

Class 11- पाठ याद करे

नमक का दरोगा

मियां नसरुद्दीन

अपू के साथ ढाई साल

कबीर और मीरा के पद

घर की याद

चम्पा काले काले अक्षर नहीं

पाठ. 2 वितान बुक से याद करे

प्रोजेक्ट टॉपिक तैयार करे

क्लास 12_ याद करे

पाठ 4 याद kare

पहली 5 कविता

पहली 2 पाठ वितान बुक से

प्रोजेक्ट टॉपिक तैयार

1 simple paper doing for practice

बहुविषयक गृहकार्य. समाज मे सिनेमा का प्रभाव

CHAPTER 1. (UNIT AND DIMENSIONS)

Q.1 Fill in the blanks by suitable conversion of units.

(a) $1 \text{ kg m}^2 \text{ s}^{-2} = \dots \text{g cm}^2 \text{ s}^{-2}$

(b) $1 \text{ m} = \dots \text{ly}$

(c) $3.0 \text{ m s}^{-2} = \dots \text{km h}^{-2}$

(d) $G = 6.67 \times 10^{-11} \text{ N m}^2 (\text{kg})^{-2} = \dots (\text{cm})^3 \text{s}^{-2} \text{g}^{-1}$

Q.2 A calorie is a unit of heat (energy in transit), which equals about 4.2 J, where $1 \text{ J} = 1 \text{ kg m}^2 \text{ s}^{-2}$. Suppose we employ a system of units in which the unit of mass equals $\alpha \text{ kg}$, the unit of length equals $\beta \text{ m}$, and the unit of time is $\gamma \text{ s}$. Show that a calorie has a magnitude of $4.2 \alpha^{-1} \beta^{-2} \gamma^2$ in terms of the new units.

Q.3 State the number of significant figures in the following:

(a) 0.0089 m^2

(b) $2.6334554 \times 10^{24} \text{ kg}$

(c) $0.23740000 \text{ g cm}^{-3}$

(d) 6.32980 J

(e) 6.032 N m^{-2}

(f) 0.0006032 m^2

Q.4 The unit of length convenient on the nuclear scale is a fermi: $1 \text{ f} = 10^{-15} \text{ m}$. Nuclear sizes obey roughly the following empirical relation : $r = r_0 A^{1/3}$ where r is the radius of the nucleus, A its mass number, and r_0 is a constant equal to about 1.2 f. Show that the rule implies that nuclear mass density is nearly constant for different nuclei. Estimate the mass density of the sodium nucleus. Compare it with the average mass density of a sodium atom.

अध्याय 1. (मापन एवं विमाएँ)

प्रश्न 1. इकाइयों के उपयुक्त रूपांतरण द्वारा रिक्त स्थानों की पूर्ति कीजिए।

(a) $1 \text{ kg m}^2 \text{ s}^{-2} = \dots \text{g cm}^2 \text{ s}^{-2}$

(b) $1 \text{ m} = \dots \text{ly}$

(c) $3.0 \text{ m s}^{-2} = \dots \text{km h}^{-2}$

(d) $G = 6.67 \times 10^{-11} \text{ N m}^2 (\text{kg})^{-2} = \dots (\text{cm})^3 \text{s}^{-2} \text{g}^{-1}$

प्रश्न 2. एक कैलोरी ऊष्मा (संक्रमण ऊर्जा) की एक इकाई है, जो लगभग 4.2 J के बराबर होती है, जहाँ $1 \text{ J} = 1 \text{ kg m}^2 \text{ s}^{-2}$ है। मान लीजिए कि हम इकाइयों की एक प्रणाली का उपयोग करते हैं जिसमें द्रव्यमान की इकाई $\alpha \text{ kg}$ के बराबर होती है, लंबाई की इकाई $\beta \text{ m}$ के बराबर होती है, और समय की इकाई $\gamma \text{ s}$ होती है। दर्शाइए कि नई इकाइयों के संदर्भ में एक कैलोरी का परिमाण $4.2 \alpha^{-1} \beta^{-2} \gamma^2$ है।

प्रश्न 3. निम्नलिखित में सार्थक अंकों की संख्या बताइए:

- (a) 0.0089 m^2
- (b) $2.6334554 \times 1024 \text{ kg}$
- (c) $0.23740000 \text{ g cm}^{-3}$
- (d) 6.32980 J
- (e) 6.032 N m^{-2}
- (f) 0.0006032 m^2

प्रश्न 4. नाभिकीय पैमाने पर लंबाई की सुविधाजनक इकाई फर्मी है: $1 \text{ f} = 10^{-15} \text{ m}$ । नाभिकीय आकार मोटे तौर पर निम्नलिखित अनुभवजन्य संबंध का पालन करते हैं: $r = r_0 A^{1/3}$ जहाँ r नाभिक की त्रिज्या है, A इसकी द्रव्यमान संख्या है, और r_0 एक स्थिरांक है जो लगभग 1.2 f के बराबर है। दर्शाइए कि नियम का तात्पर्य है कि विभिन्न नाभिकों के लिए नाभिकीय द्रव्यमान घनत्व लगभग स्थिर रहता है। सोडियम नाभिक के द्रव्यमान घनत्व का आकलन कीजिए। इसकी तुलना सोडियम परमाणु के औसत द्रव्यमान घनत्व से कीजिए।

CHAPTER 2 (MOTION IN STRAIGHT LINE)

Q.1 The displacement of a body is proportional to t^3 , where t is time elapsed. What is the nature of acceleration-time graph of the body?

Q 2. The odometer of Raja's car reads 1700 km at the start of a trip and 2500 km at the end of the trip. The trip took 16 h. What is the average speed of Raja's car in ms^{-1} ?

Q 3. The position of an object is given by $x = 2t^2 + 3t$. Find out that its motion is uniform or non - uniform.

Q 4. Two town A and B are connected by a regular bus service with a bus leaving in either direction every T min. A man cycling with a speed of 20 kmh^{-1} in the direction A to B notices that a bus goes past him every 18 min in the direction of his motion, and every 6 min in the opposite direction. What is the period T of the bus service and with what speed do the buses ply of the road?

Q.5 A ball is thrown upward with an initial velocity of 100 m/s . After how much time will it return? Draw velocity-time graph for the ball and find from the graph.

- i. Maximum height attained by the ball.
- ii. Height of the ball after 15 s. Take $g = 10 \text{ ms}^{-1}$

अध्याय 2 (सीधी रेखा में गति)

प्रश्न 1. किसी पिंड का विस्थापन t के समानुपाती है, जहाँ t बीता हुआ समय है। पिंड के त्वरण-समय ग्राफ की प्रकृति क्या है?

प्रश्न 2. राजा की कार का ओडोमीटर यात्रा के आरंभ में 1700 किमी और यात्रा के अंत में 2500 किमी दिखाता है। यात्रा में 16 घंटे लगे। राजा की कार की औसत गति ms^{-1} में क्या है?

प्रश्न 3. किसी वस्तु की स्थिति $x = 2t^2 + 3t$ द्वारा दी गई है। ज्ञात कीजिए कि इसकी गति एकसमान है या असमान।

प्रश्न 4. दो शहर A और B एक नियमित बस सेवा द्वारा जुड़े हुए हैं, जिसमें प्रत्येक T मिनट में एक बस किसी एक दिशा में चलती है। A से B दिशा में 20 किमी/घंटा की गति से साइकिल चला रहा एक व्यक्ति देखता है कि उसकी गति की दिशा में हर 18 मिनट में एक बस उसके पास से गुजरती है, और विपरीत दिशा में हर 6 मिनट में एक बस उसके पास से गुजरती है। बस सेवा की अवधि T क्या है और बसें सड़क पर किस गति से चलती हैं?

प्रश्न 5. एक गेंद को 100 मीटर/सेकेंड के प्रारंभिक वेग से ऊपर की ओर फेंका जाता है। कितने समय बाद यह वापस आएगी? गेंद के लिए वेग-समय ग्राफ खींचिए और ग्राफ से ज्ञात कीजिए।

i. गेंद द्वारा प्राप्त अधिकतम ऊँचाई

ii. 15 सेकंड के बाद गेंद की ऊँचाई $g = 10 \text{ ms}^{-2}$ लीजिए।

CHAPTER 3 (MOTION IN PLANE)

Q 1. A passenger arriving in a new town wishes to go from the station to a hotel located 10 km away on a straight road from the station. A dishonest cabman takes him along a circuitous path 23 km long and reaches the hotel in 28 min. What is :

a. the average speed of the taxi?

b. the magnitude of average velocity? Are the two equal?

Q 2. At what point of projectile motion (i) potential energy maximum (ii) Kinetic energy maximum (iii) total mechanical energy is maximum?

Q 3. A particle starts from origin at $t = 0$ with a velocity 5 m/s and moves in xy-plane under action of a force which produces a constant acceleration of $(3 + 2) \text{ m/s}^2$

i. What is the y-coordinate of the particle at the instant its x-coordinate is 84 m?

ii. What is the speed of the particle at this time?

Q 4. On an open ground, a motorist follows a track that turns to his left by an angle of 60° after every 500 m. Starting from a given turn, specify the displacement of the motorist at the third, sixth and eighth turn. Compare the magnitude of the displacement with the total path length covered by the motorist in each case.

Q 5. The position of a particle is given by $r = 2.5 t^2 + 5.0 t$ where t is in seconds and the coefficients have the proper units for r to be in metres.

i. Find $v(t)$ and $a(t)$ of the particles.

ii. Find the magnitude and the direction of $v(t)$ at $t = 2.0 \text{ s}$.

अध्याय 3 (समतल में गति)

प्रश्न 1. एक नए शहर में पहुँचने वाला एक यात्री स्टेशन से सीधी सड़क पर 10 किमी दूर स्थित एक होटल जाना चाहता है। एक बेईमान टैक्सीवाला उसे 23 किमी लंबे घुमावदार रास्ते पर ले जाता है और 28 मिनट में होटल पहुँचा देता है। क्या है:

a. टैक्सी की औसत गति?

b. औसत वेग का परिमाण? क्या दोनों बराबर हैं?

प्रश्न 2. प्रक्षेप्य गति के किस बिंदु पर (i) स्थितिज ऊर्जा अधिकतम (ii) गतिज ऊर्जा अधिकतम (iii) कुल यांत्रिक ऊर्जा अधिकतम होती है?

प्रश्न 3. एक कण मूल बिंदु से $t = 0$ पर 5 मीटर/सेकेंड वेग से चलना शुरू करता है और एक बल की क्रिया के तहत xy-तल में गति करता है जो $(3 + 2)$ मीटर/सेकेंड का स्थिर त्वरण उत्पन्न करता है।

i. उस क्षण कण का y-निर्देशांक क्या है जब उसका x-निर्देशांक 84 मीटर है?

ii. इस समय कण की गति क्या है?

प्रश्न 4. एक खुले मैदान में, एक मोटर चालक एक पथ का अनुसरण करता है जो प्रत्येक 500 मीटर के बाद उसके बाईं ओर 60° के कोण पर मुड़ता है। दिए गए मोड़ से शुरू करते हुए, तीसरे, छठे और आठवें मोड़ पर मोटर चालक के विस्थापन को निर्दिष्ट करें। प्रत्येक स्थिति में मोटर चालक द्वारा तय की गई कुल पथ लंबाई के साथ विस्थापन के परिमाण की तुलना करें।

प्रश्न 5. एक कण की स्थिति $r = 2.5 t^2 + 5.0 t$ द्वारा दी गई है जहाँ t सेकंड में है और गुणांक r के लिए उचित इकाइयाँ मीटर में हैं।

i. कणों के $v(t)$ और $a(t)$ ज्ञात कीजिए।

ii. $t = 2.0$ s पर $v(t)$ का परिमाण और दिशा ज्ञात कीजिए।

CHAPTER 4 (LAWS OF MOTION)

Q.1 A 70 kg man stands in contact against the inner wall of a hollow cylindrical drum of radius 3 m rotating about its vertical axis with 200 rev/min. The coefficient of friction between the wall and his clothing is 0.15. What is the minimum rotational speed of the cylinder to enable the man to remain stuck to the wall (without falling) when the floor is suddenly removed?

Q.2 The rear side of a truck is open and a box of 40 kg mass is placed 5 m away from the open end. The coefficient of static friction between the box and the surface below it is 0.15. On a straight road, the truck starts from rest and accelerates with 2 ms^{-2} . At what distance from the starting point does the box fall off the truck?

Q 3. State Newton's laws of motion. Give an example to illustrate it.

Q 4. a. State impulse-momentum theorem.

b. A ball of mass 0.1 kg is thrown against a wall. It strikes the wall normally with a velocity of 30 m/s and rebounds with a velocity of 20 m/s. Calculate the impulse of the force exerted by the ball on the wall.

Q 5. What do you mean by inertia of motion? Give an example to illustrate it.

अध्याय 4 (गति के नियम)

प्रश्न 1. 70 किग्रा का एक व्यक्ति 3 मीटर त्रिज्या वाले एक खोखले बेलनाकार ड्रम की भीतरी दीवार के संपर्क में खड़ा है जो अपने ऊर्ध्वाधर अक्ष पर 200 चक्कर/मिनट की गति से घूम रहा है। दीवार और उसके कपड़ों के बीच घर्षण गुणांक 0.15 है। बेलन की न्यूनतम घूर्णन गति क्या है जिससे वह व्यक्ति फर्श के अचानक हटा दिए जाने पर भी दीवार से चिपका (बिना गिरे) रह सके?

प्रश्न 2. एक ट्रक का पिछला हिस्सा खुला है और 40 किग्रा द्रव्यमान का एक डिब्बा खुले सिरे से 5 मीटर दूर रखा है। डिब्बे और उसके नीचे की सतह के बीच स्थैतिक घर्षण गुणांक 0.15 है। एक सीधी सड़क पर, ट्रक विरामावस्था से चलना शुरू करता है और 2 मी/से^2 के त्वरण से गति करता है। प्रारंभिक बिंदु से कितनी दूरी पर डिब्बा ट्रक से गिर जाता है?

प्रश्न 3. न्यूटन के गति के नियम बताइए। इसे स्पष्ट करने के लिए एक उदाहरण दीजिए।

प्रश्न 4. a. आवेग-संवेग प्रमेय बताइए।

b. 0.1 किग्रा द्रव्यमान की एक गेंद को दीवार पर फेंका जाता है। यह दीवार से 30 मीटर/सेकेंड के वेग से अभिलंबवत टकराती है और 20 मीटर/सेकेंड के वेग से वापस लौटती है। गेंद द्वारा दीवार पर लगाए गए बल के आवेग की गणना कीजिए।

प्रश्न 5. गति के जड़त्व से आप क्या समझते हैं? इसे स्पष्ट करने के लिए एक उदाहरण दीजिए।

CHAPTER 5 (WORK, ENERGY AND POWER)

Q 1. State work-kinetic energy theorem and prove it analytically.

Q.2 Prove that when a particle suffers an oblique elastic collision with another particle of equal mass and initially at rest, the two particles would move in mutually perpendicular directions after collisions.

Q.3 An adult weighing 600 N raises the centre of gravity of his body by 0.25 m while taking each step of 1 m length in jogging. If he jogs for 6 km, calculate the energy utilized by him in jogging assuming that there is no energy loss due to friction of ground and air. Assuming that the body of the adult is capable of converting 10% of energy intake in the form of food, calculate the energy equivalents of food that would be required to compensate energy utilized for jogging.

Q.4 A body of mass M at rest is struck by a moving body of mass m . Prove that fraction of the initial KE of the mass m transferred to the struck body is $4mM/(m + M)^2$ in an elastic collision.

Q.5 An electron and a proton are detected in a cosmic ray experiment, the first with kinetic energy 10 keV, and the second with 100 keV. Which is faster, the electron or the proton? Obtain the ratio of their speeds. (electron mass $= 9.11 \times 10^{-31}$ kg, proton mass $= 1.67 \times 10^{-27}$ kg, $1 \text{ eV} = 1.6 \times 10^{-19} \text{ J}$).

अध्याय 5 (कार्य, ऊर्जा और शक्ति)

प्रश्न 1. कार्य-गतिज ऊर्जा प्रमेय लिखिए और इसे विश्लेषणात्मक रूप से सिद्ध कीजिए।

प्रश्न 2 सिद्ध कीजिए कि जब एक कण समान द्रव्यमान के और आरंभ में विरामावस्था में स्थित किसी अन्य कण से तिर्यक प्रत्यास्थ संघट्ट करता है, तो संघट्ट के पश्चात दोनों कण परस्पर लंबवत दिशाओं में गति करेंगे।

प्रश्न 3 600 न्यूटन भार का एक वयस्क जॉगिंग करते समय 1 मीटर लंबाई का प्रत्येक कदम उठाते समय अपने शरीर के गुरुत्व केंद्र को 0.25 मीटर ऊपर उठाता है। यदि वह 6 किमी जॉगिंग करता है, तो यह मानते हुए कि ज़मीन और हवा के घर्षण के कारण कोई ऊर्जा हानि नहीं होती, जॉगिंग में उसके द्वारा प्रयुक्त ऊर्जा की गणना कीजिए। यह मानते हुए कि वयस्क का शरीर भोजन के रूप में ग्रहण की गई ऊर्जा का 10% परिवर्तित करने में सक्षम है, जॉगिंग के लिए प्रयुक्त ऊर्जा की क्षतिपूर्ति के लिए आवश्यक भोजन के ऊर्जा तुल्यांक की गणना कीजिए।

प्रश्न 4 M द्रव्यमान के एक विरामावस्था में स्थित पिंड पर m द्रव्यमान के एक गतिमान पिंड से टक्कर होती है। सिद्ध कीजिए कि प्रत्यास्थ संघट्ट में टकराए गए पिंड पर स्थानांतरित द्रव्यमान m की प्रारंभिक गतिज ऊर्जा का अंश $4mM/(m + M)^2$ होता है।

प्रश्न 5: एक ब्रह्मांडीय किरण प्रयोग में एक इलेक्ट्रॉन और एक प्रोटॉन का पता लगाया जाता है, पहले की गतिज ऊर्जा 10 keV और दूसरे की 100 keV है। कौन तेज़ है, इलेक्ट्रॉन या प्रोटॉन? उनकी गतियों का अनुपात ज्ञात कीजिए। (इलेक्ट्रॉन द्रव्यमान $= 9.11 \times 10^{-31}$ किग्रा, प्रोटॉन द्रव्यमान $= 1.67 \times 10^{-27}$ किग्रा, $1 \text{ eV} = 1.6 \times 10^{-19}$ जूल)।

CHAPTER 6 (SYSTEM OF PARTICLES AND ROTATIONAL MOTION)

Q.1 Establish the relation for rotation about a fixed axis.

Q.2 A solid cylinder of mass 20 kg rotates about its axis with angular speed 100 rad s^{-1} . The radius of the cylinder is 0.25 m. What is the kinetic energy associated with the rotation of the cylinder? What is the magnitude of angular momentum of the cylinder about its axis?

Q.3 State the conditions for complete equilibrium of a body.

Q.4 If angular momentum is conserved in a system whose moment of inertia is decreased, will its rotational kinetic energy be also conserved? Explain.

Q.5 a. Define centre of mass of a n-particle system. State the coordinates of centre of mass of a n-particle system.

b. What is torque? Give its unit. Show that it is equal to the product of force and the perpendicular distance of its line of action from the axis of rotation.

अध्याय 6 (कणों का निकाय एवं घूर्णन गति)

प्रश्न 1 एक स्थिर अक्ष के परितः घूर्णन के लिए संबंध स्थापित कीजिए।

प्रश्न 2 20 kg द्रव्यमान का एक ठोस बेलन अपने अक्ष के परितः 100 rad/s की कोणीय चाल से घूमता है। बेलन की त्रिज्या 0.25 m है। बेलन के घूर्णन से संबद्ध गतिज ऊर्जा क्या है? अपने अक्ष के परितः बेलन के कोणीय संवेग का परिमाण क्या है?

प्रश्न 3 किसी पिंड के पूर्ण संतुलन के लिए आवश्यक शर्तें बताइए।

प्रश्न 4 यदि किसी निकाय में जिसका जड़त्व आघूर्ण कम हो जाता है, कोणीय संवेग संरक्षित रहता है, तो क्या उसकी घूर्णन गतिज ऊर्जा भी संरक्षित रहेगी? व्याख्या कीजिए।

प्रश्न 5 a. n-कण निकाय के द्रव्यमान केंद्र को परिभाषित कीजिए। n-कण निकाय के द्रव्यमान केंद्र के निर्देशांक बताइए।

b. बलाघूर्ण क्या है? इसका मात्रक दीजिए। दर्शाइए कि यह बल और घूर्णन अक्ष से इसकी क्रिया रेखा की लंबवत दूरी के गुणनफल के बराबर होता है।

NOTE :

- COMPLETE ALL WRITE UP WORK OF PRACTICALS AND PROJECT WORK .
- MAKE A POSTER . (THE NAME OF SCIENTIST HAS BEEN ALLOTTED IN CLASS)

NOTE :

1. COMPLETE ALL WRITTEN WORK ASSIGNED IN CLASS.

2. MAKE A FORMULA NOTEBOOK CONSISTING IMPORTANT DEFINITION , FORMULA, UNITS AND DIMENSION CHAPTERWISE.

3. • MAKE A POSTER . (THE NAME OF SCIENTIST HAS BEEN ALLOTTED IN CLASS)

नोट:

1. कक्षा में दिए गए सभी लिखित कार्य पूरे करें।

2. अध्यायवार महत्वपूर्ण परिभाषा, सूत्र, मात्रक और आयाम वाली एक सूत्र नोटबुक बनाएँ।

HAPPY HOLIDAYS

BY:

MRS. SHWETA PATHAK {PGT PHYSICS }

EKLAVYA MODEL RESIDENTIAL SCHOOL SONDWA

CLASS 11TH CHEMISTRY

General Instructions

- Attempt all questions neatly in your chemistry notebook.
- Use diagrams, flowcharts, and examples wherever possible.
- Highlight formulas and key terms.
- Submit after the holidays.

Some Basic Concepts of Chemistry

Short Answer Questions

- Q.1 Define mole and molar mass. How are they related?
- Q.2 What is the difference between empirical formula and molecular formula?
- Q.3 State the law of conservation of mass with an example.
- Q.4 Calculate the number of atoms in 2 moles of oxygen gas.
- Q.5 What is limiting reagent? How does it affect the yield of a reaction?

Numerical Problems

- Q.1 Calculate the molarity of a solution containing 5.8 g of NaCl in 500 mL of solution.
- Q.2 A sample contains 92 g of ethanol (C_2H_5OH). Calculate the number of moles and molecules.
- Q.3 Determine the percentage composition of elements in H_2SO_4 .

रसायन विज्ञान की कुछ मूल अवधारणाएँ

संक्षिप्त उत्तर प्रश्न

- प्र. 1 मोल और मोलर द्रव्यमान को परिभाषित कीजिए। ये एक-दूसरे से कैसे संबंधित हैं?
- प्र. 2 अनुभवजन्य सूत्र (Empirical Formula) और आणविक सूत्र (Molecular Formula) में क्या अंतर है?
- प्र. 3 द्रव्यमान संरक्षण का नियम (Law of Conservation of Mass) को एक उदाहरण सहित स्पष्ट कीजिए।
- प्र. 4 ऑक्सीजन गैस के 2 मोल में कितने परमाणु होते हैं, इसकी गणना कीजिए।
- प्र. 5 सीमित अभिकर्मक (Limiting Reagent) क्या होता है? यह अभिक्रिया की उत्पाद मात्रा को कैसे प्रभावित करता है?

संख्यात्मक समस्याएँ

- प्र. 1 5.8 ग्राम NaCl को 500 mL विलयन में घोलने पर विलयन की मोलरता की गणना कीजिए।
- प्र. 2 एक नमूने में 92 ग्राम एथेनॉल (C_2H_5OH) है। मोल और अणुओं की संख्या ज्ञात कीजिए।
- प्र. 3 H_2SO_4 में उपस्थित तत्वों की प्रतिशत संरचना ज्ञात कीजिए।

General Organic Chemistry

Short Answer Questions

- Q.1 Define homologous series. Give an example.
- Q.2 What is the difference between inductive effect and resonance effect?
- Q.3 Explain the concept of hybridization in methane.
- Q.4 What are electrophiles and nucleophiles? Give examples.
- Q.5 Define isomerism. What are its types?

Conceptual Questions

- Q.1 Explain the mechanism of electrophilic substitution in benzene.
- Q.2 Why is the carbon atom tetravalent? How does it form covalent bonds?
- Q.3 Discuss the stability of carbocations and carbanions.
- Q.4 What is the role of hyperconjugation in organic reactions?
- Q.5 What is the difference between inductive effect and mesomeric effect?
- Q.6 Explain the concept of resonance with an example.
- Q.7 What are free radicals? How are they formed?

सामान्य कार्बनिक रसायन

संक्षिप्त उत्तर प्रश्न

- प्र. 1 समश्रृंखला (Homologous Series) को परिभाषित कीजिए। एक उदाहरण दीजिए।
- प्र. 2 प्रेरक प्रभाव (Inductive Effect) और अनुनाद प्रभाव (Resonance Effect) में क्या अंतर है?
- प्र. 3 मीथेन में संकरण (Hybridization) की अवधारणा को समझाइए।
- प्र. 4 इलेक्ट्रोफाइल्स और न्यूक्लियोफाइल्स क्या होते हैं? उदाहरण दीजिए।

प्र. 5 समावयवता (Isomerism) को परिभाषित कीजिए। इसके प्रकार क्या हैं?

सैद्धांतिक प्रश्न

प्र. 1 बेंजीन में इलेक्ट्रोफिलिक प्रतिस्थापन (Electrophilic Substitution) की क्रिया विधि को समझाइए।

प्र. 2 कार्बन परमाणु चतुष्मूलक (Tetravalent) क्यों होता है? यह सहसंयोजक बंध कैसे बनाता है?

प्र. 3 कार्बोकैटायन (Carbocation) और कार्बानायन (Carbanion) की स्थिरता पर चर्चा कीजिए।

प्र. 4 कार्बनिक अभिक्रियाओं में हाइपर संयुग्मन (Hyperconjugation) की भूमिका क्या है?

प्र. 5 प्रेरक प्रभाव (Inductive Effect) और मेसोमेरिक प्रभाव (Mesomeric Effect) में क्या अंतर है?

प्र. 6 अनुनाद (Resonance) की अवधारणा को एक उदाहरण सहित समझाइए।

प्र. 7 मुक्त मूलक (Free Radicals) क्या होते हैं? ये कैसे बनते हैं?

CLASS - XI BIOLOGY (Breathing and Exchange of Gases)

1. Define vital capacity. [1]
 2. What is the role of carbonic anhydrase in RBC's? [1]
 3. What is carbamino haemoglobin? [1]
 4. What is chloride shift? Explain. [2]
 5. Explain briefly the first step in respiration? [2]
 6. Write a note on bronchitis and its prevention. [2]
 7. Differentiate between vital lung capacity and total lung capacity. [3]
 8. Explain the mechanism of breathing in humans. [3]
 9. Describe in brief the respiratory organs of man. [5]
-

CLASS - XI BIOLOGY (Breathing and Exchange of Gases)

1. Name the place where actual exchange of gases takes place in insects. [1]
 2. What is the percentage of O₂ in inspired & expired air? [1]
 3. What is the utility of chloride shift? [1]
 4. What is the difference between carbaminohaemoglobin and oxyhaemoglobin. [2]
 5. What is functional residual capacity? [2]
 6. Describe the transport of O₂ and CO₂? [2]
 7. Define oxygen dissociation curve? Why it has sigmoidal pattern? [3]
 8. What is the role of carbonic anhydrase? Show by series of reactions how carbonic anhydrase starts the reactions leading to the formation of hemoglobinic acid? [3]
 9. Explain how our heart muscles get a continuous supply of atmospheric oxygen. [5]
-

CLASS - XI BIOLOGY (Body fluids and circulation)

1. Which of the four chambers of the human heart has the thickest muscular wall? [1]
 2. Where are RBCs formed from in an adult human? [1]
 3. What is ECG technique? [1]
 4. Distinguish between mitral and tricuspid valve? [2]
 5. Why does the fish heart pump only deoxygenated blood? [2]
 6. How is heart failure different from heart attack? [2]
 7. What is cardiac cycle? [3]
 8. Differentiate between right ventricle and left ventricle. [3]
 9. Describe the structure of human heart. [5]
-

CLASS - XI BIOLOGY (Body fluids and circulation)

1. In which mammal, the RBC are nucleated? [1]
 2. Name any two substances which prevent blood coagulation in uninjured blood vessels. [1]
 3. Name the type of granulocytes that play an important role in detoxification? [1]
 4. Name the different types of granulocytes. Give the function of the one which constitutes maximum percentage of total leucocytes. [2]
 5. Why is closed circulatory system considered advantageous? [2]
 6. What is the name of the straw coloured fluid left after clotting of blood? How is it different from blood? [2]
 7. Write a note on "Regulation of cardiac activity"? [3]
 8. Why does lymph contain much less proteins than the blood plasma? Name the two principal lymph vessels in humans. [3]
 9. What is lymphatic system? Discuss its importance. [5]
-

CLASS - XI BIOLOGY (Body fluids and circulation)

1. A cardiologist observed an enlarged QR wave in the ECG of a patient. What does it indicate? [1]
 2. Name the double layered membranous covering of the heart. [1]
 3. Why lymphatic circulation takes place very slowly? [1]
 4. Why is swelling of feet of leg caused when a person stands immobile for a long time? [2]
 5. How are the two heart sounds produced during cardiac cycle? Which one of these is of longer duration? [2]
 6. What is average number of thrombocytes in blood? What is their function? [2]
 7. Differentiate between arteries and veins. [3]
 8. Explain the chemical events that take place to form a blood clot to seal the wound? [3]
 9. Explain double circulation with the help of diagram. [5]
-

CLASS - XI BIOLOGY (Excretory Products and their elimination)

1. In which part of nephron filtration takes place? [1]
 2. What difference is observed in the ascending and descending limb of Henle's loop with reference to permeability of water? [1]
 3. What is the PH of urine. [1]
 4. Differentiate between Rennin and Renin? [2]
 5. What are the two intrinsic mechanisms that provide auto regulation of glomerular filtrate? Explain any one of these. [2]
 6. How is the permeability of the distal convoluted tubule and the collecting tubule controlled for regulating the water content inside the body? [2]
 7. Person suffering from very low blood pressure pass no urine why? What suggestion would you offer for the removal of waste products from the blood in such a situation. [3]
 8. Explain briefly how micturation is a reflex process; but is also under some voluntary control. [3]
 9. Describe briefly the structure and function of renal corpuscle. [5]
-

CLASS - XI BIOLOGY (Excretory Products and their elimination)

1. Name the three kinds of nitrogen excretion. [1]
 2. What are podocytes? [1]
 3. Besides water, name any two constituents of human sweat. [1]
 4. Kidneys do not play a major role in excretion in ammonotelic animals Justify. [2]
 5. Define glomerular filtration rate. What is its value in a healthy human? [2]
 6. What is the significance of frog's tadpole being ammonotelic and the adult frog being ureotelic? [2]
 7. Describe urea cycle. [3]
 8. What is a dialysis machine? When is it needed? [3]
 9. Describe the mechanism of urine formation. [5]
-

CLASS - XI BIOLOGY (Excretory Products and their elimination)

1. What happens is glomerulonephritis? [1]
 2. Name the excretory organ of cockroach. [1]
 3. Name the hormone which controls the concentration of sodium in the body. [1]
 4. Describe the blood vessels called vasa rectae found in relation to uriniferous tubules. What is their function? [2]
 5. What is chief nitrogenous waste product in birds? Give two advantages of this mode of excretion. [2]
 6. Terrestrial animals are generally either ureotelic or uricotelic, Not ammonotelic. Why? [2]
 7. Suppose the kidneys of a person are damaged, can you predict what is going to happen to him? [3]
 8. How does liver both as a digestive as well as an excretory organ? [3]
 9. Describe the renal excretory system of man. [5]
-

CLASS - XI BIOLOGY (Locomotion and Movement)

1. What is a tendon? [1]
 2. Which type of movable joint makes the hip joint? [1]
 3. Name the heaviest and longest bone in the human body? [1]
 4. Why can a red muscle fiber work for a prolonged period, while a white muscle fibre suffers from fatigue soon? [2]
 5. What is the function of girdles? [2]
 6. What makes the synovial joints freely movable? List any four types of synovial joints. [2]
 7. Differentiate between Endoskeleton and Exoskeleton. [3]
 8. Explain the following – [3]
 - a) Antagonistic muscles
 - b) Tetanus
 - c) Threshed stimulus
 9. Explain sliding filament theory of muscle contraction. [5]
-

CLASS - XI BIOLOGY (Locomotion and Movement)

1. Name the functional contractile unit of muscle. [1]
 2. What is arthritis? [1]
 3. What is the total number of bones present in the left pectoral girdle and the left arm respectively in a normal human? [1]
 4. List functions of skeleton in higher animals? [2]
 5. Define a joint. [2]
 6. What is osteoporosis? Name two factors which are responsible for osteoporosis. [2]
 7. Explain the initiation of muscle contraction. What is the role of sarcoplasmic reticulum, Myosin head and F – actin during contraction in striated muscles? [3]
 8. What are the three types of muscle tissue? Write two characteristic points about the structure of each of them? [3]
 9. What is the role of Ca^{++} and ATP in muscle contraction? [5]
-

CLASS - XI BIOLOGY (Locomotion and Movement)

1. Name the tissue which connects muscles to the bone? [1]
 2. What is the function of myoglobin? [1]
 3. What causes fatigue of muscle fibers? [1]
 4. Which kinds of muscle fibers are richly found in the extensor muscles present on the back of human body? What characteristics enable those fibers to serve their purpose? [2]
 5. Give differences between red and white muscle fibers, other than color. [2]
 6. What are floating ribs? How many of them are there? [2]
 7. Represent diagrammatically a sarcomere and label its parts. Which of these parts shorten during muscle contraction? [3]
 8. Describe any three disorders of the muscular system. [3]
 9. Describe the various kinds of joint in human body. According to mobility giving one example of each. [5]
-

CLASS - XI BIOLOGY (Neural Control and Coordination)

1. How does an impulse travel across a synapse? [1]
 2. How many pairs of cranial nerves are present in man? [1]
 3. What is saltatory conduction? [1]
 4. What is a reflex? [2]
 5. What happens when the membrane of a nerve cell carries out a sodium pump? [2]
 6. What are the events that take place at the point of stimulation of axon? [2]
 7. Differentiate between dorsal spinal roots and ventral spinal roots. [3]
 8. Describe human neural system. [3]
 9. Draw a labeled diagram to show the structural view of human ear in the sectional view. [5]
-

CLASS - XI BIOLOGY (Neural Control and Coordination)

1. Name the band of nerve fibers that joins the two cerebral hemisphere in mammals. [1]
 2. What is threshold stimulus for nerve cell? [1]
 3. What is a compound eye? [1]
 4. Give parts of neuron. [2]
 5. Describe the role & location of ciliary body in human eye. [2]
 6. What is mosaic vision? [2]
 7. Why do giant squids have very thick nerve fiber? [3]
 8. Where are synaptic vesicles found? Name their chemical contents? What is the function of these contents? [3]
 9. What is meant by the resting membrane potential of neuron. How do ion channels & sodium – potassium pumps contribute to the resting potential? [5]
-

CLASS - XI BIOLOGY (Neural Control and Coordination)

1. What types of neurons are found in dorsal root of spinal nerve? [1]
 2. What is the basic unit of neural system? [1]
 3. Why is blind spot devoid of the ability for vision? [1]
 4. Where does cerebrospinal fluid occur in our body? Mention two of its functions. [2]
 5. What is the chemical difference between rods & cones? [2]
 6. Why are gray matter and white matter contained in human nervous system named so? [2]
 7. Give the location and function in the human eye, of the following – [3]
(i) cornea (ii) Iris (iii) Vitreous humor
 8. Why are nerve impulses conducted more rapidly in myelinated nerve fiber than in a non – myelinated one? Explain. [3]
 9. Taking one example, describe the functioning of the various components of a spinal reflex arc. [5]
-

CLASS - XI BIOLOGY (Chemical Co – Ordination and Integration)

1. What are hormones. [1]
 2. Name the gland of emergency. [1]
 3. Which gland secrete glucagon? [1]
 4. Differentiate hormone & neurohormone? [2]
 5. What are gonadotropics? [2]
 6. Why oxytocin is called as 'birth hormone'? [2]
 7. Describe the physiological functions & disorders of thyroid gland. [3]
 8. Write full form of ADH and describe how it affects the functioning of kidney tubules. [3]
 9. Name the hormone that regulates each of the following and mention the source of it. [5]
 - 1) urinary elimination of water.
 - 2) storage of glucose as glycogen.
 - 3) Na⁺ and K⁺ metabolism.
 - 4) Basal metabolic rate
 - 5) Descent of testes into scrotum
-

CLASS - XI BIOLOGY (Chemical Co – Ordination and Integration)

1. Distinguish between diabetes mellitus and diabetes insipidus. [1]
 2. Name the hormones of fight or flight. [1]
 3. Name the hormone secreted from outermost cellular layer of adrenal cortex? [1]
 4. What usually can cause over secretion of parathormone in human body? List [2]
any two effects on the body because of this hormone.
 5. What is the function of pineal gland? [2]
 6. Explain the hormones of kidney and GI tract. [2]
 7. Differentiate between exocrine, endocrine & heterocrine glands. [3]
 8. Name the T_3 and T_4 components of thyroid hormone. Explain their specific [3]
function.
 9. Explain the Hormones of adrenal gland and their action on target tissue in a [5]
tabular form.
-

CLASS - XI BIOLOGY (Chemical Co – Ordination and Integration)

1. What is the function of Leydeig's cells? [1]
 2. Name the gland which secrets vasopressin. [1]
 3. Name one mineralocorticoid. [1]
 4. In general, how steroid hormones do effects changes in their target cells. [2]
 5. What is corpus luteum? How does it function as a endocrine gland? [2]
 6. Name the gland that functions as a biological clock in our body where it is located? Name its one secretion. [2]
 7. Differentiate between vitamin, hormone & enzyme. [3]
 8. A patient was complaining of frequent urination, excursive thirst, hunger and tiredness. His fasting glucose level was found higher than 130 mg / dL an two occasions : [3]
 - (i) Name the disease
 - (ii) Give the root cause of this disease
 - (iii) Explain why the blood glucose level is higher than 130 mg / dL.
 9. Explain the mechanism of hormone action. [5]
-

EKLAVYA MODEL RESIDENTIAL SCHOOL SONDWA ALIRAJPUR

AUTMN BREAK (2025-26) HOMEWORK

CLASS: XI

SUBJECT : MATHEMATICS

INSTRUCTIONS: Do all these questions in a separate file (A-4 sheets)

SETS

1. Write down all possible subsets of sets $\{1,2\}$
2. Write down all possible subsets of sets $\{a,b,\{c\}\}$
3. Write number proper subset of a set having six elements.

Write the following sets in set builder form (Question 5 to Question 8)

4. $A = \{5, 10, 15, 20, 25\}$
5. $B = \{5, 25, 125, 625, 3125\}$
6. $C = \{2, 5, 10, 17, 26\}$
7. $D = \{1/2, 2/3, 3/4, 4/5, 5/6\}$
8. $E = \{1/2, 2/5, 3/10, 4/17, 5/26\}$

Write the following sets in roaster form (Question 10 to Question 12)

9. $A = \{x: x \in \mathbb{Z}, x^2 < 25\}$
10. $B = \{x: x \text{ is a letter of the word "principal"}\}$
11. $C = \{x: x \text{ is a two digit natural number such that sum of its digit is } 8\}$
12. $D = \{x: x \text{ is a natural number and divisor of } 36\}$
13. For $A = \{1, 2, 3, 4, 5, 6\}$; $B = \{3, 4, 5, 6\}$, $C = \{4, 5, 7, 8\}$ and $U = \{1, 2, \dots, 8\}$
Find (a) $(A - B)'$, (b) A'

14. For $A = \{1, 2, 3, 4, 5, 6\}$; $B = \{3, 4, 5, 6\}$, $C = \{4, 5, 7, 8\}$ and $U = \{1, 2, \dots, 8\}$
Verify that (1) $(A \cup B)' = A' \cap B'$;
(2) $(A \cap B)' = A' \cup B'$

15. For $A = \{1, 2, 3, 4, 5, 6\}$; $B = \{3, 4, 5, 6\}$, $C = \{4, 5, 7, 8\}$ and $U = \{1, 2, \dots, 8\}$
Verify that (1) $A - (B \cup C) = (A - B) \cap (A - C)$
(2) $A \cap (B - C) = (A \cap B) - (A \cap C)$

16. A and B are two sets such that $n(A) = 3$ and $n(B) = 6$

Find (1) minimum value of $n(A \cup B)$ (2) maximum value of $n(A \cap B)$.

17. Let A, B and C be 3 sets such that $A \cup B = A \cup C$ and $A \cap B = A \cap C$ show $B = C$.

18. If $A \subset B$ show that $(C - B) \subset C - A$

19. If $A \subset B$ and $B \in C$, is it true that $A \in C$, Explain giving example.

20. Find $A \cup B$ and $A \cap B$ if $A = \{x : x \in \mathbb{Z} \text{ and } x^2 \leq 36\}$, $B = \{x : x \text{ is a prime natural number whose square is } < 50\}$

RELATIONS AND FUNCTIONS

1. If $A = \{2, 3\}$, $B = \{1, 2, 3, 4\}$ and $C = \{3, 4, 5, 6\}$ verify that

(i) $A \times (B \cap C) = (A \times B) \cap (A \times C)$ (ii) $A \times (B \cup C) = (A \times B) \cup (A \times C)$

2. If $A = \{1, 2, 3\}$, $B = \{4, 5, 6\}$ and $C = \{1, 2\}$ find $(A - B) \times (A \cap C)$

3. If $A = \{3, 5\}$, $B = \{5, 6\}$ and $C = \{3, 6\}$, find $(A \times C) - (A \times B)$

4. $A = \{1, 0, -1\}$, $B = \{2, 3\}$, $C = \{1, -1\}$, find $A \times B \times C$ and $B \times A \times C$

5. If $(a, 1)$, $(b, -1)$ and (c, c) are three elements of $A \times B$ and $n(B \times A) = 9$, Find the sets A,

B and $B \times C$. Ans $\{a, b, c\}, \{1, -1, c\}, \{(a, 1), (a, -1), (a, c), (b, 1), (b, -1), (b, c), (c, 1), (c, -1), (c, c)\}$

6. 7. If $A = \{x : x \in \mathbb{N}, x < 4\}$, $B = \{x : x^2 + 5x - 6 = 0, x < 0\}$ then find $A \times B$

7. Let $A = \{1, 2, 3, 4, 5, 6\}$ Define a relation R on set A , $R = \{(x, y) : y = x + 1\}$. Write R ,

represent R using arrow diagram and also write domain and range of R .

8. $f : R \rightarrow R$ is defined by, $f(x) = \begin{cases} 1 & , x \in Q \\ -1 & , x \notin Q \end{cases}$. Find $f\left(\frac{1}{4}\right)$, $f(\pi)$, $f(\sqrt{2})$

9. Find the domain and range of function given by $f(x) = \frac{x-1}{x-5}$

10. Find domain and range of following functions:

a) $f(x) = \sqrt{x-4}$ b) $f(x) = \frac{1}{\sqrt{1-x}}$ c) $f(x) = \sqrt{25-x^2}$ d) $f(x) = \frac{x^2-4}{x-2}$

e) $f(x) = \frac{9-x}{x-9}$ f) $f(x) = \frac{3x-2}{2x-5}$

TRIGONOMETRY CLASS XI

1) Evaluate

(i) $\cos(-480^\circ)$ (ii) $\sin(-1125^\circ)$ (iii) $\cot(690^\circ)$ (iv) $\sin(-765^\circ)$

(v) $\cos 120^\circ$

2) (i) Show that $\cos 510. \cos 330 + \sin 390. \cos 120 = -1$

(ii) Show that $\sin(-420) \cos 390 + \cos(-660) \sin 330 = -1$

3) Evaluate $\cot(90 + x) + \tan(180 + x) + \sec(360 - x) + \operatorname{cosec}(270 - x)$

4) If $A - B = \pi/4$, Show that $(1 + \tan A)(1 + \tan B) = 2 \tan A$

5) If $\tan(A + B) = x$ and $\tan(A - B) = y$, then Find $\tan 2A$

6) Show that $\tan 8\theta - \tan 6\theta - \tan 2\theta = \tan 8\theta. \tan 6\theta. \tan 2\theta$

7) Show that $\cot 3x. \cot 4x - \cot 7x. \cot 3x - \cot 7x. \cot 4x = 1$

8) Show that $\cos 20^\circ \cos 40^\circ \cos 60^\circ \cos 80^\circ = 1/16$

9) Show that $\sin 20^\circ \sin 40^\circ \sin 60^\circ \sin 80^\circ = 3/16$

10) If $A + B = \pi/4$, Show that $(1 + \tan A)(1 + \tan B) = 2$

COMPLEX NUMBERS

1) $i^{49} + i^{68} + i^{89} + i^{110}$

2) $i^{37} + i^{-67}$

3) $1 + i^{10} + i^{20} + i^{30}$

4) $2i^2 + 6i^3 + 3i^{16} - 6i^{19} + 4i^{25} + 4$

5) Show that $i^n + i^{n+1} + i^{n+2} + i^{n+3} = 0$

6) Show that $(-i)^{4n+3} = i$

Express in standard form

$$7) \frac{2-5i}{3+6i}$$

$$8) \frac{(2+3i)(3-2i)}{(2+5i)(5+2i)}$$

$$9) \frac{2+3i}{1+2i} + \frac{1+i}{2+i}$$

$$10) \frac{(1+i)(1+2i)}{1+3i}$$

11) Find x and y in the following case

$$3x + (2x - 3y)i = 6 + 3i$$

12) Find x and y in the following case

$$13) (x+i)(x+iy) = 2 - 5i$$

14) Find x and y in the following case

$$(x+iy)(2-3i) = 4-3i$$

15) Find the conjugate and the modulus of the followings

$$a) (3-2i)(3+2i)(1+i) \quad b) (2+3i)^2$$

16) If conjugate of $(x+iy)(2-3i)$ is $7+4i$, find x & y

17) If conjugate of $(x-iy)(3+5i)$ is $-6-24i$, find x & y

$$18) \text{ If } \left(\frac{1+i}{1-i}\right)^{100} = a+bi, \text{ find } a \text{ and } b$$

$$19) \text{ Find the least value of } n \text{ if } \left(\frac{1+i}{1-i}\right)^n = 1$$

$$20) \text{ If } z_1 = 2+3i \text{ and } z_2 = -1+3i, \text{ then find } \operatorname{Im}\left(\frac{z_1 z_2}{\bar{z}_1}\right)$$

LINEAR INEQUALITIES

Solve for x from Q No 1 to 9

1. $\frac{3(x-2)}{5} \leq \frac{5(2-x)}{3}$

2. $2(2x+3) - 10 < 6(x-2)$

3. $3(2-x) \geq 2(1-x)$

4. $37 - (3x+5) \geq 9x - 8(x-3)$

5. $\frac{5-2x}{3} \leq \frac{x}{6} - 5$

6. $-3 \leq -3x + 2 < 4,$

7. $\frac{(2x-1)}{3} \geq \frac{(3x-2)}{4} - \frac{(2-x)}{5}$

8. $\frac{x}{4} < \frac{(5x-2)}{3} - \frac{(7x-3)}{5}$

9. Solve the system of inequalities

$3x - 7 < 5 + x$ and $11 - 5x \leq 1$ and represent the solutions on the number line

10. A manufacturer has 600 litres of a 12% solution of acid. How many litres of a 30% acid solution must be added to it so that acid content in the resulting mixture will be more than 15% but less than 18%?

PERMUTATIONS AND COMBINATIONS

Case study based

Q.1 A state cricket authority has to choose a team of 11 members, to do it so the authority ask 2 coaches of a government academy to select the team Members that have experience as well as best performer in the last 15 matches. They can make up a team of 11



cricketers amongst 15 possible candidates in which
5 players can bowl.

- (i) In how many ways can the final eleven be selected from 15 cricket players ?
- (ii) In how many ways can the final eleven be selected if exactly 4 bowlers must be included.
- (iii) In how many ways can the final eleven be selected if all bowlers must be included.

Sol. (i) ${}^{15}C_{11} = 1365$

(ii) 4 bowlers can be select by $= {}^5C_4$

Remaining 7 players can be select out of 10 (15-5) is $= {}^{10}C_7$

Total no. of ways is $= {}^5C_4 \cdot {}^{10}C_7 = 600$

(iii) all 5 bowlers can be select by $= {}^5C_5$

Remaining 6 players can be select out of 10 (15-5) is $= {}^{10}C_6$

Total no. of ways is $= {}^5C_5 \cdot {}^{10}C_6 = 210$

Short answer type question

Q.1 How many number of rectangle forming by 5 different horizontal parallel lines and 7 other different vertical parallel line.

Sol. A rectangle forming by two horizontal and two vertical parallel lines

No. of rectangle $= {}^5C_2 \cdot {}^7C_2 = 10 \cdot 21 = 210$

Q.2 How many arrangement of the letters of the word APPLICATION.

Sol. Total letters 11, A = 2, P=2, I=2

No. of arrangements $= \frac{11!}{2! \cdot 2! \cdot 2!} = 4989600$

Q.3 There are 12 point on a circle. How many chord can be draw? Find number of intersection of all chord in the circle?

Sol. No. of chord $= {}^{12}C_2$

No. of intersection of chord = no. of quadrilateral can be made $= {}^{12}C_4$

Long answer type questions

Q.1 Find rank of the word MONDAY in the dictionary wise all arrangements of word MONDAY,

also find the word which will on the rank 400.

Sol. Arrange alphabetically A,D,M,N,O,Y

Starting from A _ _ _ _ _ can be arrange by $= 5! = 120$

Starting from D _ _ _ _ _ can be arrange by $= 5! = 120$

Starting from M A _ _ _ _ _ can be arrange by $= 4! = 24$

Starting from M D _ _ _ _ _ can be arrange by $= 4! = 24$

Starting from M N _ _ _ _ _ can be arrange by $= 4! = 24$

Starting from M O A _ _ _ _ can be arrange by $= 3! = 6$

Starting from M O D _ _ _ _ can be arrange by $= 3! = 6$

Starting from M O N A _ _ _ can be arrange by $= 2! = 2$

Starting from M O N D A Y can be arrange by $= 1! = 1$

Rank $= 120 + 120 + 24 + 24 + 24 + 6 + 6 + 2 + 1 = 327$

Starting from A _ _ _ _ _ can be arrange by $= 5! = 120$ rank

Starting from D _ _ _ _ _ can be arrange by $= 5! = 120$ 120

Starting from M _ _ _ _ _ can be arrange by $= 5! = 120$ 240

Starting from N A _ _ _ _ _ can be arrange by $= 4! = 24$ 360

Starting from O A _ _ _ _ _ can be arrange by $= 4! = 24$ 384

Starting from N D A _ _ _ can be arrange by = $3! = 6$ 390
 Starting from N D M _ _ _ can be arrange by = $3! = 6$ 396
 Starting from N D O A _ _ can be arrange by = $2! = 2$ 398
 Starting from N D O M _ _ can be arrange by = $2! = 2$ **400 answer**

Q.2 Find the arrangements of the letters of the word VOLUMES. Find the arrangements if:-

- (a) all vowels come together.
- (b) all vowels don't come together.
- (c) vowel don't come together.

Sol. Total alphabets = 7, vowels = 3

Total arrangements = $7! = 5040$

(a) All vowels OUE is a one unit and remaining V, L, M, S can be arrange = $5! \cdot 3! = 720$

(b) Total arrangements – all vowels come together = $7! - 5! \cdot 3! = 5040 - 720 = 4320$

(c) _ V _ L _ M _ S _ three vowels can be on these 5 gaps = 5C_3

And 3 vowels can be arrange by = $3!$

And 4 consonants can be arrange by = $4!$

Then total arrangement = ${}^5C_3 \cdot 3! \cdot 4! = 10 \cdot 6 \cdot 24 = 1440$

III .Questions for Practice

MCQs

Q.1 Number of words from the letters of the word **BHARAT** in which B and H will never come together is:

- (a) 210 (b) 240 (c) 422 (d) 400

Q.2 There are 10 true-false questions in a examination. If all questions are compulsory then these questions can be answered in:

- (a) 210 (b) 512 (c) 422 (d) 1024

Q.3 If ${}^{15}\text{Cr} : {}^{15}\text{Cr}_1 = 11:5$ then r equals

- (a) 15 (b) 11 (c) 5 (d) 4

Q.4 A polygon has 35 diagonals. Find the number of its sides.

- (a) 7 (b) 16 (c) 10 (d) 70

Q.5 ASSERTION-REASON

In the following question, a statement of assertion (A) is followed by a statement of Reason(R).

Assertion (A): ${}^{13}\text{C}_9 = {}^{13}\text{C}_6$

Reason(R): Selection of the r distinct things out of n is equal to the rejection of the (n-r) distinct things out of n.

Choose the correct answer out of the following choices.

- (a) Both A and R are true and R is the correct explanation of A.
- (b) Both A and R are true but R is not the correct explanation of A.
- (c) A is true but R is false.
- (d) A is false but R is true.

Case study based

Q.1 In a company, CEO wants to establish a new branch. New branch required a committee of 5 members is to be formed out of 6 gents and 4 ladies.



In how many ways this can be done, when

- i. At least two ladies are included?
- ii. At most two ladies are included?

Q.2 Read the following passage and answer the questions given below.

Every person has Independence thought.



Find the number of arrangements of the letters of the word INDEPENDENCE. In how many of these arrangements,

- (i) Do the words start with P
- (ii) Do all the vowels always occur together
- (iii) Do the vowels never occur together

OR

Do the words begin with I and end in P?

Q.3 Read the following passage and answer the question given below.

The longest river of North America is *Mississippi River*

In how many ways can the letters of the word MISSISSIPPI be arranged Such that

- (i) All letters are used
- (ii) All I's are together
- (iii) All I's are not together

OR

All S's are not together



Short answer type question

Q.1 If ${}^{10}P_r = 5040$, find the value of r

Q.2 If ${}^4C_r = 6 \cdot {}^5C_{r-1}$, find value of r.

Q.3 How many 6-digit number can be formed from the digits 0,1,3,5,7,9 which are divisible by 10

and no digit is repeated ?

Q.4 How many words can be formed by using the letters of the word ORIENTAL, so that the vowels always occupy the odd places ?

Q.5 How many squares in a chess board?

Q.6 How many palindrome of 5 letters can be made by using letters of the word MATHS?

Q.7 It is required to seat 5 men and 4 women in a row so that the women occupy the even places. How many such arrangements are possible ?

Q.8 Given 12 flags of different colours, how many different signals can be generated if each signal

requires the use of 2 flags, one below the other?

Q.9 There are four bus routes between A and B; and three bus routes between B and C. A man can

travel round-trip in number of ways by bus from A to C via B. If he does not want to use a bus route more than once, in how many ways can he make round trip?

Q.10 In an examination there are three multiple choice questions and each question has 4 choices. Find the number of ways in which a student

BINOMIAL THEOREM

1	$(1 + 4x + 4x^2)^{10}$ has 10 TERMS B) 11 TERMS C) 20 TERMS D) 21 TERMS
2	The ratio of the coefficients of x^r and x^{r-1} in $(1 + x)^n$ is A) $\frac{n+r}{r}$ B) $\frac{n-r+1}{r}$ C) $\frac{n+r-1}{r}$ D) NONE
3	If the coefficient of x^2 and x^3 in the expansion of $(3 + mx)^9$ are equal, then the value of m is A) $-\frac{9}{7}$ B) $-\frac{7}{9}$ C) $\frac{9}{7}$ D) $\frac{7}{9}$
4	The term independent of x in the expansion of $\left(2x + \frac{1}{3x^2}\right)^6$ is A) 2 nd B) 3 rd C) 4 th D) 5 th
5	Using binomial theorem, evaluate $(99)^5$.
6	Expand $\left(x^2 + \frac{3}{x}\right)^4$, $x \neq 0$ using Pascal triangle.
7	Prove that: $(a + b)^6 - (a - b)^6$ is an even number if a and b are integers:
8	Find 4 th term of the expansion $\left(3x + \frac{2}{x}\right)^6$
9	Find 5 th term from the end of the expansion $(a + bx)^7$
10	Find $(a + b)^6 - (a - b)^6$ hence evaluate $(\sqrt{3} + \sqrt{2})^6 - (\sqrt{3} - \sqrt{2})^6$
11	Find a, if the 4th and 5th term of the expansion $(2 + a)^7$ are equal.
12	Expand: $(x^2 + 1 - 2x)^3$
13	Find the value of $(a^2 + \sqrt{a^2 - 1})^4 + (a^2 - \sqrt{a^2 - 1})^4$
14	Using binomial theorem prove that $5^{4n} + 52n - 1$ is divisible by 676 $\forall n \in \mathbb{N}$
15	Find the middle term in the expansion $\left[\frac{x}{7} - \frac{5}{x}\right]^6$
16	Find the coefficient of x^4 in $\left[2x^2 - \frac{3}{x}\right]^5$

Eklavya Model Residential School, Sondwa
Autumn Break Holiday Homework (2025–26)
Class XI – Business Studies

Project Work for Final Examination (20 Marks)

Each student must prepare **one handwritten project file (25–30 pages)** based on any **one topic** given below.

This project carries **20 marks** as per CBSE guidelines and will be evaluated through the file and viva. The project must be submitted **immediately after Autumn Break**.

Project 1: Forms of Business Organisation (Most Preferred Project)

English Version:

Prepare a detailed report on the **Forms of Business Organisation** with examples, structure, merits and limitations.

You must include all five major forms:

1. **Sole Proprietorship**
2. **Partnership Firm**
3. **Joint Hindu Family Business (HUF)**
4. **Cooperative Society**
5. **Joint Stock Company**

Suggested Content:

- Meaning and definition of each form.
- Features/characteristics.
- Advantages and disadvantages.
- Minimum and maximum members required.
- Legal formalities for starting each form.
- Example of each type of business (from your surroundings).
- Comparison chart showing key differences between them.
- Conclusion: which form is suitable for small, medium and large businesses.

You can also prepare creative pages showing ownership structure, flow charts, and diagrams for better presentation.

हिन्दी संस्करण:

व्यवसाय संगठनों के प्रकार पर एक विस्तृत परियोजना तैयार करें जिसमें प्रत्येक प्रकार का अर्थ, विशेषताएँ, लाभ, हानियाँ और उदाहरण शामिल हों।

इन पाँच मुख्य प्रकारों को अवश्य शामिल करें –

1. एकल स्वामित्व (Sole Proprietorship)
2. साझेदारी फर्म (Partnership Firm)
3. संयुक्त हिन्दू परिवार व्यवसाय (HUF)
4. सहकारी समिति (Cooperative Society)
5. संयुक्त पूंजी कंपनी (Joint Stock Company)

सुझावित विषय-वस्तु:

- प्रत्येक संगठन का अर्थ व परिभाषा
- प्रमुख विशेषताएँ
- लाभ और हानियाँ
- सदस्यों की न्यूनतम व अधिकतम सीमा
- स्थापना की कानूनी प्रक्रिया
- अपने आसपास के उदाहरण
- सभी प्रकारों का तुलनात्मक विश्लेषण
- निष्कर्ष: छोटे, मध्यम और बड़े व्यवसायों के लिए कौन सा रूप उपयुक्त है

प्रोजेक्ट को चार्ट, चित्र या सारणी के माध्यम से आकर्षक बनाएं।

Project 2: Types of Industries

English Version:

Prepare a project on **Types of Industries** explaining various categories of industrial activities.

Include the following main divisions:

1. **Primary Industry** – extraction and production of natural resources (e.g., mining, fishing, agriculture).
2. **Secondary Industry** – manufacturing and construction (e.g., textile, automobile, cement).
3. **Tertiary Industry** – service industries supporting primary and secondary (e.g., banking, insurance, transport, communication).

Also show how industries are interrelated – for example, agriculture (primary) supplies raw materials to textile mills (secondary), which depend on transport and marketing (tertiary).

Add diagrams, examples, and a flow chart of “Industry Linkages.”

हिन्दी संस्करण:

उद्योगों के प्रकार पर एक परियोजना तैयार करें जिसमें औद्योगिक गतिविधियों के विभिन्न वर्गों का वर्णन करें। मुख्य प्रकार निम्नलिखित हैं –

1. **प्राथमिक उद्योग** – प्राकृतिक संसाधनों का दोहन और उत्पादन (जैसे खनन, मत्स्य पालन, कृषि)।
2. **माध्यमिक उद्योग** – विनिर्माण और निर्माण कार्य (जैसे वस्त्र, ऑटोमोबाइल, सीमेंट उद्योग)।
3. **तृतीयक उद्योग** – सेवाएँ प्रदान करने वाले उद्योग (जैसे बैंकिंग, बीमा, परिवहन, संचार)।

सभी उद्योगों की परस्पर निर्भरता को दर्शाएं और “उद्योग श्रृंखला” का चार्ट बनाएं।

Project 3: Social Responsibility of Business and Business Ethics

Explain the meaning of social responsibility and ethics. Show examples of companies fulfilling their social duties like environment protection, consumer welfare, employee safety, etc. You can prepare it using case studies, pictures, or newspaper clippings.

Project 4: Emerging Modes of Business

Make a project on *E-Business and Outsourcing*. Include concepts like online shopping, digital payments, BPO, KPO, and examples such as Amazon, Flipkart, and Zomato. Discuss their advantages, challenges, and changing trends in India.

Project 5: Business Services

Study various business services such as **Banking, Insurance, Transport, Communication, and Warehousing**. Explain their meaning, functions, and importance in business operations. You may include flowcharts and examples from your local area.

General Instructions for All Projects

- File should be **handwritten**, neat, and 25–30 pages long.
- Include:
 - Cover Page (Name, Class, School, Topic)
 - Acknowledgement
 - Index
 - Introduction
 - Main Content with charts/tables
 - Conclusion
 - Bibliography (Sources/References)

Class 11 – Economics Holiday Homework (सूक्ष्म अर्थशास्त्र अवकाश गृहकार्य)

Subject / विषय: Economics (अर्थशास्त्र)

Class / कक्षा: XI

Part / भाग: Microeconomics (सूक्ष्म अर्थशास्त्र)

Instructions / निर्देश:

Complete all work neatly in your notebook. Use examples, charts, and diagrams wherever possible.

(सभी कार्य अपनी कॉपी में साफ-सुथरे ढंग से करें। जहाँ संभव हो उदाहरण, चार्ट और चित्रों का प्रयोग करें।)

A. Project Work / गतिविधियाँ

1. Market Study Project (बाज़ार अध्ययन परियोजना):

Visit a local market and collect information about the prices of any **five goods** (e.g., fruits, vegetables, clothes, mobile phones, etc.).

Observe how **demand and supply affect prices** and record your observations in a table.

(स्थानीय बाज़ार में जाकर किसी पाँच वस्तुओं के दामों की जानकारी एकत्र करें और देखें कि माँग व आपूर्ति से मूल्य कैसे प्रभावित होते हैं। तालिका बनाकर लिखें।)

2. Law of Demand Activity (माँग का नियम गतिविधि):

Choose one product (like chocolate, notebook, pen, etc.) and prepare a **demand schedule** and **demand curve** showing the inverse relationship between price and quantity demanded.

(किसी एक उत्पाद का चयन करें और उसका माँग अनुसूची एवं माँग वक्र बनाएँ, जिससे मूल्य और माँग के बीच विपरीत संबंध प्रदर्शित हो।)

1. Define microeconomics.

(सूक्ष्म अर्थशास्त्र की परिभाषा दें।)

2. What is meant by opportunity cost?
(अवसर लागत से आप क्या समझते हैं?)
3. Differentiate between positive and normative economics.
(सकारात्मक और मानक अर्थशास्त्र में अंतर बताइए।)
4. Explain the law of demand and draw a demand curve ?

Part B

Practical Assignment

- . Collect data on monthly pocket money of 10 classmates and find

Mean , Median , Mode, Range

कक्षा 11 (इतिहास) Hari D. Bhatt

1. मेसोपोटामिया सभ्यता का मानचित्र बनाएं। Draw a map of the Mesopotamian Civilization.
2. मेसोपोटामिया सभ्यता की विशेषताएं लिखिए। Write the main features of the Mesopotamian Civilization.
3. रोमन साम्राज्य के गठन और प्रशासन के बारे में लिखिए। Write about the formation and administration of the Roman Empire.
4. रोमन साम्राज्य से संबंधित पांच बहुविकल्पीय प्रश्न बनाएं। Create five multiple-choice questions related to the Roman Empire.
5. मंगोल साम्राज्य का मानचित्र बनाएं। Draw a map of the Mongol Empire.
6. चंगेज खान और मंगोल साम्राज्य की विशेषताएं लिखें। Write the main features of Genghis Khan and the Mongol Empire.
7. मंगोल साम्राज्य के पांच बहुविकल्पीय प्रश्न बनाएं। Create five multiple-choice questions related to the Mongol Empire.
8. पुनर्जागरण और मानवतावाद का अर्थ क्या है। What is the meaning of Renaissance and Humanism?
9. लिओनार्दो दा विंची और माइकल एंजेलो के बारे में लिखो। Write about Leonardo da Vinci and Michelangelo.

Eklavya Model Residential School, Sondwa
Autumn Break Holiday Homework (2025–26)
Class XI – Accountancy

Project Work (Any One Project – 20 Marks)

Each student must prepare **one handwritten project file (25–30 pages)** based on any one of the following topics.

This project carries **20 marks** as per CBSE guidelines and will be assessed on content, accuracy, presentation, and viva.

The project should be **neatly handwritten**, properly filed, and submitted **immediately after Autumn Break**.

Project 1: Comprehensive Project on Sole Proprietorship Business

English Version:

Prepare a **complete accounting project** for an imaginary or real **sole proprietorship business**.

You may choose any type of small business — like a **stationery shop, cake shop, tailoring unit, sweet shop, grocery store, or school canteen**.

Your project should cover the **entire accounting process** from the beginning to the preparation of final accounts.

Suggested Format:

1. Introduction of the Business:

- Name and nature of the business
- Location
- Type of goods or services provided
- Estimated investment and capital

2. Source Documents and Vouchers:

- Prepare 15–20 vouchers (cash, bank, and credit).
- Include bills, receipts, and payment slips (handmade or printed).

3. Journal Entries:

- Record at least 25–30 business transactions.
- Include simple **GST-related transactions** (output/input CGST & SGST).

4. Ledger Posting:

- Post all transactions from journal to ledger accounts.
- Draw proper ledger format with totals and balances.

5. Trial Balance:

- Prepare a trial balance using ledger balances.

6. Final Accounts:

- Trading Account
- Profit & Loss Account
- Balance Sheet

7. Analysis & Presentation:

- Present **Expenses, Incomes, Profit, Assets, and Liabilities** using **Pie Chart or Bar Diagram**.
- Write a short **summary/conclusion** about your business performance.

Suggested Business Options:

Beauty Parlour, Men's Saloon, Tailoring Shop, Canteen, Cake Shop, Confectionery, Chocolate Shop, Dry Cleaner, Stationery Shop, Men's/Ladies/Kiddies Wear, Saree Shop, Jewellery Shop, Restaurant, Sweet Shop, Grocery Shop, Shoe Shop, Coffee Shop, Juice Shop, Ice Cream Parlour, Sandwich Shop, Flower Shop, etc.

Make your project look realistic — imagine small shop expenses like rent, furniture, electricity, advertisement, etc.

हिन्दी संस्करण:

एक एकल स्वामित्व वाले व्यवसाय (Sole Proprietorship Business) पर पूर्ण लेखा-प्रोजेक्ट तैयार करें।

आप किसी भी छोटे व्यवसाय को चुन सकते हैं — जैसे स्टेशनरी की दुकान, मिठाई की दुकान, दर्जी की दुकान, बेकरी, किराना स्टोर या स्कूल कैंटीन आदि।

परियोजना में निम्न भाग शामिल करें:

1. व्यवसाय का परिचय: नाम, प्रकार, स्थान, पूंजी एवं निवेश
2. स्रोत दस्तावेज़ और वाउचर: कम से कम 15–20 वाउचर तैयार करें (नकद, बैंक, उधार)।
3. जर्नल प्रविष्टियाँ: 25–30 लेनदेन दर्ज करें, जिनमें कुछ GST लेनदेन भी हों।
4. लेजर: सभी जर्नल प्रविष्टियों को संबंधित लेजर खातों में पोस्ट करें।
5. ट्रायल बैलेंस: लेजर बैलेंस से ट्रायल बैलेंस बनाएं।
6. वित्तीय विवरण:

- व्यापार खाता (Trading A/c)
- लाभ-हानि खाता (Profit & Loss A/c)
- बैलेंस शीट (Balance Sheet)

7. विश्लेषण एवं प्रस्तुति:

- खर्च, आय, लाभ, संपत्ति एवं देनदारियों को चार्ट या बार ग्राफ़ में दर्शाएँ।

- अपने व्यवसाय के प्रदर्शन का संक्षिप्त निष्कर्ष लिखें।

Project 2: Collection and Recording of Source Documents

Collect **15–20 real or sample source documents** like cash memos, invoices, cheques, receipts, and vouchers.

Prepare **original or handmade vouchers** and record these transactions in a proper format using:

- Journal Entries
- Cash Book
- Ledger

Explain briefly how each document is used in accounting.

हिन्दी में:

15–20 वास्तविक या नमूना स्रोत दस्तावेज़ (कैश मेमो, बिल, रसीद, वाउचर आदि) एकत्र करें और उनके आधार पर जर्नल प्रविष्टियाँ, कैश बुक और लेजर तैयार करें।

Project 3: Preparation of Bank Reconciliation Statement

Prepare a **Bank Reconciliation Statement (BRS)** using a given Cash Book and Pass Book with **20–25 transactions**.

Show reasons for differences — like cheque issued but not presented, bank charges, interest credited, etc. Explain how these adjustments help in reconciling balances.

हिन्दी में:

दिए गए नकद पुस्तक और पासबुक के आधार पर 20–25 लेनदेन सहित **बैंक समन्वयन विवरण (BRS)** तैयार करें। दोनों खातों में अंतर के कारणों को समझाएँ और उनका प्रभाव दिखाएँ।

Project File Format for All Projects

- Cover Page (Name, Class, Roll No., Topic, School Name)
- Acknowledgement
- Index
- Introduction of Topic
- Main Project Work (Journals, Ledgers, etc.)
- Analysis / Graphs / Diagrams
- Conclusion
- Bibliography

Interdisciplinary Project for Class XI – Bank Visit & Practical Transactions

Objective:

The project is designed to give students practical exposure to banking operations and help them understand real-world financial transactions. Students will perform deposits and withdrawals in a bank, prepare a **Cash Book**, and reconcile it with the **Bank Statement** using **Bank Reconciliation Statement (BRS)**.

Project Activity:

1. Cash Deposit:

- Six students are given ₹100 each to deposit in the school's bank account using **Pay-in-Slips**.
- Students will learn how deposits are recorded in the **Cash Book** and in the bank.

2. Cheque Withdrawal:

- Six cheques of ₹100 each are issued to different students to encash from the bank.
- Students observe how cheque payments are reflected in the **Bank Column of Cash Book** and how pending cheques affect bank balance.

3. Accounting Recording:

- Students will prepare a **Cash Book with Bank Column** for all transactions.
- Using the entries in the Cash Book, students will prepare a **Bank Reconciliation Statement** to understand the differences between Cash Book and Bank Statement balances.

Learning Outcomes:

- Practical understanding of banking procedures including deposits, withdrawals, and cheque handling.
- Ability to record cash and bank transactions accurately.
- Understanding the concept of **Deposits in Transit** and **Outstanding Cheques** through BRS.
- Enhanced skills in **observation, recording, and financial analysis**.

Interdisciplinary Connection:

This project connects multiple subjects and skills:

1. Accounts:

- Cash Book preparation
- Bank Reconciliation Statement
- Recording of financial transactions

2. Mathematics / Logical Reasoning:

- Addition, subtraction, and balance calculations
- Understanding sequences and accounting logic

3. Business Studies:

- Understanding the role of banks in business operations
- Practical exposure to financial management and transactions

4. Economics:

- Understanding the role of financial institutions in economic activities
- Concepts of money flow, liquidity, and the impact of banking on the economy

Conclusion:

This project provides a **holistic learning experience**, connecting theory with practice. Students not only learn accounting principles but also develop an understanding of banking operations, business transactions, and economic functions, making them more confident and aware of real-world financial practices.

कक्षा 11वीं – भूगोल
विषय शिक्षक - हार्दिक वानखेड़े
मानचित्र कार्य – शरदावकाश गृहकार्य (2025)

पुस्तक: Fundamentals of Physical Geography

मानचित्र कार्य (Map Work Practice)

भारत सरकार द्वारा स्वीकृत विश्व का रूपरेखात्मक (Outline) मानचित्र का उपयोग करें और निम्नलिखित स्थलों/क्षेत्रों को चिन्हित एवं नामांकित करें।

अध्याय 4 – महासागरों और महाद्वीपों का वितरण

विश्व के सभी महाद्वीपों का राजनीतिक मानचित्र

मुख्य महासागर: हिन्द महासागर, प्रशांत महासागर, अटलांटिक महासागर, आर्कटिक महासागर, साउदर्न महासागर

मुख्य और छोटे लिथोस्फेरिक प्लेट

रिंग ऑफ फायर (प्रशांत महासागर)

मिड-अटलांटिक रिज (Mid-Atlantic Ridge)

अध्याय 9 – वायुमंडलीय परिसंचरण और मौसम प्रणाली

विश्व के प्रमुख गर्म रेगिस्तान:

मोजावे रेगिस्तान – नेवाडा, अमेरिका

पटागोनियन रेगिस्तान – अर्जेंटीना

सहारा – अफ्रीका

गोबी रेगिस्तान – मंगोलिया, एशिया

थार रेगिस्तान – भारत

ग्रेट विक्टोरिया रेगिस्तान – ऑस्ट्रेलिया

अध्याय 12 – जल (महासागर)

मुख्य सागर:

ब्लैक सी (Black Sea)

बाल्टिक सी (Baltic Sea)

कैस्पियन सी (Caspian Sea)

मेडिटेरेनियन सी (Mediterranean Sea)

नॉर्थ सी (North Sea)

रेड सी (Red Sea)

खाड़ी: फंडी की खाड़ी (Bay of Fundy, Canada) – विश्व में सबसे अधिक ज्वार के लिए प्रसिद्ध

पुस्तक: India Physical Environment

मानचित्र कार्य (Map Work Practice)

भारत सरकार द्वारा स्वीकृत भारत का रूपरेखात्मक राजनीतिक/भौतिक मानचित्र का उपयोग करें और नीचे दिए गए स्थलों/क्षेत्रों को अध्यायवार चिन्हित एवं नामांकित करें।

अध्याय 1 – भारत का स्थान (India – Location)

भारत की अक्षांशीय सीमा (Latitudinal extent)

भारत की देशांतर सीमा (Longitudinal extent)

भारत का मानक मध्यरेखा (Standard Meridian of India)

भारत से गुजरने वाली महत्वपूर्ण रेखा (Tropic of Cancer)

भारत का दक्षिणतम बिंदु (Mainland) – कन्याकुमारी

अध्याय 2 – संरचना और स्थलाकृति (Structure & Physiography)

पहाड़ियाँ: काराकोरम रेंज, गारो-खासी-जैंटिया हिल्स, अरावली रेंज, विंध्यन रेंज, सतपुड़ा रेंज, पश्चिमी घाट और पूर्वी घाट

चोटी: K2, कंचनजंगा, नंदादेवी, नंगा पर्वत, नाम्चा बर्वा, अणैमुडि

सुरंग / दर्रे: शिपकिला, नाथूला, पलघाट, भोरे घाट, थल घाट

प्लेटो: मालवा, छोटा नागपुर, मेघालय, डेक्कन प्लेटो

तटीय मैदान: सौराष्ट्र, कोंकण, उत्तर और दक्षिण कन्नड़, मलाबार, कोरोमंडल, नॉर्दन सर्कर्स

द्वीप: अंडमान-निकोबार और लक्षद्वीप

अध्याय 3 – जल निकासी प्रणाली (Drainage System)

नदियाँ: ब्रह्मपुत्र, सिंधु, सतलज, गंगा, यमुना, चंबल, दामोदर, महानदी, कृष्णा, कावेरी, गोदावरी, नर्मदा, तापी, लूनी

झीलें (पहचान): वुलर, सांभर, चिलिका, कोल्लेरू, पुलिकट, वेम्बनाड

संदरा, खाड़ी, गल्फ: पाल्क स्ट्रेट, रण ऑफ कच्छ, खाड़ी कच्छ, मन्नार की खाड़ी, खंभात की खाड़ी