

Note:- Section B is compulsory. Attempt any two (2) questions from Section C.

نوٹ: حصہ دوم لازمی ہے۔ حصہ سوم میں سے کوئی سے دو سوالوں کے جوابات لکھئے۔

(SECTION-B حصہ دوم)

2. Write short answers to any five parts. (5x2=10)
- State Ohm's Law and give its equation.
 - How many watt-hours are there in 1000 Joules?
 - What is transformer, on what principle it works?
 - State Faraday's Law of electromagnetic induction.
 - What is the difference between atomic number and atomic mass?
 - Write the " α -decay" process by equation for $^{226}_{88}\text{Ra}$ (Radium).
 - Define Kilowatt Hour also write formula to find energy in kilowatt hour.
 - Define Fission Reaction and write its equation.
3. Write short answers to any five parts. (5x2=10)
- How does the distance of vibrating body affect the loudness of sound?
 - What is the relationship between pitch and frequency of sound?
 - Give an example of each charging by friction of plastic and glass rods.
 - What is meant by an electroscope? Is it easy or difficult to use?
 - What is a flash drive?
 - What are main services used on the internet? Write their properties.
 - Give a relationship between speed, frequency and wavelength of sound.
 - Why the speed of sound is greater in liquids than glass?
 - What is Capacitor? Define its Capacitance.
4. Write short answers to any five parts. (5x2=10)
- Differentiate between time period and frequency.
 - Derive a relationship between velocity, frequency and wavelength of wave.
 - Define Damped Oscillations.
 - State Snell's Law and write its formula also.
 - Differentiate between convex and concave lens.
 - A ray of light enters from air into glass. The angle of Incidence is 30° . If refractive index of glass is 1.52 then find the angle of refraction ' r '.
 - Which logic gate is called inverter? Draw its symbolic diagram.
 - Differentiate between analogue electronics and digital electronics.

SECTION - C (Each question carries nine 09 Marks)

حصہ سوم (ہر سوال کے نو نمبر ہیں)

5. (a) Define Electromotive Force. Explain with schematic diagram for measuring potential difference in a circuit. (1+3)
- (ب) کاربن-14 کی ہاٹ لائف 5730 سال ہے۔ کاربن-14 کی ابتدائی مقدار کا $\frac{1}{8}$ تک کم ہو جانے کے لئے کتنا وقت درکار ہوگا؟ (5)
- (b) Carbon-14 has a half-life of 5730 years. How long will it take for the quantity of carbon-14 in a sample to drop to one-eighth of the initial quantity?
6. (a) Indicate two dangers in use of I.C.T in society. (2+2)
- Write some steps to avoid these dangers.
- (ب) ایک خاص نمبر پرچہ جو ایس میں ساؤنڈ کی سپیڈ 330ms^{-1} ہے۔ اگر دیو-لنگتھ 5cm ہو تو ساؤنڈ ویو کی فریکوئنسی معلوم کیجئے۔ کیا یہ فریکوئنسی انسانی کان کیلئے قابل سماعت ساؤنڈ کی مدد میں واقع ہے؟ (5)
- (b) At a particular temperature, the speed of sound in air is 330ms^{-1} . If the wavelength of a note is 5cm, calculate the frequency of the sound wave. Is this frequency in the audible range of the human ear?
7. (a) Explain with an activity "waves as carrier of energy". (2+2)
- (ب) ایک جسم مرر سے 34.4cm کے فاصلہ پر ہذا ہے۔ اس کی امیج مرر کے پیچھے 5.66cm پر بنتی ہے۔ مرر کی فوکل لنگتھ معلوم کیجئے نیز بتائیے مرر کنکویو ہے یا کنویکس؟ (5)
- (b) Find the focal length of a mirror that forms an image 5.66cm behind the mirror of an object placed at 34.4cm in front of the mirror. Is the mirror concave or convex?