

WORKSHEET-19

SUBJECT – MATHEMATICS

CLASS – IX

CHAPTER-06

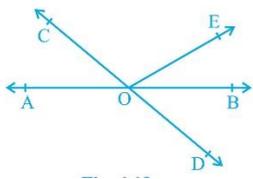
(LINES AND ANGLES)

SESSION - (2020-21)

Instructions to be followed: -

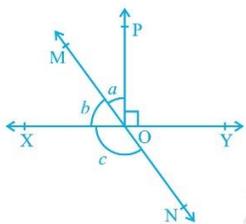
- 1: -From now onwards students do your worksheets in your particular subject notebook respectively. Don't use rough sheets, old copies or anything else. All the stationary shops have already opened. So, you can purchase it.
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Q1. In given Fig lines AB and CD intersect at O. If $\angle AOC + \angle BOE = 70^\circ$ and $\angle BOD = 40^\circ$, find $\angle BOE$ and reflex $\angle COE$.



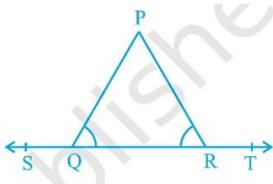
For solution watch video in given link: <https://www.youtube.com/watch?v=SKK3yA31I-o>

Q2. In given Fig lines XY and MN intersect at O. If $\angle POY = 90^\circ$ and $a : b = 2 : 3$, find c.



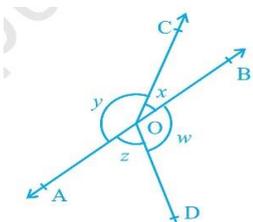
For solution watch video in given link: <https://www.youtube.com/watch?v=96iT6SKkT40>

Q3. In given Fig $\angle PQR = \angle PRQ$, then prove that $\angle PQS = \angle PRT$.



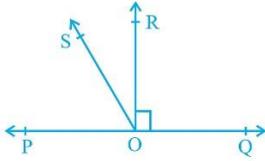
For solution watch video in given link: https://www.youtube.com/watch?v=nxWxGK_uLig

Q4. In given Fig if $x + y = w + z$, then prove that AOB is a line.



For solution watch video in given link: <https://www.youtube.com/watch?v=t3yl-0uIFkk>

Q5. In given Fig POQ is a line. Ray OR is perpendicular to line PQ. OS is another ray lying between rays OP and OR. Prove that $\angle ROS = \frac{1}{2} (\angle QOS - \angle POS)$.



For solution watch video in given link: <https://www.youtube.com/watch?v=tZZs623AiWw>

Q6. It is given that $\angle XYZ = 64^\circ$ and XY is produced to point P. Draw a figure from the given information. If ray YQ bisects $\angle ZYP$, find $\angle XYQ$ and reflex $\angle QYP$.

For solution watch video in given link: <https://www.youtube.com/watch?v=540e8mAnra4>

NOTE: please visit the links given with the question for understanding the solution.

HARI VIDYA BHAWAN
SUBJECT- SOCIAL SCIENCE
CLASS – IX
SESSION – 2020 – 21
WORK SHEET -19

Date – 10-07-2020

General Instructions: -

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ECONOMICS Ch- 2 (People as Resources)

- **Impact of unemployment**
 - i) Wastage of manpower.
 - ii) People who are asset become liability.
 - iii) Feeling of hopelessness and despair.
 - iv) Tends to increase economic overload.
 - v) More dependency on working population.
 - vi) Quality of populated is affected.

vii) Decline in health status of population.

- **Difference between human capital and physical capital**

Physical capital	Human capital
Any non-human asset made up by humans and then used in production it is known as physical capital	When the existing 'human resource is further developed by becoming more educated and healthy, we call it human capital formation that adds to the productive powers of country
It is tangible and can be sold in the market e.g goods like bus or a machine.	It is no tangible and cannot be sold in the market because it is naturally built in the mind and body of its owner, only the service of human capital can be sold.
It is separable from its owner.	Human capital is inseparable from its owner.
It benefits only the owner.	It benefits not only the owner but the society in general.
It cannot become useful on its own.	It can make use of physical capital.

Long Question:-

1. Distinguish between physical capital and human capital?

Note:-

- To understand the all the important topics in the chapter, watch the video via link: -

https://www.youtube.com/watch?v=6spA_XWCxiU&t=127s

हार विद्या मठ
विषय :- हिन्दी

सामान्य निर्देश

- ① पुर-तुत कार्य अपनी हिन्दी साहित्य की पुस्तिका में कीजिए। किसी अन्य पुस्तिका में किया गया कार्य स्वीकार नहीं किया जाएगा।
- ② सभी विद्यार्थियों को ईकाई परीक्षा के लिए पुर-तुत कार्य पूर्ण करना अनिवार्य है।
- ③ वर्कशीट में दिए गए पाठ एवं कविता को ध्यानपूर्वक पढ़ें।
- ④ सभी विद्यार्थियों को पाठ एवं कविता को समझने के लिए हिन्दी की पुस्तक लेना अनिवार्य है।
- ⑤ वर्कशीट से संबंधित समस्या पढ़ने के लिए आप अपने कक्षा गुप पर सुबह 10 बजे से 12 बजे तक तथा शाम को 4 बजे से 6 बजे तक मैरिज कर सकते हैं।

द्वि विद्या भवन
 कक्षा :- दूसरी
 विषय :- हिन्दी
 वर्कशीट :- 22

दिनांक :- 10/11/20

(पुरस्क :- संचयन)

पाठ :- सपनों के से दिन

लेखक :- गुरुदयाल सिंह

Q.1) पुरस्क सपनों के उत्तर दीजिए ।

1) कोई भी आपा आपसी व्यवहार में बाधा नहीं बूनी - पाठ के किस अंश से यह सिद्ध होता है ?

2) पीटी साहब की आवाज फौज के तमगों - सी क्यों लगती थी ? स्पष्ट कीजिए ।

3) नयी श्रेणी में जाने और नयी कार्रियों और पुरानी किताबों से आती विशेष गंध से लेखक का बालमन क्यों उद्वेग हो उठता था ?

4) स्काउट परेड करते समय लेखक अपने को महत्वपूर्ण आरामी फौजी जवान क्यों समझने लगता था ?

5) हेडमास्टर शर्मा जी ने पीटी साहब को क्यों मुआवज़ कर दिया ?

6) लेखक के अनुसार उन्हें स्कूल खर्चा से आगा जाने की जगह न लगाने पर भी कब और क्यों उन्हें स्कूल जाना उठना लगाने लगा ?

7) लेखक अपने छात्र जीवन में स्कूल से दृष्टियों में मिले काम को पूरा करने के लिए क्या-क्या योजनाएँ बनाया करता था ? और उसे पूरा न कर पाने की स्थिति में किसकी आँत बहादुर बनने की कल्पना किया करता था ?

8) पाठ में वर्णित घटनाओं के आधार पर पीटी सर की चरित्रिक विशेषताओं पर प्रकाश डालिए।

9) विद्यार्थियों को अनुशासन में रखने के लिए पाठ में अपनाई गई युक्तियाँ और वर्तमान में स्वीकृत मान्यताओं के संबंध में अपने विचार व्यक्त कीजिए।

10) कथाकलाप :- प्रस्तुत पाठ की कहानी अपने शब्दों में लिखिए।

(YouTube Link :- <https://youtu.be/fya786VK4e1>)

HARI VIDYA BHAWAN

Worksheet-22

Class-X

Subject-Science

Session-2020-21

Ch-13: Magnetic effects of electric current

Date:10/07/2020

Instructions to be followed :-

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-

Magnet: Magnet is an object that attracts objects made of iron, cobalt and nickle. Magnet comes to rest in North – South direction, when suspended freely.

Use of Magnets: Magnets are used

- in refrigerators.
- in radio and stereo speakers.
- in audio and video cassette players.
- in children's toys and;
- on hard discs and floppies of computers.

Properties of Magnet:

- A free suspended magnet always points towards the north and south direction..

- Like poles of magnets repel each other while unlike poles of magnets attract each other.

Magnetic field:

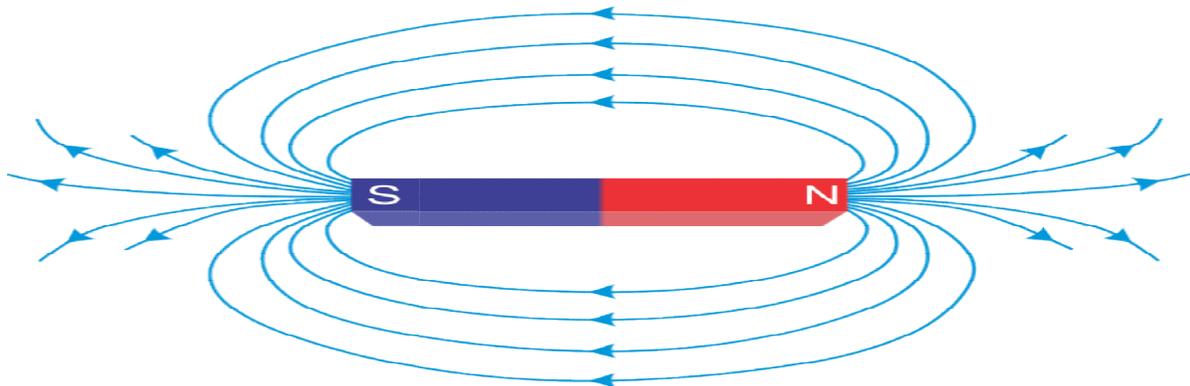
- The area around a magnet where a magnetic force is experienced is called the **magnetic field**.
- It is a quantity that has both direction and magnitude, (i.e., Vector quantity).
- In the magnetic field, the force exerted by a magnet can be detected using a compass or any other magnet.
The magnetic field is represented by magnetic field lines.

Magnetic Field Lines :

Magnetic field lines are the lines drawn in a magnetic field along which a north magnetic pole would move.

Properties of Magnetic Field Lines:

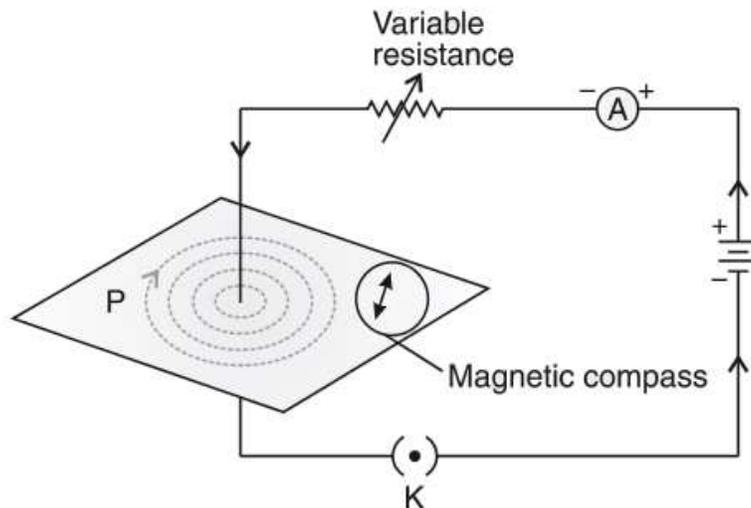
1. Magnetic field lines originate from North Pole and end at South Pole.
2. Magnetic field lines come closer to one another near the poles of magnet but widely separated at other places.
3. Magnetic field lines do not intersect each other.
4. They are closed and continuous curves.
5. **Direction of field line:** Outside the magnet, the direction of magnetic field line is taken from North pole to South Pole. Inside the magnet, the direction of magnetic field line is taken from South pole to North pole.
6. **Strength of magnetic field:** The closeness of field lines shows the relative strength of magnetic field, i.e. closer lines show stronger magnetic field and vice – versa. Crowded field lines near the poles of magnet show more strength.



❖ Magnetic field lines due to a current through a straight conductor

- Magnetic field of current carrying straight conductor can be shown by magnetic field lines.

The direction of magnetic field through a current carrying conductor depends upon the direction of flow electric current.



Properties of magnetic field

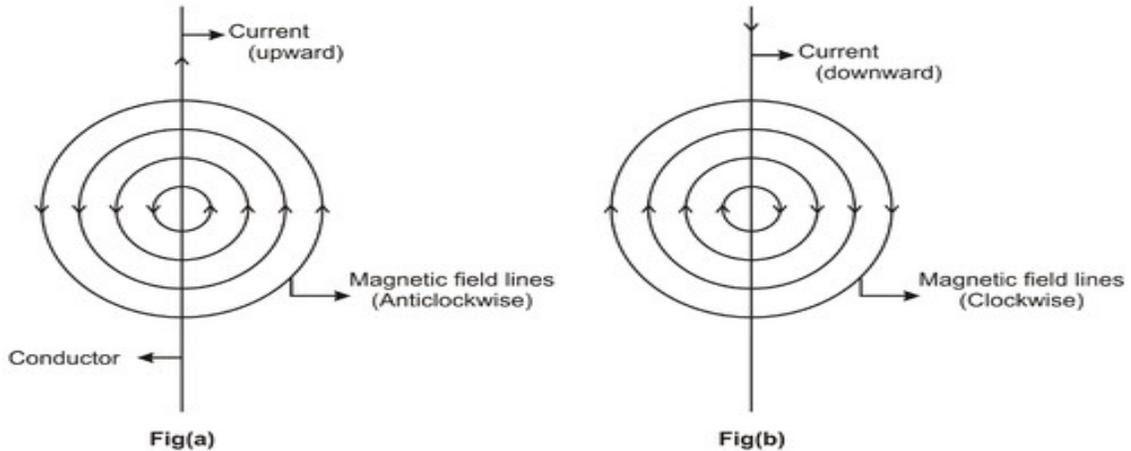
- A current carrying straight conductor has magnetic field in the form of concentric circles, around it.
- The magnitude of magnetic field increases with increase in electric current and decreases with decrease in electric current.

Magnetic field \propto Strength of current

- The magnitude of magnetic field produced by electric current decreases with increase in distance and vice – versa.

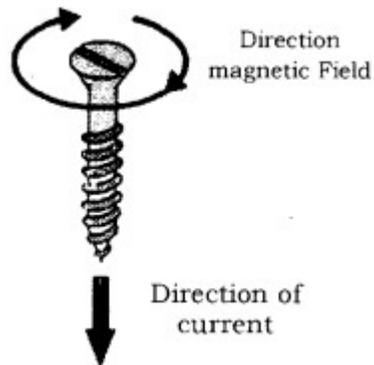
Magnetic field \propto 1/ Distance from conductor

- Circles are closer near the conductor.



The direction of magnetic field, in relation to direction of electric current through a straight conductor can be depicted by using the Right Hand Thumb Rule. It is also known as Maxwell's Corkscrew Rule.

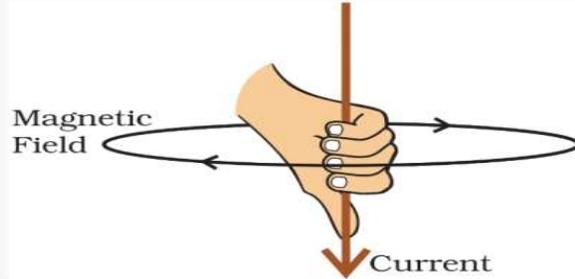
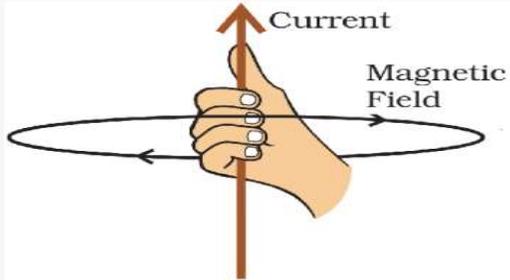
Maxwell's Corkscrew rule: As per Maxwell's Corkscrew Rule, if the direction of forward movement of screw shows the direction of the current, then the direction of rotation of screw shows the direction of magnetic field.



Right Hand Thumb Rule

Right hand thumb rule states that if we hold the current carrying wire in the right hand and if the thumb points towards the current, the direction in which the fingers encircle or **wrap around the conductor** gives the direction of Magnetic field.

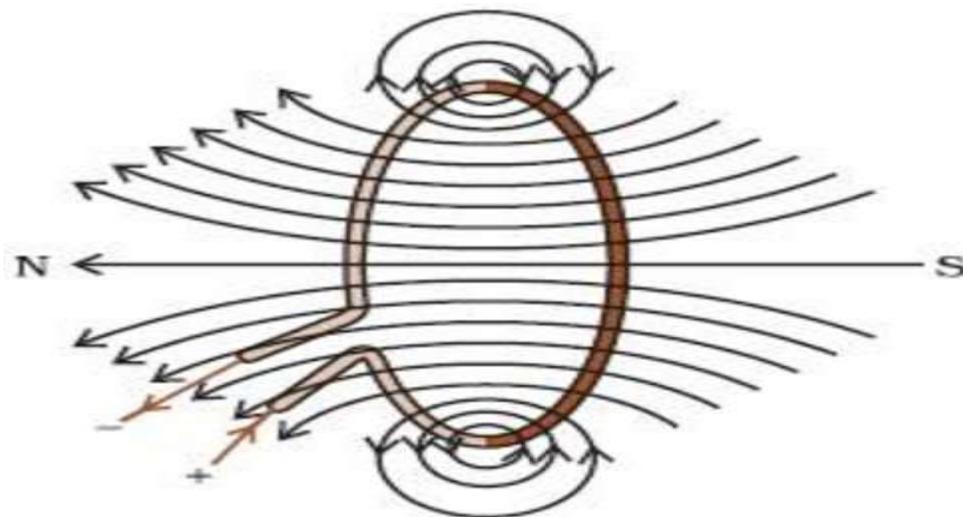
Maxwell's Right Hand Thumb Rule



❖ Magnetic field lines due to a current through a circular loop

Properties of magnetic field

- The direction of the magnetic field can be identified using Right Hand Thumb's Rule.
- It can be represented by concentric circles at every point.
- Circles becomes larger and larger as we move away.
- Every point in wire carrying current would give rise to magnetic field appearing as straight at centre of the loop.
- The direction of magnetic field inside the loop is same.



➤ **Factors on which the strength of magnetic field depends upon:**

- (i) **The radius of the coil:** The strength of the magnetic field is inversely proportional to the radius of the coil. If the radius increases, the magnetic strength at the centre decreases.

Magnetic field \propto 1/ Distance from conductor

- (ii) **The number of turns in the coil :** As the number of turns in the coil increase, the magnetic strength at the centre increases, because the current in each circular turn is having the same direction, thus, the field due to each turn adds up.

Magnetic field \propto No of turns of the coil

- (iii) **The strength of the current flowing in the coil:** As the strength of the current increases, the strength of three magnetic fields also increases.

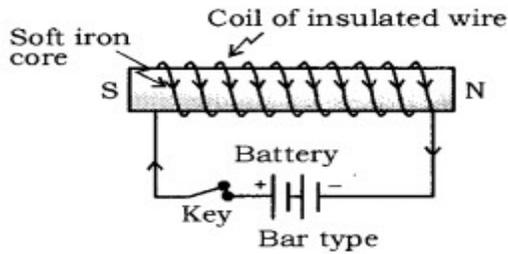
Magnetic field \propto Strength of current

❖ **Magnetic field due to a current in a Solenoid:**

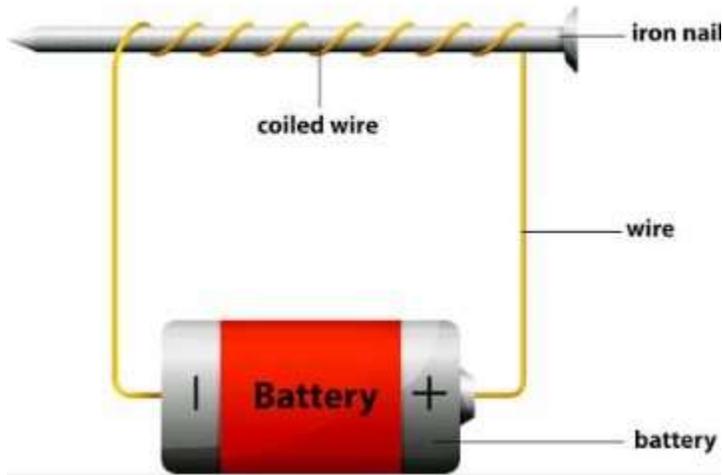
- **Solenoid is the coil with many circular turns of insulated copper wire wrapped closely in the shape of a cylinder.**
- A current carrying solenoid produces similar pattern of magnetic field as a bar magnet.
- One end of solenoid behaves as the north pole and another end behaves as the south pole.
- **Magnetic field lines are parallel inside the solenoid**, similar to a bar magnet, which shows that magnetic field is same at all points inside the solenoid..
- The strength of magnetic field is proportional to the number of turns and magnitude of current.
- By producing a strong magnetic field inside the solenoid, magnetic materials can be magnetized. Magnet formed by producing magnetic field inside a solenoid is called electromagnet.

Electromagnet:

An electromagnet consists of a long coil of insulated copper wire wrapped on a soft iron. Magnet formed by producing magnetic field inside a solenoid is called electromagnet.



Simple Electromagnet



Difference Between Electromagnet and Permanent Magnet

Electromagnet	Permanent Magnet
The magnetic properties are displayed when current is passed through it	Magnetic properties exist when the material is magnetized
The strength can be varied .depending upon the amount of flow of current	The strength is fixed ,it depends upon the nature of the material used in its creation
Removal of magnetic properties is temporary	Once magnetic properties is lost, it becomes useless
It requires a continuous supply of electricity to maintain its magnetic field.	It doesn't require a continuous supply of electricity to maintain its magnetic field
It is usually made of soft materials	It is usually made of hard materials
Generally strong magnet.	Generally weak magnet..

The polarity can be reversed with the flow of current.	The polarity cannot be changed .
Example : <u>Bar Magnet</u>	Example : Solenoid

Answer the following questions:

1. Why does a compass needle get deflected when brought near a bar magnet ?
2. Draw magnetic field lines around a bar magnet.
3. Why don't two magnetic lines of force intersect each other ?
4. Consider a circular loop of wire lying on the plane of the table. Let the current pass through the loop clockwise. Apply the right hand rule to find out the direction of the magnetic field inside and outside the loop.
5. The magnetic field in a given region is uniform. Draw a diagram to represent it.
6. Choose the correct option.
The magnetic field inside a long straight solenoid-carrying current
 - (i) is zero
 - (ii) decreases as we move towards its end
 - (iii) increases as we move towards its end
 - (iv) is the same at all points

NOTE:

- ❖ **Above questions are given from NCERT blue box questions . (page no 224, 228, 229 and 230). For solution check the NCERT solution app.**
- **Click over the link to get the knowledge about magnetic field and field lines:**
<https://www.youtube.com/watch?v=p2UssEcsmcM>
<https://www.youtube.com/watch?v=e44-lbTo3C4>
- **Click over the link to get the knowledge about magnetic field around straight conductor:**
https://www.youtube.com/watch?v=zv4t_4fHvn4
- **Click over the link to get the knowledge about magnetic field due to circular coil:**
<https://www.youtube.com/watch?v=oppkZ1bZfto>
- **Click over the link to get the knowledge about solenoid :**
<https://www.youtube.com/watch?v=gvStnZA1Dxw>
https://www.youtube.com/watch?v=ISg_9Wmi5J8

➤ **Click over the link to get the knowledge about magnetic effects of electric current:**

https://www.youtube.com/watch?v=RdQneI_yHJE
