

UNIVERSITY INSTITUTE OF ENGINEERING & TECHNOLOGY,
1st Mid Semester EXAMINATION-2023
Electronic & Communication Engineering Ist YEAR
Engineering Drawing (TCA S101)

TIME: 1:30 hr

M.M:30

Q.1	Draw the projections of the following points. 1. A 40 mm above HP and 55 mm in front of VP. 2. B 10 mm above HP and 25 mm behind VP. 3. C 35 mm below HP and 20 mm behind VP. 4. D 10 mm below HP and 40 mm in front of VP. 5. E on HP and 50 mm in front of VP.	10
Q.2	Line AB has its end A 25 mm above HP and 30 mm in front of VP. End B is 50 mm above HP and 70 mm in front of VP. Distance between the end projectors is 80 mm. Draw the projections of the line.	9
Q.3	End A of a line AB is 15mm above HP & 20mm in front of VP while its end B is 50mm above HP and 75mm in front of VP. The distance between end projectors of the line is 50mm. Draw projections of the line and find its true length and true inclination with the principal planes. Also mark its traces.	11

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Department of Electronics and Communication Engineering

UIET, CSJM University, Kanpur

Semester: 1st, Year: 1st Year (2023)

Subject Name : Physics - I, Subject: Code : PHY-S101- ECE

1st Mid Semester Examination

Time : 1.5 hours

Maximum Marks-20

Note :

All questions are compulsory.

Section - A

8 marks (Each question carries 1 mark) (Fill in the blanks)

1. If $\phi(x, y, z) = C$ is the equation of a surface then is the normal to the surface.
2. The unit vectors in polar coordinate system are defined as $\hat{r} = \dots\dots\dots$ and $\hat{\theta} = \dots\dots\dots$
3. If the curl of a vector field $\vec{A}(x, y, z)$ is zero then the vector field $\vec{A}(x, y, z)$ is called an vector.
4. If a vector $\vec{A} = xz\hat{i} - y^2\hat{j} + 2x^2y\hat{k}$ then $\vec{\nabla} \cdot \vec{A} = \dots\dots\dots$
5. The maximum magnitude of static friction is known as friction.
6. In spherical polar coordinate system the three coordinate curves are i) r - curve which is a ii) θ - curve which is a and iii) ϕ - curve which is a
7. The directional derivative of $\vec{\nabla} \phi$ along the direction of a unit vector \hat{a} is defined as
8. The frictional forces arise due to the electromagnetic interaction between the of the bodies at the contact surfaces.

Section B

6 marks (Each question carries 2 marks)

1. Write down the radial and tangential components of acceleration in polar coordinate system.

The rate of change of acceleration is sometimes known as jerk. Find the direction and magnitude of jerk for a particle moving in a circle of radius R at angular velocity ω . Draw a vector diagram showing the instantaneous position, velocity, acceleration and jerk.

2. Find out the unit vectors in cylindrical coordinate system and show that cylindrical coordinate system is orthogonal.

3. Show that Newton's second law of motion is invariant in all inertial frames.

Section C

6 marks (Each question carries 3 marks)

1. What are the geometrical interpretations of divergence and curl of a vector field? Explain with figures.

2. A particle slides down a smooth inclined plane of elevation θ , fixed in an elevator going up with an acceleration a_0 . The base of the inclined plane has a length L . Find the time taken by the particle to reach the bottom.

Total nos. of printed pages: 01

Roll No: ESJMA23001390
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Department of Mathematics
CSJM University, Kanpur
Mathematics-I (MTH-S101)
Branch-ECE
Semester I: 2023-24 (Odd Semester)
First Mid Semester Examination

Time: 1.5 Hrs.

M.M: 30

Section A

1. Attempt all questions

(1 × 9 = 9)

- Every monotonic sequence is bounded. (True or False)
- Every bounded sequence is monotonic. (True or False)
- Series $\sum \frac{1}{n}$ is convergent. (True or False)
- Every monotonic sequence is either bounded below or bounded above. (True or False)
- Every decreasing sequence is bounded below. (True or False)
- A constant sequence is not monotonic. (True or False)
- Evaluate $\lim_{n \rightarrow \infty} n^{1/n}$
- Give one example of a sequence which is bounded below but not bounded above.
- Give one example of a sequence which is neither bounded below nor bounded above.

Section B

2. Attempt all questions

(3 × 3 = 9)

- Show that the sequence $\langle \frac{n}{n+1} \rangle$ converges to 1.
- Write the definition of non-decreasing sequence and give the one example.
- Show that the sequence $\langle a_n \rangle$, where $a_n = \frac{1}{n+1} + \frac{1}{n+2} + \frac{1}{n+3} + \dots + \frac{1}{n+n}$, converges and its limit l is such that $\frac{1}{2} \leq l \leq 1$.

Section C

3. Attempt all questions

(2 × 6 = 12)

- Prove that $\lim_{n \rightarrow \infty} \left[\frac{(n+1)(n+2)\dots(n+n)}{n^n} \right]^{1/n} = 1/e$
- Prove that if a sequence is convergent, then its limit is unique.

(L.H)

$$\frac{(n+1)(n+2)\dots(n+n)}{n^n} + 1$$
$$\frac{(n+1)(n+2)(n+3)\dots(n+n)}{n^n} - (n+1)$$

Department of Humanities
U. I. E. T., C. J. M. University

Professional Communication (HSS-S 101), Branch **ECE**

Semester: 2023 (1st Odd Sem.)

Year: 1st Year (2K23)

Mid Semester Examination

Time: 1.5h

Total Marks: 30

Section A

Q1. Attempt all questions:

(1x9=9)

- Identify the barrier:** Student: Due to network issues, I couldn't submit the application on time.
- Identify the barrier:** Rita: I am feeling nervous to give the presentation.
Sita: You are always giving excuses.
- Identify the barrier:** My father was born in Hyderabad only.
- Identify the barrier:** Ram: (With a sad look, ☹) Congratulations! You secured the highest marks.
- Identify the barrier:** Women don't know to drive.
- Choose the appropriate word:** The _____ of money you make in a year depends on the number of _____ you close. (amount, deals)
- Choose the appropriate word:** It's difficult to _____ things that one does not _____ . (expect, anticipate)
- Choose the appropriate word:** _____ her duty to look after the employees' well-being (it's/its)
- Fill in the correct word form:** The supervisor punished the candidates for their _____. (conduct)

Section B

2. Attempt any three of the following:

(3x3=9)

- How is the interpersonal level of communication different from intra personal level of communication?
- Discuss the role of the sender in the process of communication.
- What are semantic barriers? Give two examples.
- Write a short note on the grapevine.

Section C

3. Attempt any two of the following:

(2x6=12)

1. Explain the features of the downward flow of communication in an organization.

P.T.O

2. How is general-purpose communication different from technical communication? Explain by constructing sentences for the same.

3. Explain the following terms with reference to barriers in communication:

a. Information overload

b. Emotional outburst

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY, CSJM UNIVERSITY, KANPUR

(Subject Name: Basic Electrical & Electronics Engineering)
(Subject Code: ESC-S101) [Branch: ECE ~~Electronics~~]

Semester: 2022-23 (Odd Semester)

Year: 1st Year (2K23)

First mid Semester Examination Aug - 2023

Time: 1.5 h

Maximum marks: 30

All questions are compulsory

E C E

Section A

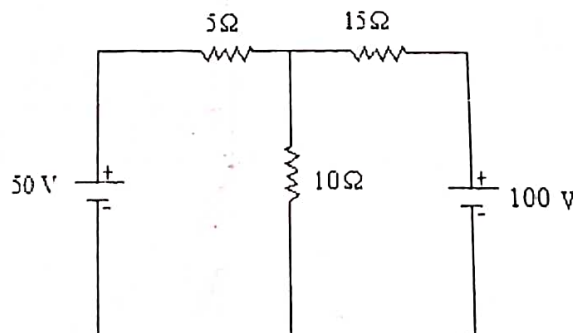
Note: 9 marks (9 questions of 1 mark each)

1. Define Active element & passive elements?
2. What is maximum power transfer theorem?
3. Define Active element & passive elements.
4. State KCL & KVL?
5. What is source transformation
6. State Norton Theorem.
7. Why do we use network theorems and techniques to solve electrical circuits?
8. Explain ohm's Law.
9. Explain open circuit and short circuit.

Section B

Note: 9 marks (3 questions of 3 marks each)

1. Explain Maximum power transfer theorem and derive the condition for maximum power transfer.
2. Determine the current through the 10 ohm resistance by using thevenin theorem.



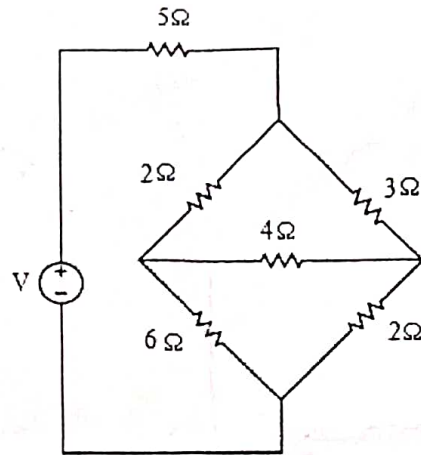
3. Derive the expression for converting a delta network to a star equivalent network.

Section C

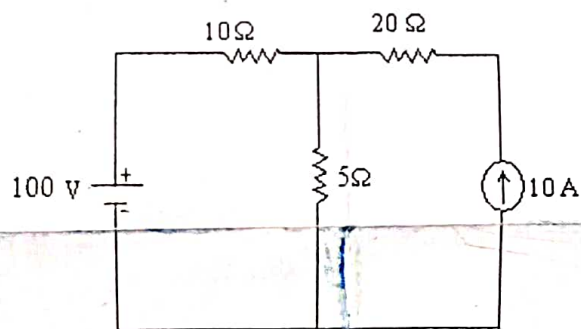
Note: 12 marks (2 questions of 6 marks each)

1. Find the current drawn from the source for a circuit given in the figure.

P.T.O.



2. Find the currents in all the resistive branches of the circuit shown in below figure by using nodal theorem.



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