub-question is specified along its side.

Group A

Answer TWO questions.

$2 \times 12 = 24$

- 1(a) State and explain superposition theorem with suitable example. 7
(b) Find the value of R, if the voltage drop across the 500Ω is 2.5V. 5

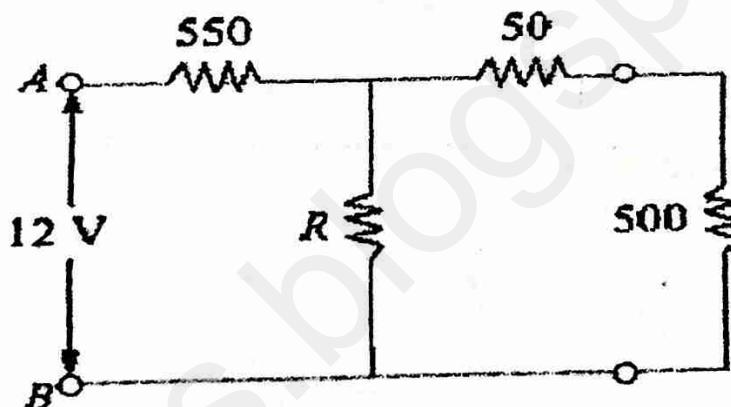


Fig. 1(b)

- 2(a) Use nodal analysis to find the value of I in the network of figure 6
2(a).

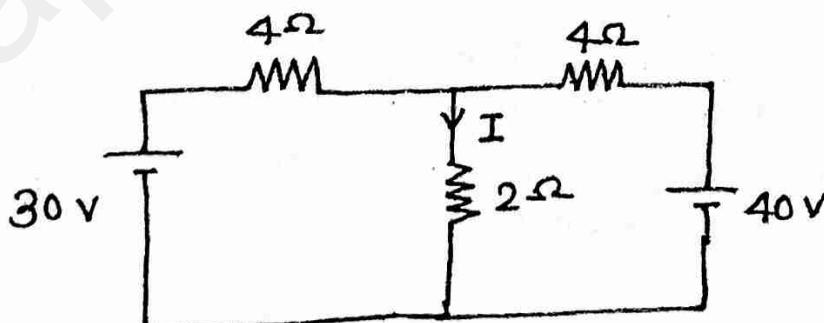


Fig. 2(a)

- (b) State and prove Maximum Power Transfer Theorem. 6
3(a) Explain series resonant circuit and derive the expression for resonant frequency. 6

(2)

- (b) A series RLC circuit with $(3+j4)$ and $X_L=6 \Omega$ is connected across 200V, 50Hz supply. Find the values of R,L,C impedance, current and power factor. 6

Group B

Answer SEVEN questions.

$7 \times 8 = 56$

4. Derive the expression for impedance of series R-L circuit with waveform and phasor diagram. 8
5. Find resistance between the terminal A and B. 8

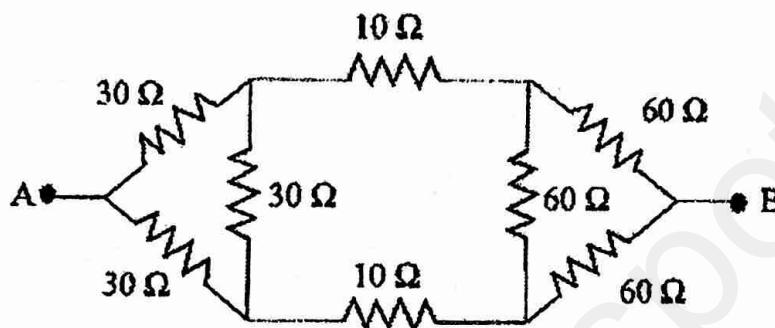


Fig. 5

6. Solve the following mesh with loop current method. What is the power dissipation in 6Ω . 6+2

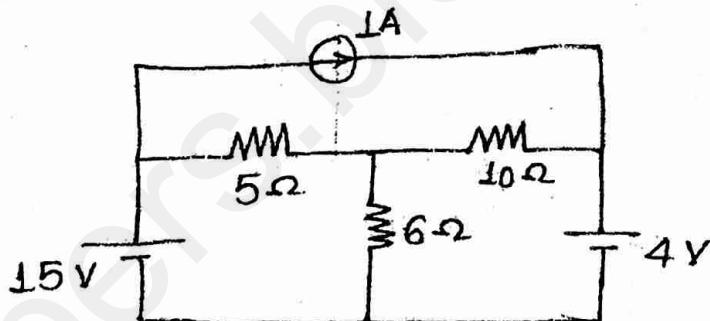


Fig. 6

7. State and explain Faraday's law of electromagnetic induction. Derive the expression for dynamically induced emf.
8. Thevenize the given circuit across the terminal AB and hence calculate the p.d. across it. 6+2

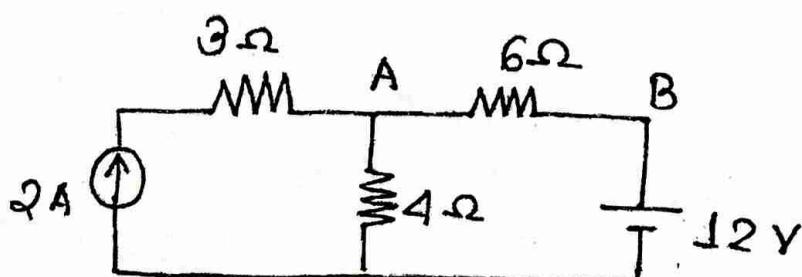


Fig. 8

(3)

9. Two impedances of $(12+j6) \Omega$ are connected in parallel across 220V, 50Hz supply. Determine current in each branch and total circuit current. Also draw phasor diagram. 8
10. A 3φ balanced Y connected load of $(6-j8)$ is connected across 400V, 50Hz supply. Find Current, Phase Voltage, Power Factor, Active Power, Reactive Power and draw phasor diagram. 8
11. Write short notes on any TWO:
 - (a) Power Factor Improvement
 - (b) Reciprocity Theorem
 - (c) Resistor Color Coding



PURBANCHAL UNIVERSITY

2018

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Time: 03:00 hrs.

Full Marks: 80 /Pass Marks: 32

BIT175CO: Computer Programming in C (New Course)

Candidates are required to give their answers in their own words as far as practicable.

Figure in the margin indicate full marks.

Group A

Answer TWO questions.

2×12=24

- ✓ 1(a) Differentiate between call by value and call by reference with examples. 4
- ✓ 2(b) Write a program to determine whether a given number is palindrome or not, using function and demonstrating with argument and with return value. 8
- ✓ 2(a) Discuss different types of errors with examples. 4
- ✓ (b) Write a program, using pointer, to input a $m \times n$ matrix and find the following: 3+5
(a) sum of principal diagonal elements.
(b) Square roots of sum of square of all even elements.
- ✓ 3(a) Explain break and continue with examples. 4
- ✓ (b) Write a program using concept of DMA to find the third largest element of an array of size N. 8

Group B

Answer SEVEN questions.

7×8=56

- ✓ 4 Discuss priority and associativity with example. Explain bitwise operators with example. 4+4
- ✓ 5 Write a program using structure to input records of 1000 employees and display records of employees having the highest and the lowest salary. Also display the records of all employee working in the “computer” department. Structure members include ID, Name, Salary and Department. 8
- ✓ 6 Differentiate between pre-test loop and post test loop. Write a program to generate Fibonacci series up to N terms. 3+5

(2)

7. Write a program to read content of data file named "PU" and count and display number of characters, white spaces, tab spaces, and newlines present in the content of the file. 8
8. Define importance of symbolic constant. Discuss primary data types. 3+5
9. Write a program which will read a paragraph and count all occurrences of a particular word specified by a user. 8
10. Define array and pointers with its importance. Write a program to draw three concentric circles. 3+5
11. Write short notes on any TWO:
(a) Unformattted input functions
(b) Preprocessor directives
(c) String handling functions



PURBANCHAL UNIVERSITY

2017

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Time: 03:00 hrs.

Full Marks: 80 /Pass Marks: 32

BIT120EL: Basic Electrical System and Circuits (New Course)

Candidates are required to give their answers in their own words as far as practicable.

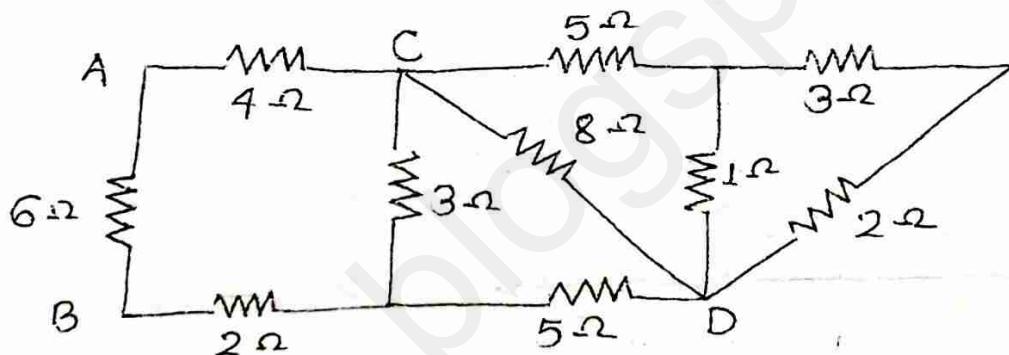
All questions carry equal marks. The marks allotted for each sub-question is specified along its side.

Group A

$2 \times 12 = 24$

Answer TWO questions.

- 1(a) Define equivalent resistance. Find the equivalent resistance as seen from terminal (i) AB, (ii) CD? $2+2.5+2.5$

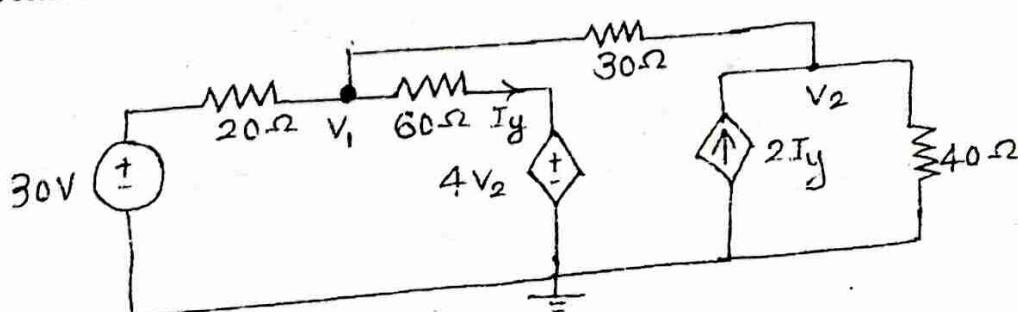


- (b) Define temperature coefficient of resistance. At 20°C , two coils C_1 and C_2 connected in series have respectively resistance of 800Ω and 600Ω and their respective temperature coefficients are 0.001 and 0.003°C^{-1} . Find resistance of combination at 50°C and effective temperature coefficient of combination at 50°C . $1+2+2$

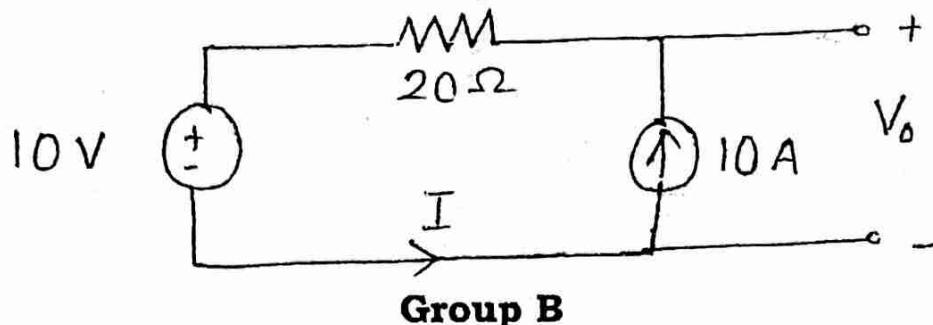
- 2(a) Differentiate between voltage source and current source showing their V-I characteristics. 6

- (b) State and explain Kirchhoff's laws. 6

- 3(a) Use Nodal analysis method to determine current through 30Ω resistance. 7



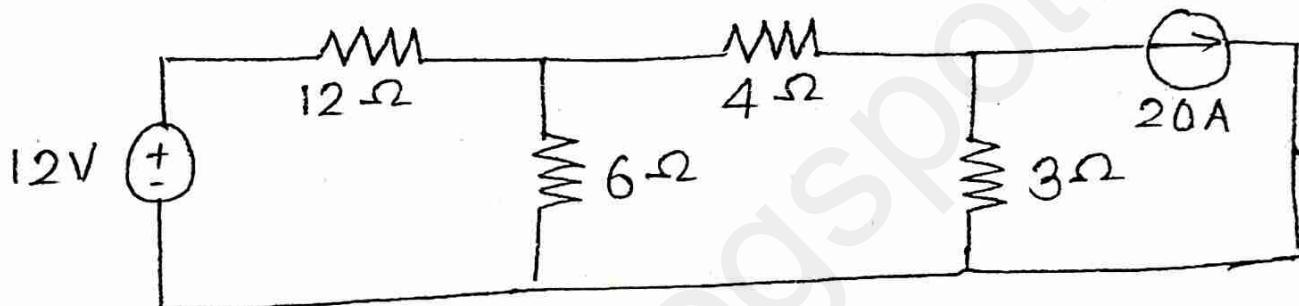
- (b) Obtain the value of V_o and I using superposition theorem. 5



Answer SEVEN questions.

7×8=56

4. Use Thevenin's theorem to calculate current flowing through 6Ω resistance. 8



5. Derive the expression for equivalent resistance of three resistors connected in (i) series (ii) parallel. 8

6. State Faraday's law of electromagnetic induction. Derive the equation of single phase alternating emf and hence draw its wave form. 8

7. A series circuit consists of a resistance of 10Ω , inductance of $1H$ and a capacitance of $100\mu F$ across a $220V$, $50Hz$ supply calculate: 8

- | | |
|--------------------|--------------------------|
| (a) Impedance | (b) rms value of current |
| (c) Apparent power | (d) Admittance |

8. Two impedances $Z_1=(10+j15)\Omega$ and $Z_2=(8-j6)\Omega$ are connected in parallel. If the total current in the circuit is 10A, find power consumed by each branch and draw phasor. 3+3+2

9. A balanced Y connected load of $(8+j6)\Omega$ is connected to a 3 ϕ , 400V supply. Find current, power factor, active power, reactive VA and total VA. 3+2+1+1+1

Contd. ...

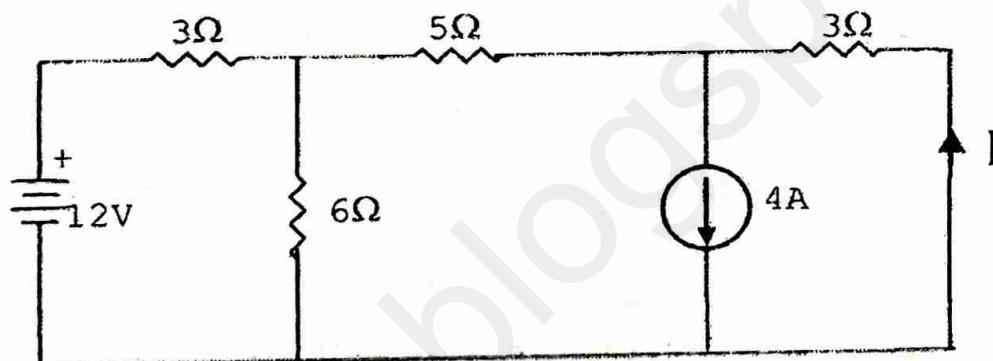
(3)

10. If $R=20\Omega$, $L=2\text{mH}$ and $C=1\mu\text{F}$ calculate resonant frequency in following. 4+4
- (a) When R, L and C are in series
 - (b) When R, L and C all are in parallel
11. Write short notes on any TWO: 4+4
- (a) Ohm's law
 - (b) Average and RMS value
 - (c) Electromagnet



Candidates are required to give their answers in their own words as far as practicable.

All questions carry equal marks. The marks allotted for each sub-question is specified along its side.

Group A**Answer TWO questions.** **$2 \times 12 = 24$** 1(a) State and explain reciprocity theorem. 3+31(b) Using Kirchhoff's laws find the current 'I' in figure 1. 6**Figure 1**2(a) Define Average value of an ac. quantity and derive RMS value for sinusoidal alternating current. 3+52(b) Explain Ohm's law for magnetic circuit. Also mention the analogous quantity of magnetic circuit and electric circuit. 43(a) A sinusoidal alternating supply has an r.m.s. value of 100 volt and a frequency of 50 hertz and is connected to a series circuit having both resistance and inductance. The current taken from supply has an r.m.s. value of 5 A and power taken is 250 watts. Calculate: (i) The resistance of the circuit (ii-) The impedance of the circuit (iii) The power factor of the circuit (iv) The inductance (v) The peak value of current and (vi) The time taken for one complete cycle of supply. 1+1+1+1+1+13(b) State and explain Faraday's laws of electromagnetic induction. 6

(2)

Group B

Answer EIGHT questions.

$8 \times 7 = 56$

4. Determine p.d. in 4Ω resistance using Thevenin's theorem. 7

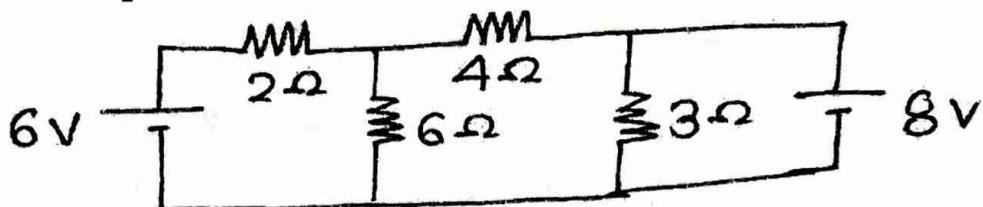


Figure 2

5. Calculate the current through the 2Ω resistance of Figure 3. Use Norton's theorem for the purpose. What should be the value of 2Ω resistor so that the circuit could deliver maximum power? 6+1

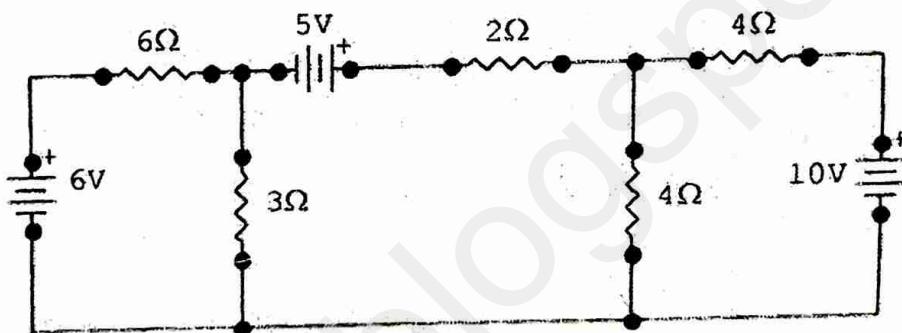


Figure 3

6. State and explain Kirchhoff voltage Law with Mathematical Equation. 3+4

7. An inductive circuit of resistance 10Ω and inductance of 0.1H is connected to a 220V , 50Hz supply. What capacitance placed in parallel will produce resonance? Find the current in the branch circuits at resonance. 4+3

8. Derive the formula to convert delta resistances into star and vice-versa. 7

- 9(a) Find the total resistance between A&B terminals for the network shown in figure 4. 4

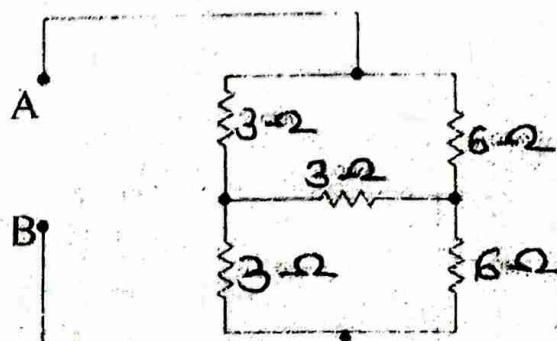


Figure 4

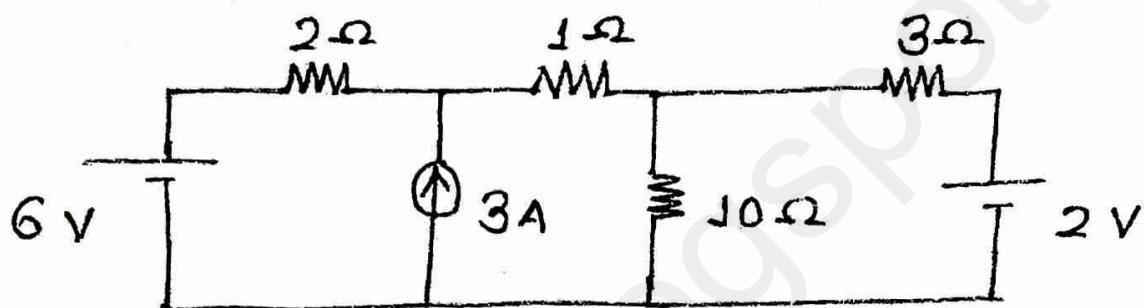
(3)

- (b) Point out the advantages of 3-Φ in compare to 1- electrical system.

3

10. Use superposition theorem to find current in the resistance of 10Ω .

7



11. Two impedances given by $Z_1 = (12 - j5)$ and $Z_2 = (5 + j7)$ are joined in parallel and connected across a voltage of $v = 100+j15$. Calculate the circuit current, its phase and the branch currents.

2+1+2+2

12. Three identical impedances of $(15+j20)\Omega$ are connected in delta to a 3φ supply of 400V. Calculate:

7

- (i) Phase current
- (ii) Line current
- (iii) Active power
- (iv) Active power if the same load is connected in star.

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Time: 03:00 hrs.

Full Marks: 80 / Pass Marks: 32

BIT101SH: Mathematics-I (New Course)

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Group A

Answer ALL questions.

$10 \times 2 = 20$

1. Change to rectangular co-ordinates for $\left(3, \frac{\pi}{4}\right)$.
2. Define Skew-Symmetric matrix with an example.
3. Find the eccentricity of the ellipse $4x^2 + 9y^2 = 36$.
4. Obtain the parametric equation of the line joining the points $P_1(1, 1, 0)$ and $P_2(0, 2, 3)$.
5. Find the unit vector which is perpendicular to the two vectors $\vec{a} = 2\hat{i} + \hat{j} + 2\hat{k}$, $\vec{b} = 3\hat{i} + \hat{j} + \hat{k}$.
6. Evaluate: $\lim_{x \rightarrow 0} \frac{a^x - 1}{x}$
7. Find the radius of curvature at the point (x, y) of the curve $y^2 = 4ax$.
8. Find the area bounded by $y = \sin x$, the x -axis and the ordinates at $x=0$ and $x=2\pi$.
9. Evaluate $\iint_R xy dxdy$. Where R is the positive quadrant of the circle $x^2 + y^2 = a^2$.
10. Verify Euler's theorem for the function $f(x, y) = x^3 + 3x^2y + 5xy^2 - y^3$.

Group B

Answer EIGHT questions.

$8 \times 5 = 40$

11. Change to spherical polar and cylindrical polar co-ordinates for $x^2 - z^2 = 4$.

(2)

12. Find the centre, eccentricity, foci and directrices of the hyperbola $9x^2 - 16y^2 + 27x - 32y - 16 = 0$.
13. Find the equation of the plane through the point (2,-3,4) and parallel to the plane $2x-6y-7z=6$.
14. Find the image of the point (1,2,5) in the plane $2x-y-z+3=0$.
15. Solve the following system of linear equations; by using matrix

$$4x + 9y - z = 14$$

inversion method: $5x + 8y - 2z = 28$

$$x + 2y - z = -1$$

16. Evaluate $\int_0^1 \int_x^{\sqrt{2-x^2}} \frac{x dy dx}{\sqrt{x^2 + y^2}}$ by changing the order of integration.

17. Find the maximum and minimum values of the function $f(x)=2x^3-15x^2+36x+10$.

18. Prove that $x/a+y/b=1$ touches the curve $y=be^{-x/a}$ at the point where the curve crosses the axis of y.

19. If $x^y = e^{y-x}$ prove $\frac{dy}{dx} = \frac{2 - \log x}{1 - \log x}$.

20. Find the entire length of the curve $x^{2/3} + y^{2/3} = a^{2/3}$.

Group C

Answer FOUR questions.

4×5=20

21. Find the asymptotes of the curve $y^3 - x^2y + 2y^2 + 4y + x = 0$.

22. Expand $e^{\sin x}$ by Maclaurin's theorem upto the term containing x^4 .

23. The ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ is revolved about x-axis. Find the volume of the solid thus generated.

24. If $u = \sin^{-1}\left(\frac{x^2 + y^2}{x + y}\right)$. Show that $x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y} = \tan u$.

25. Show that $[\vec{a} + \vec{b} \quad \vec{b} + \vec{c} \quad \vec{c} + \vec{a}] = 2[\vec{a} \quad \vec{b} \quad \vec{c}]$.

26. Find the equation of line of intersection of two planes $3x+y+2z=2$ and $x+2y+4z=8$.

PURBANCHAL UNIVERSITY

2017

Bachelor in Information Technology (B.I.T.)/First Semester/*Final*

Time: 03:00 hrs.

Full Marks: 60 / Pass Marks: 24

BIT170CO: Fundamentals of Information Technology (New Course)

Candidates are required to give their answers in their own words as far as practicable.

Figure in the margin indicate full marks.

Group A

Answer TWO questions.

$$2 \times 12 = 24$$

1. What do you mean by computer? List and explain the different components of the computer with its block diagram.
 2. What is computer network? Explain different network topologies with its advantages and disadvantages.
 3. What are the new technologies used on Information Technology? Explain with examples.

Group B

Answer SIX questions.

$$6 \times 6 = 36$$

PURBANCHAL UNIVERSITY
2017

Bachelor in Information Technology (B.I.T.)/First Semester/*Final*

Time: 03:00 hrs.

Full Marks: 80 / Pass Marks: 32

BIT105SH: Technical Communication (English) (New Course)

Candidates are required to give their answers in their own words as far as practicable.

Figures in the margin indicate full marks.

Answer ALL questions.

1. Read the following passage and answer the following questions: 15

With the recent growth of mass media technology advertising has begun to play a significant role in the national economy. Thousands of people are working to promote the sale of each new product or to boost the sale of a product already in the market. In fact, advertising as an industry now enjoys a respectable status and is regarded by many as a service to society. The avowed purpose of advertising is to inform the audience and to influence it to buy a particular product. The customer is made aware of goods and services available, their merits, uses and value. Thus, advertising helps him in choosing what he actually needs to what he should have to add to his comfort and improve his standard of living.

But the sale of a product does not depend on advertising alone. The quality of a product must be good and its price within the reach of those for whom it is intended. If exaggerated claims are made or the price is too high, advertising, however powerful, will not prove effective. India's advertising industry is about 75 years old. The British firms in India were the first to make use of advertising for marketing proposes in the beginning of the twentieth century. The advertising agencies opened by them gave an opportunity to the Indian staff to get training and set up their own establishments in due course. The first Indian advertising agency B. Dattaram and Company started functioning in 1903.

When India became free, five-year plans were launched, economic activities increased at a tremendous pace. Many new industries were set up and gradually a large number of products which were imported earlier, began to be manufactured in the country. Under these circumstances naturally advertising received a big boost. Now hordes of specialist agencies have come into existence to look after particular aspects of the advertising industry.

Questions:

- (a) What is the main function of advertising?
- (b) What factors have contributed to the growth of advertising as an industry?
- (c) Why advertising is considered an important activity of modern society?
- (d) Why did the advertising industry in India get a boost after Independence?
- (e) Does advertising sometimes exercise a harmful influence on our society? Elaborate your answer with examples.
2. Mark the Primary Stress of the following words. 5
- (i) Condition (b) ago (c) Conduct(n) (d) himself (e) lady doctor
 (f) behind (g) recommend (h) submit (i) reason (j) cover
3. Decide the tone pattern of the following sentences: 5
- (a) I invited Mr. Thapa last night
- (b) Where do you work?
- (c) Did he get the book which he was looking for?
- (d) I am unmarried, aren't I?
- (e) Ram was sleeping and his sister was cooking.
4. Supply the correct forms of verbs in the brackets and rewrite the sentences: 5
- (a) The horse and carriage (are/is) ready.
- (b) Each of the wounded soldiers (was/were) given first aid.
- (c) Dick, together with his friends (was/were) drowned.
- X (d) If I were you, I (go) there.
- (e) Twenty miles (is/are) a long distance
5. Answer any TWO of the following questions. $2 \times 10 = 20$
- (a) Suppose you are the production manager in a reputed software manufacturing company. Your general manager has instructed you to submit a report about production constraints. Write a clear, smoothly connected report, highlighting the problem, factor involved in the problem.

(3)

(b) As the secretary of your club, prepare a notice inviting the executive committee members to the 7th regular meeting with the agenda to be discussed.

(c) What are the fundamentals of effective writing? Explain.

6. Write an essay on any ONE of the following topics. **10**

(a) Laser Technology

(b) Technology and satisfaction

7 Write a job application along with resume on the post of IT Officer in a reputed software company. **10**

8. Write shorts on any TWO: **5+5**

(a) Facial expression

(b) Extensive reading

(c) Length



PURBANCHAL UNIVERSITY
2017

Bachelor in Information Technology (B.I.T.)/First Semester/Final

Time: 03:00 hrs.

Full Marks: 80 / Pass Marks: 32

BIT175CO: Computer Programming in C (New Course)

Candidates are required to give their answers in their own words as far as practicable.

Figure in the margin indicate full marks.

Group A

Answer TWO questions.

$2 \times 12 = 24$

1(a) What are the different rules for naming variables? Write an Algorithm and flowchart to find the greatest number among three numbers. 3+4

(b) Write a program to generate Fibonacci series upto N terms. 5

2(a) Why do we need to store data into the file? Write a program to draw a Right Angle Triangle and set the line color as RED. 2+4

(b) Define pointer with syntax. Write a program, using pointer, to find transpose of a given matrix. 1+5

3(a) Discuss structure with syntax. 2

(b) Write a program using structure to read Name, Age, Address and Telephone number of N persons and sort them in ascending order by Name and display all the person's detail whose age is greater than 25. 10

Group B

Answer SEVEN questions.

$7 \times 8 = 56$

4. What is operator? List different types of operators supported in C. Explain in detail the basic Structure of 'C' programming. 1+2+5

5. Write a program to input average marks of student and show the grade as the following conditions. 8

Marks	Grade
0-39	F
40-49	D
50-59	C
60-79	B
80-100	A

(2)

6. Differentiate between call by value and call by reference. Write a program to swap two variables showing the example of call by reference. 4+4
7. Write a program to determine whether the given number is palindrome or not. 8
8. Explain primary data types. Discuss unformatted input functions. 4+4
9. Discuss memory management functions. Write a program to find the sum of elements of a given array, using DMA. 3+5
10. Define and list the different types of Array with syntax. Write a program to the following pattern: 3+5

1						
1	2					
1	2	3				
1	2	3	4			
1	2	3	4	5		
1	2	3	4	5	6	

11. Write short notes on any TWO: 4+4
- (a) String handling functions
 - (b) Difference between Structure and Array
 - (c) Opening Modes of File



Candidates are required to give their answers in their own words as far as practicable.

Figures in the margin indicate full marks.

Answer ALL questions.

1. Read the following passage and answer the following questions: 10

Arundhati Roy, the famous novelist and activist who won the Booker Prize in 1997 for her novel, 'The God of Small Things', was born in Shillong, Meghalaya on November 24, 1961, to a Keralite mother and Bengali father. She spent her childhood in Aymanam, in Kerala, with her mother. Arundhati left Kerala for Delhi at the age of 16 and embarked on a bohemian lifestyle, staying in a small hut with a tin roof and making a living by selling empty bottles. She studied architecture in Delhi but did not take it up as a profession.

In 1984, Arundhati began a brief career in films, under the influence of her husband, who was a film maker. She played the role of a village girl in the award winning movie 'Massey Sahib' and also wrote the screenplay for the film 'In Which Annie Gives it Those Ones'.

Roy began writing 'The God of Small Things' in 1992 and finished it in 1996. She received half-a-million pounds (about Rs. 3.5 Crore) as an advance from publishers, and the rights to the book were sold in twenty-one countries. The book is semi-autobiographical and a major part of it captures her childhood in Aymanam.

When India tested a nuclear weapon in Pokhran, Rajasthan, Roy wrote an essay with the title 'The End of Imagination' which was a strong criticism of the government's nuclear policies. It was published in her collection called 'The Cost of Living' in which she also crusaded against India's large hydroelectric dam projects in the states of Maharashtra, Madhya Pradesh and Gujarat. She has since devoted herself solely to non-fiction and politics, publishing two more collections of essays, as well as to working for social causes.

She was in the news recently (in 2006) after she rejected the national award given by the Central Sahitya Academy to the best Indian Writer in English. Arundhati explained that although she had no quarrel with the Academy, she was turning down the award as a protest against the policies of the government.

Questions:

- (a) What is Arundhati Roy famous for?
- (b) What are Arundhati Roy's Connections with Kerala?
- (c) Why has she been described as a "living Pudivechukkila" in her activism?
- (d) What kind of a person do you think Arundhati Roy is? Can you choose three words to describe her personal qualities?
- (e) Do you think Roy's method of protest would have any impact on the government? Why?

2. Prepare a minute for eleven member board committee. Also include the major decisions that have been made at the meeting. 3
3. Write short note any TWO of the following: 4+4
 - (a) Notice Preparation
 - (b) Space distancing
 - (c) Descriptive writing
4. What is description writing? Write a description of the landscape view of Pokhara. 3+5
5. Apply for the post of a Computer Officer in a construction company with suitable Curriculum Vitae. 5+5
6. Suppose you are the chairman of a local club of your community. You have decided to do some activities for elimination of social evils in your area. submit a proposal to Plan Nepal, Biratnagar for financial support. 8
7. Briefly describe the fundamentals of effective writing. 6
8. Write an essay on any ONE of the following: 10
 - (a) The Pleasures of Cycling
 - (b) Importance of Technical Education

(3)

9. Put Primary Stress of the following words.
hotel, conduct(n), combination, announce
10. Transform the following as indicated.
- How does the girl help the boy? (into passive)
 - I was invited to play. (into active)
 - He said, "Which notebook is mine?" (into indirect speech)
 - The Gorkhapatra says it writes what is true. (into direct speech)
11. Fill in the gaps with appropriate prepositions.
- The stories are full interest.
 - We are accountable God our actions.
 - There is no exception this rule.
 - We are slaves convention. No man should be slave his passion.
12. Fill in the gaps choosing correct words.
- Ten tons of cement (is, was, are) enough or this house.
 - Bring four (Sheep, Sheeps)
 - The police caught the thieves. (has, have)