NEW STANDARD ACADEMY

Marks: 80

06-01-2025 **CLASS : 9 TH** **Time: 3 HRS**

PHYSICS

1. Explain the working and application of a sonar.
2. What are wavelength, frequency,time period and amplitude of a sound wave?
3. A submarine emits a sonar pulse, Which returns from an underwater cliff in 1.02s. If the speed of sound in salt water is 1531 m/s, how far away is the cliff?
4. Velocity of sound increases on a cloudy day. Why?
5. Explain why echoes can't be heard in a small room.
6. A SONAR echo taken 2.2 s to return from a whale. How far away is the whale?(Take the speed of sound in sea water at 25℃ = 1533 ms^{-1})
7. A stone is dropped from the top of tower 500 m high into a pond of water at the base of the tower. When is the splash heard at the top? Given g = 10ms^{-2} and speed of sound = 340 ms^{-1}.
8. A person hears an echo from top of a tower 2.2 second after the sound is produced. How far away is the tower from the person? Speed of the sound in air is 332 m/s.
9. Three persons A ,B and C are made to hear a sound travelling through different medium as giver below

Person	Medium
A	Iron road
B	Air
C	Water

Who will hear the sound first? Why?

10. Give three application of ultrasound.

CHEMISTRY

1. What are cathode rays and canal rays?
2. What is the value of absolute charge on electron, proton?
3. What is the value of relative charge on electron, proton?
4. What is the value of absolute mass of electron, proton?
5. Compare the characteristics of electron, proton?
6. What is the difference between cathode rays and canal rays?
7. What mass of silver nitrate will react with 5.85 g of sodium chloride to produce 14.35 g of süver chloride and 8.5 g of sodium nitrate if the law of conservation of mass is true?
8. Define polyatomic ions with examples.
9. Give an example of molecules of element and molecules of compound.
10. Valency of phosphorus is 3 and 5. Write the formulae of its oxides and chlorides.

BIOLOGY

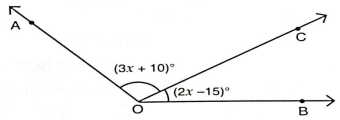
1. What is the specific function of the cardiac muscle?
2. Draw a labellel diagram of a neuron.
3. Determine the location of the following tissues:
   (a) Unstriated muscle fibres
   (b) Cuboidal epithelium
   (c) Adipose tissue
   (d) Striated muscle fibres
4. Write one important functional difference between striated and smooth muscle tissues.
5. Write two locations of the following animal tissues:
   (i) Simple squamous epithelial cells
   (ii) Cuboidal epithelium
6. Name two types of : (i)| Fibres (ii) Cells. Found in areolar connective tissue .Where is thistissue located?
7. (a) Mention different types of blood cells.
   (b) Which substances are transported by blood?
8. Name the tissue found in the following locations:
   a) Haversian Canal,

b) Chondrocyte
c) Eosinophils
Give one function of each of these.

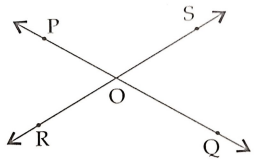
9. Why are skeletal muscles known as striated muscles?
10. State the feature of cardiac muscles which makes it unique.

MATHS

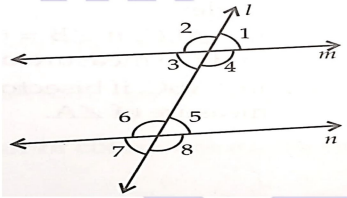
1. In the adjoining figure ,what value of x will make AOB a Straight line?



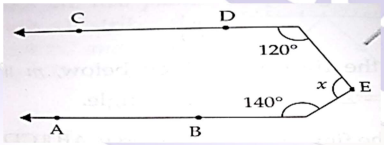
2. In the adjoining figure line PQ and RS intersect each other at the point O. If $\angle POR : \angle ROQ = 5:7$, find all the angle.



3. Two angle measure$(30° - x)$ *and* 125°+x). If each angle is the supplement of the other find the angles.
4. In the adjoining figure ,if m||n then find $\angle 4 + \angle 7$.



5. In the figure given below, AB||CD. Find the value of x.



6. In a circle with center o, chord SR=chord SR=chord SM. Radius OS intersects the chord RM at p. Prove that RP=PM.
7. The lengths of two parallel chords of a circle are 6cm and 8cm .if the smaller chord is at a distance of 4 cm from the centre, find the distance of the other chord from the centre.
8. AB and AC are two chords of a circle of radius r such that AB=2AC. If p and q are the distances of AB and Ac from the centre, prove that $4q^2=p^2+3r^2$.
9. If two circle intersect at two points prove that their centres lie on the perpendicular bisector of the common chord.
10. Two circles of radii 5cm and 3cm intersect at two points and the distance between their centres is 4cm .Find the length of the common chord.