O.P. JINDAL SCHOOL
RAIGARH (CG)
तमसो मा ज्योतिर्गमय

SUMMER VACATION HOMEWORK

CLASS - IX

ENGLISH

Q 1. Read the passage carefully and answer the questions that follow :

[1] In recent years, inclusive education has emerged It represents the principle of ensuring that every as a cornerstone of modern educational philosophy child, regardless of ability, background, or socio, economic status, has access to quality education in a mainstream setting. Inclusive education aims to create environments where all students feel valued and are given equal opportunities to succeed, fostering empathy collaboration, and diversity.

[2] The foundations of inclusive education lie in the belief that schools should be microcosms of society, reflecting its diversity. By bringing together students with different needs, inclusive classrooms promote understanding and break down stereotypes. The focus is on individualised instruction, with teachers employing strategies tailored to accommodate varying learning styles, abilities, and interests. For instance, a visually impaired student might benefit from assistive technology, while another with learning difficulties could thrive with differentiated instruction.

[3] Research highlights several benefits of inclusive education. Students with disabilities who learn alongside their peers without disabilities show greater academic progress and social integration. They develop higher self- esteem and learn critical life skills through interaction. On the other hand, non-disabled students in inclusive settings gain an appreciation for diversity and develop a sense of responsibility and empathy. These experiences prepare all students for life in a diverse society.

[4] Inclusive education requires a shift in mindset, teaching practices, and infrastructure. Teachers need to adopt student-centred methodologies and collaborate with special educators, counsellors, and parents. Schools must ensure physical accessibility and provide resources such as braille books, hearing aids, or ramps. The use of technology, such as speech-to-text tools or adaptive learning platforms, can bridge gaps and enable students with disabilities to access the curriculum effectively.

[5] However, implementing inclusive education is not without challenges. Teachers often face large class sizes, limited training, and inadequate resources, which can hinder their ability to meet diverse needs effectively. Societal attitudes and lack of awareness further complicate the inclusion process, as some communities may resist integrating children with disabilities into regular classrooms. Despite these challenges, governments and non-profits worldwide are making strides in promoting inclusive policies, funding programs, and spreading awareness.

[6] India's Right to Education Act and its emphasis on inclusivity have made significant impacts. Efforts like appointing special educators, creating inclusive curricula, and fostering a culture of acceptance are steps in the right direction. The focus must remain on training teachers and involving parents in creating a supportive learning environment.

[7] Inclusive education is a vital step toward an equitable society. While challenges persist, its benefits for students, teachers, and communities far outweigh the obstacles. By embracing inclusive practices, schools can nurture confident, empathetic, and well-rounded individuals, ensuring that no child is left behind.

Now, answer these questions

i. What does inclusive education aim to achieve?

ii. According to the passage, which of the following best describes the benefit of inclusive classrooms for non- disabled students?

a) They receive additional resources and facilities.

b) They develop empathy and appreciation for diversity.

c) They are provided with individualised instruction.
d) They are exempt from group activities.

i. Fill in the blank suitably:

Schools must ensure _____ to accommodate students with diverse needs.

i. Rectify the false statement:

Inclusive education primarily benefits non-disabled students.

i. List one resource that can help a visually impaired student in an inclusive classroom.
ii. What challenges do teachers face in implementing inclusive education?
iii. How does the use of technology enhance inclusive education?
iv. Explain why inclusive education prepares students for a diverse society?
v. Why can we say the writer supports inclusive education without ignoring its challenges?
vi. Suggest a suitable title to the passage.

Q II. You are the Secretary of the History Club. A student found a centuries-old coin on the school playground during recess. Write a notice for the school notice board asking the rightful owner to come forward with proof of ownership.

Q III. You are Rohan/Rohini of Raipur. Your elder sister has secured the first rank in the Class X Board Examination. Your family is hosting a small get-together to celebrate her success. Write an informal invitation in about 50 words, inviting your friend Ankit/Ankita to the celebration on Sunday, 27 April 2026, at 6:00 p.m. at your residence.
Key points to include:

- Occasion
- Date, Time, Venue
- Personal, warm tone

Q IV. Solve 'Integrated Grammar Exercise 1' of page numbers 18, 19 & 20 'Integrated Grammar Exercise 2' of page no. 34, 35 & 36) given in the Workbook of English.
Q V. You are Ananya/Arjun of Class IX, Kendriya Vidyalaya, Raipur. You have noticed that many students and parents still consider vocational courses as a "second choice" compared to traditional streams like Science or Commerce, even after NEP 2020 promoted skill-based learning. Write a letter to the Editor of a national daily in 100–120 words, expressing concern over this mindset and suggesting how schools can make vocational education more aspirational for students.
Hints you may use:
NEP 2020 push: coding, AI, hospitality, design from Class 6,
Rising demand for skilled jobs: drone tech, EV repair, digital marketing
Issue: social stigma, lack of awareness about career growth
Suggest: industry visits, skill fairs, parent counselling, success stories of young entrepreneurs

Q VI. Fill in the blanks with the correct tense form of the verb given in brackets.

a) She _____ (study) in her room when the guests arrived.
b) By next month, we _____ (complete) the vocational training project.
c) Look! The children _____ (play) cricket since morning.
d) I _____ (never see) such a creative rangoli before.
e) If you _____ (work) hard last year, you would have topped the class.
f) They _____* (shift) to Raipur in 2023 and *_____ (live) here since then.

g) By the time the bell rang, the teacher _____ (already explain) the topic.
h) I _____ (wait) for you at the gate when your bus arrives tomorrow.
i) The boy behaves as if the classroom _____ (be) his playground.
j) It is high time we _____ (reduce) screen time among students.

Q VII. A. The passage below has one error in each line. Write the incorrect word and the correction in your answer sheet as shown in the example.

	Error	**Correction**
Screen time among students are increasing rapidly.	a)	
It affect their eyesight, sleep and concentration.	b)	
Many childrens use phones till late night as if	c)	
they has no school next day. It is high time	d)	
parents and teacher take this serious.	e)	
If we will not act now, we will pay later.	f)	
Schools should promote outdoor games which	g)	
had been ignored in the past few years	h)	

B. Supply the missing word. In the passage below, one word has been omitted in each line. Write the missing word along with the word that comes before and the word that comes after it.

	Before	**Missing**	**After**
Vocational education gaining importance in schools today.	a)		
It helps students learn skills are useful in real life.	b)		
Many parents still think as if it meant only for weak students.	c)		
It is high time we change this thinking.	d)		

If more schools provide training, students become job-ready early.	e)		
NEP 2020 says every child must taught at least one skill.	f)		

C. Write five words from the Spell Bee list with their meanings every alternate day.

Question. Project – (PPT or Project File)
In groups of six, prepare an interdisciplinary project on India's major geographical features. For each feature, describe the region, explain its importance in the lives of the people living there and mention the languages spoken in that region. Include one example of each of the following.

Mountains - Himalayas, Western Ghats, etc.

Rivers - Ganga, Yamuna, Krishna, Kaveri, Godavari, etc.

Deserts - Thar Desert, Rann of Kutch, etc.

Valleys - Kangra Valley, Nubra Valley, etc.

Islands - Andaman and Nicobar Islands, Lakshadweep, etc.

Plateaus - Deccan, Malwa, Meghalaya, etc.

HINDI

सभी विद्यार्थी निम्नलिखित लेखन को कक्षाकार्य पुस्तिका में लिखकर आएंगे

अनौपचारिक पत्र

१.छोटे भाई को कुसंगति से बचने की सलाह देते हुए पत्र लिखिए।

२.भाई की सफलता पर गर्व व्यक्त करने हेतु पत्र लिखिए।

३.नए घर के उद्घाटन)Housewarming) पर कक्षा शिक्षकको शिक्षिका/ आमंत्रण पत्र लिखिए-।

४.अपने शहर के किसी ऐतिहासिक स्थल का वर्णन करते हुए मित्र को पत्र लिखिए।

५.छोटी बहन को अपना करियर चुनने के लिए सलाह देने हेतु पत्र लिखिए।

निम्नलिखित सभी विषयों पर अनुच्छेद-शब्दों में कीजिये १२०लेखन न्यूनतम -

1. राष्ट्रीय एकता और अखंडता
2. पालीथिन से सावधान
3. आत्मविश्वास और लक्ष्य
4. बचपन की वो यादें

5. वरिष्ठ नागरिकों की समस्याएँ
6. धैर्य सफलता की सीढ़ी -
7. अभ्यास का महत्त्व
8. सोशल मीडिया का मकड़जाल
9. जल बचाओ धरती को हराभरा बनाओ-
10. ऑनलाइन खरीददारी की बहार

अर्थालंकार के पाँचों अलंकारों से प्रत्येक के .उदाहरण लिखिए 5-5

रचना के आधार पर वाक्यभेद मे-ं सभी तीनों वाक्यों के १०.उदाहरण लिखिए १०-

SANSKRIT

.1अधोलिखितं गद्यांशं पठित्वा प्रदत्तप्रश्नानां उत्तराणि संस्कृतेन लिखत-

अन्यस्य जनस्य हिताय यत् कार्यं चिन्तनं वा क्रियते तदेव परोपकारः भवति। मनुष्यस्य मध्ये प्रवृत्तिद्वयं दृश्यतेएका स्वार्थस्य अपरा च परोपकारस्य। केचन जनाः ता-दृशाः अपि सन्ति, ये स्वार्थं समीहन्ते न च परोपकारं कुर्वन्ति। ते जनाः अतीव अधन्याः समाजाय च अभिशापरूपाः एव। यस्य केवला स्वार्थबुद्धिः, सः राक्षसः इव सततम् आचरति। ततः वरतराः ते जनाः, ये यद्यपि सर्वात्मना आत्मं भरयः, परं ते परमुखापेक्षिणः न तिष्ठन्ति। यः खलु स्वार्थं सेवमानः परमार्थम् अपि चिन्तयति करोति च यशाशक्ति, सः एव पुरुषः प्रशस्यः।

अ. एकपदेन उत्तरत-

(i) अन्यस्य जनस्य हिताय चिन्तनं किम् भवति?

(ii) मनुष्यस्य मध्ये कति प्रवृत्तिः ?

(iii) ये केवलं स्वार्थं समीहन्ते परोपकारं च न कुर्वन्ति, ते जनाः के भवन्ति?

आ. पूर्णवाक्येन उत्तरत-

(i) यस्य केवला स्वार्थबुद्धिः भवति, सः कः इव आचरति?

(ii) कीदृशाः जनाः अधन्याः अभिशापरूपाः च सन्ति?

(iii) कः पुरुषः प्रशस्यः भवति ?

इ. अस्य गद्यांशस्य उपयुक्तं शीर्षकं लिखत।

ई. निर्देशानुसारं प्रदत्तविकल्पेभ्य उचितम् उत्तरं चित्वा लिखत। :

)i('पुरुषः प्रशस्यः' इत्यनयोः पदयोः कः विशेष्यः?

) ii('परमार्थबुद्धिः' इत्यस्य पदस्य कः विपर्ययः गद्यांशे आगतः?

) iii('निरन्तरम्' इति पदस्य कृते गद्यांशे किं पदं प्रयुक्तम् ?

2-अधोलिखितं गद्यांशं पठित्वा प्रदत्तप्रश्नानां उत्तराणि संस्कृतेन लिखत .

भारतस्य राजधानी दिल्ली प्राचीनं नाम इन्द्रप्रस्थम् आसीत्। :नाम्ना प्रसिद्धा अस्ति। अस्या-'नवादिल्ली इति स्थाने केन्द्रीयप्रशासनस्य कार्यालयासन्ति। तत्र बहुभूमि : कानि भवनानि विलसन्ति। भारतस्य राष्ट्रपतिः,

उपराष्ट्रपतिः, प्रधानमंत्री, अन्ये केन्द्रियमन्त्रिणनगरे एव निवसन्ति। दिल्ली सर्वस्य -च दिल्ली :सांसदा : आकर्षणकेन्द्रम् अस्ति। अत्र दूरदर्शनस्य अपि केन्द्रम् अस्ति। अधुना संसारे या प्रगति :दृश्यते तस्या : अपि प्रमुखं :दिग्दर्शनं दिल्लीनगरे भवति। दिल्ली शिक्षायाकेन्द्रं वर्तते। अत्र दिल्लीविश्वविद्यालयः, जवाहरलालनेहरूविश्वविद्यालयः, लालबहादुरशास्त्रिविद्यापीठं च सन्ति। दिल्लीनगर्यां दर्शनीयस्थानेषु सर्वोच्चन्यायालयः, मेहरौलीस्तम्भः, राष्ट्रपतिभवनं, संसद्भवनम्, अद्भुतालयः, जन्तुगृहं वायुयानआस्थानं-, अन्तर्राज्यीय :आस्थानम् रक्तदुर्गम् च सन्ति। दिल्ली राजधानीक्षेत्रस्य विधानसभाया-बस-केन्द्रम् अपि अस्ति। किं बहुना दिल्ली भारतस्य हृदयं वर्तते।

अ. एकपदेन उत्तरत-

)i(दिल्ल्या प्राचीनं नाम :किम् आसीत्?

)ii(दिल्ली कस्य आकर्षणकेन्द्रम् अस्ति?

(iii) कुत्र दूरदर्शनस्य केन्द्रम् अस्ति ?

आ. पूर्णवाक्येन उत्तरत -

)i(अत्र कानि दर्शनीय स्थानानि सन्ति?

)ii(के दिल्ली नगरे एव निवसन्ति?

(iii) भारतस्य हृदयं किं वर्तते?

इ. अस्य गद्यांशस्य उपयुक्तं शीर्षकं लिखत।

ई. निर्देशानुसारं प्रदत्तविकल्पेभ्य उचितम् उत्तरं चित्वा लिखत। :

)i('शोभन्ते' इत्यर्थै अत्र कः शब्दःप्रयुक्त :?

)ii('नवीनम्' इति पदस्य विलोमपदं लिखत।

)iii('भारतस्य हृदयं वर्तते'। अत्र वर्तते क्रियापदस्य कर्ता कः?

)iv('विख्याता' इत्यस्य पर्यायवाचिपदं किम्?

3. अधोलिखितम् अनुच्छेदं पठित्वा प्रदत्तप्रश्नानाम् उत्तराणि लिखत।

द्रुमाः वसुन्धरायाः अलङ्काराः सन्ति, ये आजीवनम् दूषितवायोः विषं पिबन्तिः, प्राणिभ्यः अमृततुल्यं शुद्धवायुम् च उत्सृजन्ति। एते उपकारिणः स्वयम् आतपे तिष्ठन्ति, ग्रीष्मतापेन तप्तेभ्यः श्रान्तेभ्यः च जनेभ्यः शीतलां छायां यच्छन्ति। भारतीयसंस्कृतौ वटवृक्षस्य अश्वत्थतरोः तुलसीपादपादीनां बहुमानः क्रियते। वटवृक्षस्य अधः उपविश्य गुरवः शिष्यान् उपदिशन्ति स्म। विविधैः फलैः प्रसूनैः च अलङ्कृताः महीरुहाणाम् विनताः शाखाः मानवेभ्यः विनम्रतायाः आचरणस्य सन्देशं यच्छन्ति। वृक्षाणाम् सङ्गे मनुष्याः अतीव शान्तिं विन्दन्ति। मनुष्याणाम् स्नेहस्पर्शेन च पादपाः सम्यक्रूपेण विकसन्ति। अतः अस्माभिः समयं प्राप्य वृक्षैः सह प्रकृतिमातुः अङ्के अवश्यमेव स्थातव्यम्| असंख्यजीवजन्तूनाम्आश्रयस्थलानि अनेकेषाम् खगानां नीडानि एते पुष्पिताः फलिनः च वृक्षाः स्थाने स्थाने रोपणीयाः रक्षणीयाः वर्धनीयाः च।

I. एकपदेन उत्तरत

(क) वसुन्धरायाः अलङ्काराः के सन्ति?

(ख) द्रुमाः प्राणिभ्यः कीदृशं वायुम् उत्सृजन्ति?

(ग)वृक्षाणाम् सङ्गे मनुष्याः किं विन्दन्ति ?

2.पूर्णवाक्येन उत्तरत।

(क) महीरूहाणां विनताः शाखाः मानवेभ्यः कस्य सन्देश यच्छन्ति?

(ख)पादपाः कथं सम्यक्रूपेण विकसन्ति ?

(ग) गुरवः कुत्र शिष्यान् उपदिशन्ति स्म ?

3.यथानिर्देशमुत्तरत

(i) अनुच्छेदे 'विकसन्ति' इति क्रियापदस्य कर्तृपदम् किम् ?

(ii) 'एते उपकारिणः' अत्र 'एते' सर्वनामपदम् केभ्यः प्रयुक्तम्?

(iii) 'पुष्पैः' इति अर्थे किम् पदम् अत्र प्रयुक्तम्?

(iv) 'एते पुष्पिताः फलिनः च वृक्षाः स्थाने स्थाने रोपणीयाः रक्षणीयाः वर्धनीयाः च।' अत्र विशेष्यपदम् किम्?

IV. अस्य अनुच्छेदस्य कृते समुचितं शीर्षक लिखत।

4. भवान् गिरीशः। भवतां विद्यालये संस्कृतसप्ताहः समायोजितः। तत्र संस्कृतसम्भाषणप्रतियोगितायाम् भवता प्रथमः पुरस्कारः प्राप्तः। तत् सूचयता भवता स्वमित्रं पुनीतं प्रति लिखिते पत्रे रिक्तस्थानानि पूरयित्वा पुनः पत्रं लिख्यताम्। सहायतायै मञ्जूषा अपि दत्ता-

छात्रावासः

12, मालवीयनगरम्

(i (.....

दिनाङ्कः .....

प्रियमित्र)ii (.....

सस्नेहम्)iii(.....।

अत्र वयं सर्वे कुशलिनः। अस्माकं विद्यालये गतसप्ताहे संस्कृतसप्ताहः)iv (.....। तत्र एका सम्भाषणप्रतियोगिता)v (..... । अहं तस्यां)vi (..... प्रथमपुरस्कारं प्राप्तवान्। संस्कृतसम्भाषणेन)vii (..... आत्मविश्वासः जागृतः अभवत्। इदानीम् अहं संस्कृते एव)viii (.....। भवान् अपि तथा प्रयत्नं कुर्यात्।

पितृभ्याम् नमोनमः।

(ix (..... अभिन्नमित्रम्

(x (.....

मञ्जूषा-	अभिवादनम्, वदामि, पुनीत, दिल्लीतः, अभवत्, मयि, भवतः, समायोजितः, गिरीशः, प्रतियोगितायाम्,

5. भवान् रायगढ़नगरस्थ उमेशः । भवतः मित्रं राजीवः नागपुरनगरे वसति । तं प्रति परीक्षायाम् सफलतायै - वर्धापनपत्रंपूरयित्वा लिखत - (5)

मञ्जूषा - अपश्यम्, महती, उमेशः, आगतः, तुभ्यम्, छात्रवृत्तिम्, अधिकतरा, राजीव, तत्रास्तु , रायगढ़नगरतः|

(i) .....

तिथिः .....

प्रिय मित्र (ii).....

अत्र कुशलम् (iii)..... । अद्यैव तव परिणामः (iv)..... । तव सफलतां ज्ञात्वा मम मनसि (v)..... प्रसन्नता जाता । मम एषा प्रसन्नता (vi)..... जाता यदा अहम् तव नाम योग्यतासू-चौ (vii)..... । त्वया सप्त रूपेण-। त्वं निश्चित शतानि अंकाः प्राप्ताः-(viii)..... प्राप्स्यसि । त्वया परिवारस्य विद्यालयस्य च नाम उज्ज्वलीकृतम् ।

अस्याम् उज्ज्वल सफलतायाम् अहम्(ix)..... हार्दिकं वर्धापनम् यच्छामि उज्ज्वलभविष्याय च कामये । - मातृपितृचरणेषु प्रणामः ।

तव अभिन्नहृदयं मित्रम्

(x).....

6. भवान् गौरवः अस्ति। भवतः मित्रम् मयकः नवकक्षायाम् प्रविष्ट। स्वमित्रम् नवकक्षायां संस्कृतम् पठितुम् प्रेरयितुम् लिखिते अस्मिन् पत्रे रिक्तस्थानानि पूरयित्वा उत्तरपुस्तिकासु लिखत।

प्रिय मयंक,

(1) .....|

अत्र (2).....तत्रास्तु। तव पत्रात् ज्ञातं यत् त्वम् नवमकक्षायां संस्कृतम् पठितुम् इच्छसि। एतत् ज्ञात्वा अहम् अति प्रसन्नः(3) .....यतः संस्कृतम् पठित्वा वयं स्वदेशस्य गौरवम् अनुभवितुम् (4).....|इयं देवभाषाविश्वस्य सर्वासु भाषासुप्राचीनतमा(5).....च अस्ति। विश्वस्य(6).....भाषासु भारतीयभाषासु च(7).....शब्दाः प्राप्यन्ते | किम् त्वम् जानासि यत् वेदाः रामायण महाभारतम्, उपनिषदः पञ्चतन्त्रहितोपदेशादयः(8).....संस्कृते एव लिखिताः सन्ति ।

अतः त्वम् सर्वैः(9).....सह संस्कृतमपि परिश्रमेण पठ। अवकाशेषु मम गृहम् आगच्छ। मातापितृभ्याम्मम प्रणामान् कथय।

तव(10) .....

गौरवः।

मञ्जूषा - अभवम् , नमोनमः, मित्रम् , शक्नुमः, विषयैः, संस्कृतस्य , अनेकासु ,ग्रन्थाः., वैज्ञानिकी,कुशलं|

7. अधोलिखितानि शब्दरूपाणि लिखित्वा स्मरणं कुर्वन्तु -

बालक, कवि, साधु, लता, नदी, फल |

8. अधोलिखितानि धातुरूपाणि लिखित्वा स्मरणं कुर्वन्तु -

अस्, प्रच्छ्, कृ ,क्रीड्, दृश् पाँचो लकार),परस्मैपद(

9. कयोश्चित द्वयोत्वा आनयन्तु ।कविभ्यां ग्रंथसन्दर्भ सहित परिचयं लिखि : *(परियोजना कार्यम्(*

MATHEMATICS

Dear students,

Please read new NCERT text book of chapter 1 and 2, which has been sent in your class WhatsApp group by your subject teacher.

Solve all exercises questions & examples of Chapters 1 & 2 of the taught chapters in your class notebook. This is your vacation homework. This will be considered as your Monday Test.

The sums that you can't solve, leave blank. Even half solved answers are also answers acceptable.
DO NOT COPY FROM ANY OTHER SOURCES.

CO-ORDINATE GEOMETRY

1.
Plot each of the following points on a graph paper. Verify that they lie on a line.
(i) A(4, 0), B(4, 2), C(4, 2.5) and D(4, 6)
(ii) P(1, 1), Q(2, 2), R(3, 3) and S(4, 4)
(iii) L(6, 2), M(5, 3), N(3, 5) and O(2, 6)

2
Plot the given points on a graph paper and check if they lie on a straight line.
If not, name the shape they form when joined in the given order.
(i) A(0, 2), B(0, 3.5), C(0, 5) and D(0, 6)
(ii) P(1, 3), Q(1, 5), R(3, 3) and S(3, 5)
(iii) E(4, 5), F(5, 5), G(5, 7) and H(6, 5)
(iv) L(2, 0), M(2, 3), N(0, 3) and O(0, 0)
(v) J(4, 3), K(6, 1), L(6, 5) and M(4, 7)

3.
Show that the points O(0, 0), A(3, $\sqrt{3}$) and B(3, $-\sqrt{3}$) are the vertices of an equilateral triangle.

4.
Show that the following points are the vertices of a square:
(i) A(3, 2), B(0, 5), C(−3, 2) and D(0, −1)
(ii) A(6, 2), B(2, 1), C(1, 5) and D(5, 6)
(iii) A(0, −2), B(3, 1), C(0, 4) and D(−3, 1)

5.
Show that the points A(−3, 2), B(−5, −5), C(2, −3) and D(4, 4) are the vertices of a rhombus.
Find the area of this rhombus.
Hint: Area of a rhombus = ½ × (product of its diagonals)

6.
Show that the points A(3, 0), B(4, 5), C(−1, 4) and D(−2, −1) are the vertices of a rhombus.
Find its area.

7.
Show that the points A(6, 1), B(8, 2), C(9, 4) and D(7, 3) are the vertices of a rhombus.
Find its area.

8.
Show that the points A(2, 1), B(5, 2), C(6, 4) and D(3, 3) are the angular points of a parallelogram.
Is this figure a rectangle?

9.
Show that A(1, 2), B(4, 3), C(6, 6) and D(3, 5) are the vertices of a parallelogram.
Show that ABCD is not a rectangle.

10.
Show that the following points are the vertices of a rectangle:
(i) A(−4, −1), B(−2, −4), C(4, 0) and D(2, 3)
(ii) A(2, −2), B(14, 10), C(11, 13) and D(−1, 1)

(iii) A(0, −4), B(6, 2), C(3, 5) and D(−3, −1)

11.
Find the coordinates of the midpoint of the line segment joining:
(i) A(3, 0) and B(−5, 4)
(ii) P(−11, −8) and Q(8, −2)

12.
If (2, p) is the midpoint of the line segment joining A(6, −5) and B(−2, 11),
find the value of p.

13.
The midpoint of the line segment joining A(2a, 4) and B(−2, 3b) is C(1, 2a + 1).
Find the values of a and b.

14.
The line segment joining A(−2, 9) and B(6, 3) is a diameter of a circle with centre C.
Find the coordinates of C.

15.
Find the coordinates of a point A, where AB is a diameter of a circle with centre C(2, −3)
and the other end is B(1, 4).

16.
A line intersects the y-axis and x-axis at points P and Q respectively.
If (2, −5) is the midpoint of PQ, find the coordinates of P and Q.

17.
The midpoints of the sides BC, CA and AB of a triangle ABC are D(3, 4), E(8, 9) and F(6, 7).
Find the coordinates of the vertices of the triangle.

18.
If two adjacent vertices of a parallelogram are (3, 2) and (1, 0) and the diagonals intersect at (2, −5),
find the coordinates of the other two vertices.

19.
Points A(3, 1), B(5, 1), C(a, b) and D(4, 3) are vertices of a parallelogram ABCD.
Find the values of a and b.

20.
If the midpoint of the line segment joining A(3, 4) and B(k, 6) is P(x, y) and x + y − 10 = 0,
find the value of k.

21.
If P(x, y) is a point equidistant from the points A(6, −1) and B(2, 3), show that
x − y = 3.

22.
Find the coordinates of the point equidistant from three given points
A(5, 3), B(5, −5) and C(1, −5).

23.
If the points A(4, 3) and B(x, 5) lie on a circle with centre O(2, 3), find the value of x.
Hint: $OA^2 = OB^2$

24.
If the point C(k, 3) is equidistant from the points A(3, −1) and B(−3, −5), find the values of k. Also find the distance BC.

25.
If the point P(2, 2) is equidistant from the points A(−2, k) and B(−2k, −3), prove that $k^2 + 4k = -3$.

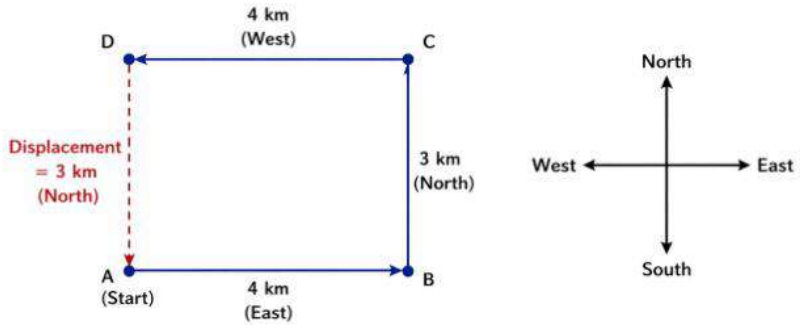
26.
If the point (x, y) is equidistant from the points (a + b, b − a) and (a − b, a + b), prove that bx = ay.

SCIENCE

PHYSICS

Part - 1

Q1. A person walks 4 km east, then turns left and walks 3 km north, and then 4 km west. Find:
(a) Total distance
(b) Displacement



Solution:

- Distance = 4 + 3 + 4 = 11 km
- Displacement: East and west cancel → net = 3 km north
  Displacement = 3 km (north)

Q2. A car travels 60 km at 30 km/h and then 60 km at 60 km/h. Find:
(a) Average speed
(b) Average velocity

Solution:
Time taken:

- First part = 60/30 = 2 h
- Second part = 60/60 = 1 h
- Total distance = 120 km
- Total time = 3 h

  Average speed = 120 / 3 = 40 km/h

  Since motion is in same direction: Average velocity = 40 km/h

Q3. A person goes from A to B at 40 km/h and returns at 60 km/h. Find his average speed.

Solution:
Formula: Average speed = (Total distance)/(Total time)

Let, the distance between A and B is x, therefore the total distance is 2x

Time taken to travel from A to B: $t_1 = x/40$

Time taken to travel from B to A: $t_2 = x/60$

Total time: $x/40 + x/60$

So the average speed = $2x / (x/40 + x/60) = 48$ km/h

Q4. A car increases its velocity from 10 m/s to 25 m/s in 5 seconds. Find its acceleration.

Solution: $a = (v - u)/t$

$= (25 - 10)/5$

$= 15/5 =$ **$3\ m/s^2$**

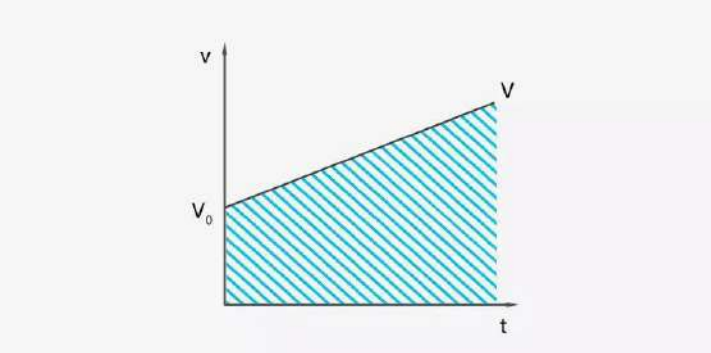
Q5. A body starts from rest and accelerates at 2 m/s^2 for 10 s. Find the distance covered.

Solution:
$s = ut + \frac{1}{2}at^2$

$u = 0$

$s = 0 + \frac{1}{2} \times 2 \times (10^2)$
$= 1 \times 100$
$= 100$ m

Q6. A body moves with uniform acceleration. Its velocity increases from 5 m/s to 15 m/s in 10 s. Find distance using graph concept.



Solution:
Area under v–t graph = trapezium

$s = (1/2) \times (v_1 + v_2) \times t$

$= \frac{1}{2} \times (5 + 15) \times 10$
$= \frac{1}{2} \times 20 \times 10$
$= 100$ m

Q7. A train moving at 20 m/s comes to rest in 10 seconds. Find:
(a) Acceleration
(b) Distance

Solution:
(a) $a = (0 - 20)/10 =$ **$-2\ m/s^2$**

(b) $s = ut + \frac{1}{2}at^2$

$= 20 \times 10 + \frac{1}{2} \times (-2) \times 100$
$= 200 - 100 = 100$ m

Q8. A person travels first 2 hours at 20 km/h and next 1 hour at 50 km/h. Find average speed.

Solution:
Distance:
= (20×2) + (50×1)
= 40 + 50 = 90 km

Time = 3 h

Average speed = 90/3 = **30 km/h**

Q9. A person walks 10 m east, then turns back and walks 5 m, then walks 5 m again. Find:
(a) Distance
(b) Displacement

Solution:
Distance = 10 + 5 + 5 = 20 m

Displacement:
10 east − 10 west = 0

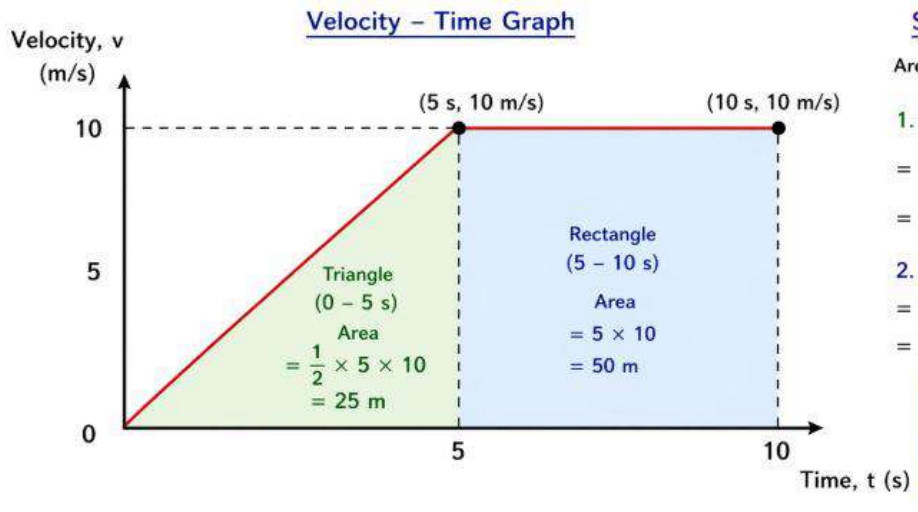
Displacement = 0 m

Q10. A body moves with velocity:

- **0 to 5 s → increases from 0 to 10 m/s**
- **5 to 10 s → constant at 10 m/s**

Find total distance travelled.

Solution:



Solution:

Area under graph = Total distance

1. Triangle (0 – 5 s):

$= \frac{1}{2} \times 5 \times 10$

= 25 m

2. Rectangle (5 – 10 s):

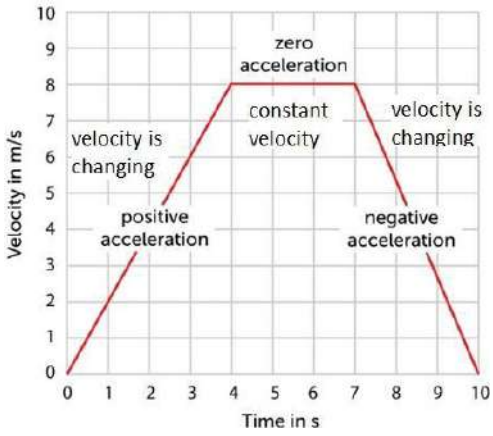
= 5 × 10

= 50 m

Total distance
= 25 m + 50 m
= 75 m

Total distance travelled by the body = 75 m

Q11. What does the slope of a velocity–time graph represent? Explain with cases.



Solution:
The slope of a velocity–time graph represents **acceleration**.

- **Positive slope → Positive acceleration** (speed increasing)
- **Zero slope → Zero acceleration** (uniform velocity)
- **Negative slope → Negative acceleration** (retardation)

Mathematically:
Acceleration = change in velocity / time

Q12. Can a body have zero acceleration but still be in motion? Explain with an example.

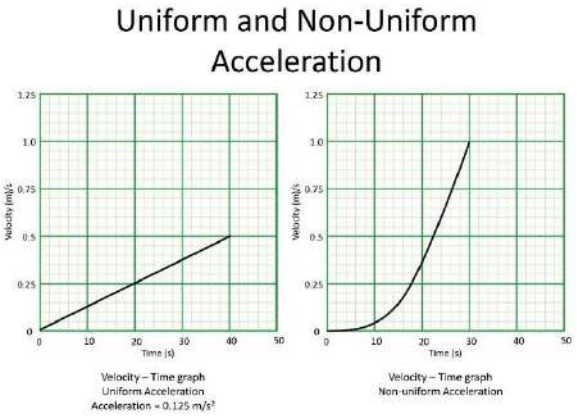
Solution:
Yes, a body can have **zero acceleration** and still be moving.

- Zero acceleration means **velocity is constant**, not zero
- Example: A car moving at **constant speed in a straight line**

Important idea: Acceleration depends on change in velocity, not velocity itself.

Q13. What is the difference between uniform acceleration and non-uniform acceleration? How are they represented graphically?

Solution:

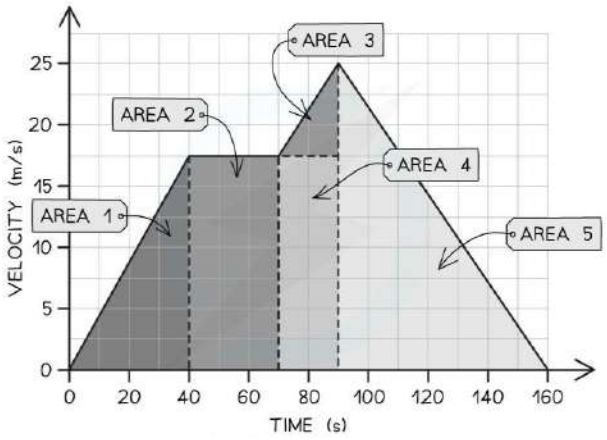


Type	Meaning	Graph
Uniform acceleration	Velocity changes equally in equal intervals	Straight line
Non-uniform acceleration	Velocity changes unequally	Curved line

Key point:

- Straight line → constant acceleration
- Curve → changing acceleration

Q14. What does the area under a velocity–time graph represent? Explain.

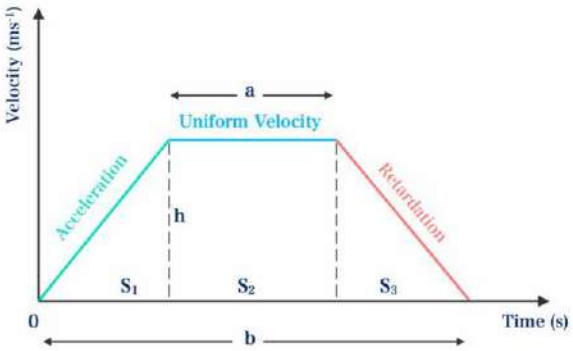


Solution:
The **area under a velocity–time graph gives displacement**.

- Rectangle area → uniform velocity
- Triangle area → uniformly accelerated/retarded motion
- Trapezium → combined motion

Q15. A student observes the motion of a toy car and plots the following velocity–time graph:

- **From 0 to 4 s → velocity increases uniformly from 0 to 8 m/s**
- **From 4 to 8 s → velocity remains constant at 8 m/s**
- **From 8 to 10 s → velocity decreases uniformly to 0 m/s**



Questions:

(a) Identify the type of motion in each time interval.
(b) Calculate the total distance travelled.
(c) During which interval is acceleration zero?
(d) Compare acceleration in first and last intervals.

Solution:

(a) Type of motion

- 0–4 s → Uniform acceleration
- 4–8 s → Uniform velocity (zero acceleration)
- 8–10 s → Uniform deceleration/retardation

(b) Total distance (Area under graph)

1. Triangle (0–4 s):
   = ½ × 4 × 8 = 16 m

2. Rectangle (4–8 s):
   = 4 × 8 = 32 m
3. Triangle (8–10 s):
   = ½ × 2 × 8 = 8 m

Total distance = 16 + 32 + 8 = 56 m

(c) Acceleration zero

From 4 s to 8 s (horizontal line)

(d) Comparison of acceleration

- First interval:

$$a = \frac{8 - 0}{4} = 2\ \mathrm{m/s^2}$$

- Last interval:

$$a = \frac{0 - 8}{2} = -4\ \mathrm{m/s^2}$$

Retardation is greater in magnitude in the last interval

Part – 2

Q1. A farmer moves along the boundary of a square field of side 10 m in 40 s. What will be the magnitude of displacement of the farmer at the end of 2 minutes and 20 seconds from his initial position?

Solution:

Given: Side of square field (s) = 10 m. Perimeter = 4 × 10 = 40 m.
Time for one round = 40 s.
Total time given = 2 min 20 s = (2 × 60) + 20 = 140 s.
Number of rounds = Total Time / Time for 1 round = 140 / 40 = 3.5 rounds.
After 3 full rounds, the farmer is back at the starting point (A). After the remaining 0.5 round, the farmer will be at the opposite corner (C).
Displacement = Shortest distance (Diagonal AC) = $\sqrt{(AB^2 + BC^2)} = \sqrt{(10^2 + 10^2)} = \sqrt{200} = 10\sqrt{2}$ m.
Result: Displacement = 14.14 m.

Q2. An athlete completes one round of a circular track of diameter 200 m in 40 s. What will be the distance covered and the displacement at the end of 2 min 20 s?

Solution:

Given: Diameter = 200 m, so Radius (r) = 100 m.
Time for one round = 40 s.
Total time = 2 min 20 s = 140 s.
Number of rounds = 140 / 40 = 3.5 rounds.
Distance = 3.5 × Circumference = 3.5 × (2 × π × 100) = 3.5 × 2 × 3.14 × 100 = 2200 m.
Displacement: After 3.5 rounds, the athlete is at the diametrically opposite point.
Result: Distance = 2200 m; Displacement = Diameter = 200 m.

Q3. Abdul, while driving to school, computes the average speed for his trip to be 20 km/h. On his return trip along the same route, there is less traffic, and the average speed is 30 km/h. What is the average speed for Abdul's trip?

Solution:

Let the distance from home to school be 'x' km.

Time taken for forward trip (t1) = Distance / Speed = x / 20 hours.

Time taken for return trip (t2) = Distance / Speed = x / 30 hours.

Total Distance = x + x = 2x km.

Total Time = t1 + t2 = (x/20) + (x/30) = (3x + 2x) / 60 = 5x / 60 = x / 12 hours.

Average Speed = Total Distance / Total Time = 2x / (x / 12) = 24 km/h.

Result: Average Speed = 24 km/h.

Q4. An object travels 16 m in 4 s and then another 16 m in 2 s. What is the average speed of the object?

Solution:

Total distance = 16 m + 16 m = 32 m.

Total time = 4 s + 2 s = 6 s.

Average speed = Total distance / Total time = 32 / 6 = 5.33 m/s.

Result: Average Speed = 5.33 m/s.

Q5. A 100 m-long train is moving at a velocity of 60 km/h. Find the time it takes to cross a bridge 1 km long.

Solution:

Length of train = 100 m; Length of bridge = 1 km = 1000 m.

Total distance to cover = 100 + 1000 = 1100 m.

Velocity = 60 km/h = 60 × (5/18) = 16.67 m/s.

Time = Distance / Velocity = 1100 / 16.67 = 66 s.

Result: Time = 66 seconds.

Q6. A car travels the first half of the distance between two stations at a speed of 40 km/h and the second half at 60 km/h. Calculate its average speed.

Solution:

Let the total distance be 2d. So each half is 'd'.

Time for first half (t_1) = d / 40; Time for second half (t_2) = d / 60.

Total time = (3d + 2d) / 120 = 5d / 120 = d / 24.

Average speed = 2d / (d/24) = 48 km/h.

Result: Average Speed = 48 km/h.

Q7. The odometer of a car reads 2000 km at the start of a trip and 2400 km at the end of the trip. If the trip took 8 h, calculate the average speed of the car in km/h and m/s.

Solution:

Distance = 2400 - 2000 = 400 km; Time = 8 h.

Average speed = 400 / 8 = 50 km/h.

Converting to m/s: 50 × (5/18) = 13.88 m/s.

Result: Avg speed = 50 km/h or 13.89 m/s.

Q8. Joseph jogs from one end A to the other end B of a straight 300 m road in 2 min 30 s and then turns around and jogs 100 m back to point C in another 1 min. What are Joseph's average

speed and velocity from A to B?
Solution:

From A to B: Distance = 300 m; Displacement = 300 m.

Time = 2 min 30 s = 150 s.

Average Speed = 300 / 150 = 2 m/s.

Average Velocity = 300 / 150 = 2 m/s.

Result: Both are 2 m/s.

Referring to Joseph's jog above, find his average speed and velocity from A to C.
Solution:

From A to C: Total Distance = 300 m + 100 m = 400 m.

Net Displacement = 300 m - 100 m = 200 m.

Total Time = 150 s + 60 s = 210 s.

Average Speed = 400 / 210 = 1.90 m/s.

Average Velocity = 200 / 210 = 0.95 m/s.

Result: Speed = 1.90 m/s; Velocity = 0.95 m/s.

Q9. A particle moves in a circle of radius R. What is the distance and displacement after covering $3/4^{th}$ of the circle?
Solution:

Distance = 3/4 × Circumference = 3/4 × 2πR = 1.5πR.

Displacement = Shortest straight line between start and end point.

This forms a right-angled triangle with radius R as sides. Displacement = $\sqrt{(R^2 + R^2)} = R\sqrt{2}$.

Result: Distance = 1.5πR; Displacement = $R\sqrt{2}$.

Q10. A body travels 4 km towards the north and then 3 km towards the east. Find the total distance and displacement.
Solution:

Distance = 4 + 3 = 7 km.

Displacement = $\sqrt{(4^2 + 3^2)} = \sqrt{25} = 5$ km.

Result: Distance = 7 km; Displacement = 5 km.

Q11. A signal from a spaceship reaches the ground station in five minutes. What was the distance of the spaceship from the ground station? (Speed of signal = 3×10^8 m/s).
Solution:

Time (t) = 5 min = 5 × 60 = 300 s.

Speed (v) = 3×10^8 m/s.

Distance = Speed × Time = $3 \times 10^8 \times 300 = 9 \times 10^{10}$ m.

Result: Distance = 9×10^{10} m.

Q12. A ball is thrown vertically upwards and rises to a height of 10 m. Calculate the displacement and distance covered by the ball.
Solution:

The ball goes up 10 m and comes back down to the hand (implied total motion).

Distance = 10 m (up) + 10 m (down) = 20 m.

Displacement = 0 (returns to starting position).

Result: Distance = 20 m; Displacement = 0.

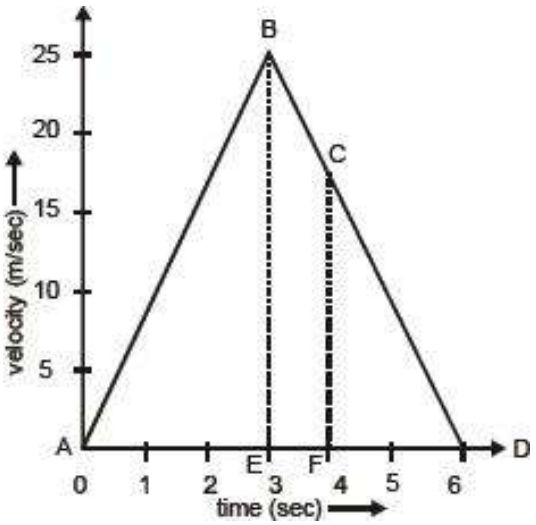
Q13. The displacement of a moving object in a given interval of time is zero. Would the distance travelled by the object also be zero? Justify your answer.

Solution:

In a given interval of time, the displacement of a moving object is zero when its final position is the same as its initial position, whereas the distance travelled by the object is not zero. For example, an athlete moving on a circular track. If he starts from A and completes one round and reaches back to point A, his displacement is zero, whereas the distance travelled by him is not zero but 2πr.

Q14.Study the velocity-time graph and calculate.

.



(a) The acceleration from A to B

(b) The acceleration from B to C

(c) The distance covered in the region ABE

(d) The average velocity from C to D

(e) The distance covered in the region BCFE

Solution:

(a) Acceleration from A to B

At Point A: t = 0s, v = 0 m/sec
At Point B: t = 3s, v = 25 m/sec

a = (25 - 0) / (3 - 0)
a = 8.33 m/sec^2

(b) Acceleration from B to C

At Point B: t = 3s, v = 25 m/sec
At Point C: t = 4s, v = 17.5 m/sec
Acceleration (a) = (17.5 - 25) / (4 - 3)
a = -7.5 / 1
a = -7.5 m/sec^2 (Deceleration)

(c) Distance covered in the region ABE

The distance in a velocity-time graph is the area under the curve.
Region ABE is a triangle with base AE = 3 and height BE = 25.
Distance = ½ × base × height
Distance = ½ × 3 × 25
Distance = 37.5 m

(d) Average velocity from C to D

v at C = 17.5 m/sec, v at D = 0 m/sec
Average Velocity = (17.5 + 0) / 2
Average Velocity = 8.75 m/sec

(e) Distance covered in the region BCFE

Region BCFE is a trapezium.

Parallel side 1 (BE) = 25, Parallel side 2 (CF) = 17.5, Height (EF) = 1.
Distance = Area = ½ × (Sum of parallel sides) × height
Distance = ½ × (25 + 17.5) × 1
Distance = 21.25 m
Q.15 What can you say about the motion of an object whose distance-time graph is a straight line parallel to the time axis?
Solution:
Ans: If the object's distance-time graph is a straight line parallel to the time axis indicates that with increasing time, the distance of that object is not increasing, hence the object is at rest, that is, not moving.

CHEMISTRY

Q1 Write the formula of the following compounds and calculate their formula mass.

1.Potassium chloride	2. Sodium sulphate	3.Calcium nitrate
4.Magnesium chloride	5. Aluminium nitrate	6. Iron(II) sulphate
7. Copper(II) nitrate	8. Zinc oxide	9.Ammonium sulphate
10. Sodium carbonate	11.Calcium phosphate	12. Magnesium hydroxide
13.Potassium nitrate	14.Aluminium chloride	15. Lead(II) nitrate
16.Barium sulphate	17. Silver oxide	18. Copper(II) chloride
19.Sodium hydroxide	20. Ammonium nitrate	21. Sodium chloride
22. Calcium carbonate	23. Magnesium oxide	24. Potassium sulphate
25.Aluminium oxide	26. Iron(III) chloride	27. Copper(II) sulphate
28.Zinc nitrate	29. Ammonium phosphate	30. Sodium bicarbonate
31. Calcium hydroxide	32. Magnesium nitrate	33. Potassium permanganate
34.Aluminium sulphate	35.Lead(II) oxide	36. Barium chloride
37. Silver nitrate	38.Copper(II) oxide	39.Sodium phosphate
40. Ammonium chloride		

2, In a reaction, 12 g of carbon reacts with 32 g of oxygen to form carbon dioxide. Find the mass of carbon dioxide formed.

3, 10 g of hydrogen reacts with 80 g of oxygen to form water. Find the mass of water formed.

4. 15 g of calcium carbonate decomposes to give calcium oxide and carbon dioxide. If 8.4 g of calcium oxide is formed, find the mass of carbon dioxide formed. Which law of chemical combination is being followed here?

5. Water contains 2 g of hydrogen combined with 16 g of oxygen. What is the mass ratio of the elements in water? If a sample of water contains 9 g of oxygen, find the mass of hydrogen present.

6. In ammonia, nitrogen and hydrogen combine in the mass ratio 14 : 3. If a sample contains 280 g of nitrogen, find the mass of hydrogen combined with it.

7. In magnesium oxide, magnesium and oxygen combine in the mass ratio 3 : 2. If 1.5 g of magnesium reacts completely, find the mass of oxygen required.

8. Water contains 11.1% hydrogen and 88.9% oxygen by mass. A sample of water from a river and another from a lake show the same percentages. The above observation supports which law of chemical reaction?

9. Carbon dioxide always contains 27.3% carbon and 72.7% oxygen by mass.
If you take 44 g of carbon dioxide, how much oxygen and carbon are present?

10. 12g of carbon combines with 4g of hydrogen to form 16 g of methane. What mass of methane will be formed if we take 12 g of carbon and 10 g of hydrogen?

Ionic Bond

An ionic bond is a type of chemical bond formed by the transfer of electrons from one atom to another. It usually forms between a metal and a non-metal.

- Metal atom loses electrons and becomes a positive ion (cation).
- The non-metal atom gains electrons and becomes a negative ion (anion).
- These oppositely charged ions attract each other strongly by electrostatic force.

Example: Sodium chloride

$Na \rightarrow Na^{+} + e-$

$Cl + e- \rightarrow Cl^{-}$

Then:

$Na^{+} + Cl^{-} \rightarrow NaCl$

Properties of Ionic Compounds

1. Hard and brittle solids.
2. High melting and boiling points because ionic bonds are strong.
3. Usually soluble in water.
4. Conduct electricity when molten or dissolved in water, but not in solid state.
5. Usually form crystals with regular shapes.

Covalent Bond
A covalent bond is a chemical bond formed when two atoms share electrons with each other. It usually forms between non-metal atoms.
Instead of transferring electrons, atoms share one or more pairs of electrons to complete their outer shell.
Example: Water, Methane

Properties of Covalent Compounds
1.Usually have low melting and boiling points.
2.Often gases, liquids, or soft solids.
3. Generally do not conduct electricity.
4. Usually insoluble in water but soluble in organic solvents.
5. Exist as separate molecules.

Charges, Names, and Formulas of Common Ions

Positive Ions (Cations)

+1 Charge

Name	Formula
Ammonium	NH_4^+
Copper(I)	Cu^+
Lithium	Li^+
Potassium	K^+
Silver	Ag^+
Sodium	Na^+

+2 Charge

Name	Formula
Barium	Ba^{2+}
Calcium	Ca^{2+}
Copper(II)	Cu^{2+}
Iron(II)	Fe^{2+}
Lead(II)	Pb^{2+}
Magnesium	Mg^{2+}
Nickel(II)	Ni^{2+}
Strontium	Sr^{2+}
Tin(II)	Sn^{2+}
Zinc	Zn^{2+}

+3 Charge

Name	Formula
Aluminum	Al^{3+}
Iron(III)	Fe^{3+}

+4 Charge

Name	Formula
Lead(IV)	Pb^{4+}
Tin(IV)	Sn^{4+}

Negative Ions (Anions)

−1 Charge

Name	Formula
Acetate	$C_2H_3O_2^-$
Bromide	Br^-
Chloride	Cl^-
Dihydrogen Phosphate	$H_2PO_4^-$
Fluoride	F^-
Hydroxide	OH^-
Hydrogen Carbonate (bicarbonate)	HCO_3^-
Hydrogen Sulfate (bisulfate)	HSO_4^-
Hypochlorite	ClO^-
Iodide	I^-
Nitrate	NO_3^-
Permanganate	MnO_4^-
Thiocyanate	SCN^-

−2 Charge

Name	Formula
Carbonate	CO_3^{2-}
Chromate	CrO_4^{2-}
Dichromate	$Cr_2O_7^{2-}$
Hydrogen Phosphate	HPO_4^{2-}
Oxide	O^{2-}
Oxalate	$C_2O_4^{2-}$
Sulfate	SO_4^{2-}
Sulfite	SO_3^{2-}

−3 Charge

Name	Formula
Nitride	N^{3-}
Phosphate	PO_4^{3-}

Note- First page is holiday HW that should be done in A4 size paper.
Contents given in Second and third page are to be written in Chemistry copy.

BIOLOGY

Instruction: 1. Students are advised to write the answers of the given questions in the Biology notebook. Refer the PDF of the latest NCERT textbook of science already shared with you in class group. Please contact your teacher for more clarity if required.
2. The assignments aims to give you a writing practice aligned with the latest revised curriculum. The topics given here have been discussed/will be thoroughly discussed in the class room.

Chapter – CELL

Q1: Who discovered the cell and how?
Q2: List the key scientists and their contributions to cell biology.
Q3: What is the composition of the plasma membrane?
Q4: Why is the plasma membrane called a selectively permeable membrane?
Q5: What is endocytosis?

Q6: What are the main functions of the plasma membrane?
Q7: Describe the nature and occurrence of the cell wall.
Q8: How does the chemical composition of the cell wall vary across organisms?
Q9: Why is the cell wall important for plants and fungi in watery environments?
Q10: What is the nucleus and who discovered it?
Q11: Name the four main components of the nucleus.
Q12: State the primary functions of the nucleus.
Q13: Define cytoplasm and its components.
Q14: Differentiate between Rough ER (RER) and Smooth ER (SER).
Q15: What are the functions of the Golgi complex?
Q16: What is the role of lysosomes in a cell?
Q17: Why are mitochondria called the "Powerhouse of the cell"?
Q18: What is Leigh syndrome? How does mitochondrial dysfunction lead to Leigh Syndrome?
Q19: Name the three types of plastids and their functions.
Q20: What are the functions of vacuoles?
Q21: How do ribosomes function in the cell?
Q22. Draw and label the following :
i) Nucleous ii) Chloroplast iii) Mitochondria iv) Plant cell and Animal cell.
Q22. Define cell division and identify the two main types.
Q23. Define Mitosis and Meiosis. Where does Mitosis and Meiosis cell division occur?
Q24. Describe the chromosome count and genetic nature of daughter cells in mitosis and meiosis.
Q25. Draw diagrams to show Mitosis and Meiosis cell division

SOCIAL SCIENCE

Disaster Management Project Guidelines

Topic:
Prepare a *Disaster Management Project* on **any one** of the following topics:

- Earthquake
- Landslide
- Avalanche
- GLOF (Glacial Lake Outburst Flood)

Instructions:

1. **Project Format:**
   - The project must be prepared on **A-4 size paper**.
   - Maintain a **neat and well-organized presentation**.
   - Use **blue ink** for writing the content.
   - Headings can be highlighted using **black pen or pencil colors** (avoid excessive decoration).
2. **Content Requirements:**
   Your project should include:
   - Introduction of the disaster
   - Causes
   - Effects/Impacts
   - Preventive measures

- Safety measures during and after the disaster
- Case study (real-life example)
- Conclusion

3. **Presentation:**
   - Include **relevant diagrams, maps, or pictures** wherever necessary.
   - Ensure proper **labeling of diagrams**.
   - Write in **clear and legible handwriting**.
4. **Cover Page:**
   - Mention:
     - Title of the project
     - Student's Name
     - Class & Section
     - Roll Number
     - Subject
5. **Submission Details:**
   - **Last Date of Submission:** *22 June 2026*
   - Submit the project **on time** to avoid any penalty.

GEOGRAPHY
SHAPING OF OUR EARTH

A. Answer the following MCQ's (Tick the correct answer)

Q1. The driving force behind plate movement is primarily:

a) Earth's rotation
b) Gravitational pull of Moon
c) Convection currents in the mantle
d) Ocean currents

Q2. Which evidence strongly supported the Continental Drift Theory proposed by Alfred Wegener?

a) Satellite imagery
b) Matching fossil records across continents
c) Radioactive dating
d) Seismic waves

Q3. The Himalayas are an example of:

a) Ocean–Ocean convergence
b) Ocean–Continent convergence
c) Continent–Continent convergence
d) Divergent boundary

Q4. Which type of plate boundary is associated with deep ocean trenches?

a) Divergent
b) Transform
c) Convergent
d) Passive margin

Q5. The Mariana Trench is formed due to:

a) Transform movement
b) Divergent movement
c) Oceanic–Oceanic convergence
d) Continental rifting

Q6. The Mid-Atlantic Ridge is an example of:

a) Subduction zone
b) Divergent boundary
c) Transform boundary
d) Collision boundary

Q7. The San Andreas Fault in California is a:

a) Convergent boundary
b) Divergent boundary
c) Transform boundary
d) Subduction zone

Q8. The Ring of Fire surrounds which ocean?

a) Indian Ocean
b) Arctic Ocean
c) Atlantic Ocean
d) Pacific Ocean

Q9. Rift valleys are commonly formed due to:

a) Compression
b) Tension
c) Shearing
d) Folding

Q10. Subduction zones are commonly associated with:

a)Fold mountains
b) Shield volcanoes
c) Deep-focus earthquakes
d) Rift valleys

B. SHORT ANSWER TYPE QUESTIONS (Ans. in 30–40 words)

1. Who proposed the Continental Drift Theory? Why was his theory rejected initially?

   _____
   _____

2. Why are earthquakes frequent near plate boundaries?

   _____

_____

3. **What are the different types of Weathering? Give two examples of each.**

_____

_____

4. **Which instrument is used to record earthquakes, and on which scale is their intensity measured?**

_____

_____

5. **Why does the inner core remain solid despite having a temperature of about 6000°C?**

_____

_____

C. **Define the following terms:**

a. Subduction:
b. Epicentre:
c. Tsunami:
d. Sea floor spreading:
e. Asthenosphere:

D. **Draw a labeled diagram of the interior of the earth and write 5 sentences about each layer.**

ELECTION :- QUESTION AND ANSWER

Prepare the given questions and answers, write down in your classwork copy.

Q1 Identify factors highlighting importance of elections in a democracy.
Ans-The importance of elections in a democracy can be understood through the following key factors:

1. **Representation of the People.**
   Elections allow citizens to choose their representatives, ensuring that the government reflects the will of the people.
2. **Accountability of Government.**
   Regular elections make leaders answerable to the public. If they fail to perform, voters can remove them from power.
3. **Peaceful Transfer of Power.**
   Elections provide a legal and peaceful method to change governments, avoiding conflict or violence.
4. **Legitimacy of Government.**
   A government formed through free and fair elections gains public trust and is considered lawful and acceptable.
5. **Political Participation and Awareness**
   Elections encourage citizens to take part in politics, express opinions, and stay informed about national issues.

These factors together make elections a cornerstone of a democratic system.

Q2 Categorise the three types of electoral systems and list examples.
Ans- Electoral systems can be broadly categorised into three main types:

1. **Majoritarian System (Plurality System)**
   In this system, the candidate with the highest number of votes wins, even without an absolute majority.

Example: First-Past-the-Post System used in India, United Kingdom.

2. **Proportional Representation System (PR)**
   Seats are allocated to parties based on the proportion of votes they receive, ensuring fair representation.
   Example: Used in Netherlands, Israel.
3. **Mixed Electoral System**
   This combines elements of both majoritarian and proportional systems. Some representatives are elected directly, while others come from party lists.
   Example: Mixed Member Proportional Representation used in Germany, New Zealand.
   These categories show how different countries design elections to balance fairness and stability.

Q3. Identify the major laws that govern the conduct of elections in India.

Ans. **Representation of the People Act, 1950**
Deals with electoral rolls, allocation of seats, and delimitation of constituencies.

1. **Representation of the People Act, 1951**
   Covers the actual conduct of elections, qualifications/disqualifications of candidates, corrupt practices, and election disputes.
2. **Delimitation Act.**
   Provides for fixing and revising boundaries of constituencies.
3. **Conduct of Elections Rules, 1961**
   Lays down detailed procedures for nomination, polling, counting, and declaration of results.
4. **Model Code of Conduct**
   A set of guidelines issued by the Election Commission of India to ensure free and fair elections (not a law but strictly enforced).

These together ensure that elections in India are conducted in a free, fair, and transparent manner.

Q4 Describe the main provisions of the Representation of the People Acts.

Ans. The two key laws—Representation of the People Act, 1950 and Representation of the People Act, 1951—lay down the legal framework for elections in India. Their main provisions are:

1. Representation of the People Act, 1950

- **Allocation of Seats:** Provides for distribution of seats in the Lok Sabha and State Legislative Assemblies.
- **Delimitation of Constituencies:** Defines and readjusts boundaries of electoral constituencies.
- **Electoral Rolls:** Deals with preparation, revision, and maintenance of voter lists.
- **Voter Eligibility:** Specifies who can be registered as a voter.

2. Representation of the People Act, 1951

- **Conduct of Elections:** Regulates the entire election process—notification, nomination, scrutiny, polling, counting, and declaration of results.
- **Qualifications and Disqualifications:** Lays down criteria for candidates to contest elections.
- **Corrupt Practices and Offences:** Defines electoral malpractices like bribery, undue influence, and booth capturing, and prescribes penalties.
- **Election Disputes:** Provides procedures for filing election petitions and resolving disputes.
- **By-elections and Re-elections:** Covers situations requiring fresh elections.

Together, these Acts ensure free, fair, and systematic conduct of elections in India.

Q5 Define the concept of delimitation and its purpose in the Indian electoral system.

Ans. **Delimitation** is the process of fixing or redrawing the boundaries of electoral constituencies for the Lok Sabha and State Legislative Assemblies in India. It is carried out by an independent body called the Delimitation Commission of India.

Purpose of Delimitation:

1. **Equal Representation**
   Ensures that each constituency has nearly equal population so that every vote has equal value.
2. **Fair Distribution of Seats**
   Adjusts the number and size of constituencies based on population changes (census data).
3. **Prevention of Imbalance**
   Avoids over-representation or under-representation of any region.
4. **Strengthening Democracy**
   Makes the electoral system more representative and just.
5. **Reservation of Seats**
   Helps in identifying constituencies reserved for Scheduled Castes (SC) and Scheduled Tribes (ST).

Thus, delimitation maintains fairness and balance in the electoral system of India.

Q6 Identify the role and functions Election Commission of India (ECI) in the electoral process. (Any five)

Ans. The Election Commission of India (ECI) is an independent constitutional body responsible for conducting free and fair elections in India.

Role and Functions of ECI:

1. **Superintendence of Elections**
   It supervises and controls elections to the Lok Sabha, State Legislatures, and the offices of President and Vice-President.
2. **Preparation of Electoral Rolls**
   Ensures accurate and updated voter lists and inclusion of eligible citizens.
3. **Conduct of Elections**
   Organises the entire election process—issuing notifications, nominations, polling, counting, and declaration of results.
4. **Model Code of Conduct**
   Enforces the code of conduct to ensure fair campaigning by political parties and candidates.
5. **Registration and Recognition of Political Parties**

Registers political parties and grants them recognition and election symbols.

6. **Ensuring Free and Fair Elections**
   Takes measures to prevent malpractices like bribery, rigging, and misuse of power.
7. **Advisory Role**
   Advises the President or Governor on matters of disqualification of members.

Thus, the ECI plays a crucial role in maintaining transparency, fairness, and integrity in India's democratic process.

Q7 Explain constituency, enumerator and electoral roll.

Ans

1. Constituency

A **constituency** is a geographical area from which voters elect their representative to a legislative body (like Lok Sabha or Vidhan Sabha) in India. Each constituency elects one representative.

2. Enumerator

An **enumerator** is an official appointed to collect information about eligible voters. They visit houses, verify details, and help in preparing or updating voter lists.

3. Electoral Roll

An **electoral roll** (voter list) is an official list of all eligible voters in a constituency. Only those whose names are on this list are allowed to vote in elections.

These three are essential parts of the electoral process in India.

Q8 What do you understand by the party system in India?

Ans.The **party system in India** refers to the way political parties are organised, compete, and share power in the country's democratic system.

India follows a **multi-party system**, which means several political parties operate at the national, state, and local levels. These parties contest elections, represent different interests, and try to form the government.

Key Features:

- **Multiple Parties:** There are many parties, including national and regional ones.
- **Coalition Governments:** Often, no single party gets a majority, so parties join together to form a government.
- **Political Competition:** Parties compete in elections to gain public support and power.

Representation of Diversity: Different parties represent various regions, languages, religions, and social groups.

Types of Parties:

- **National Parties** – e.g., Bharatiya Janata Party, Indian National Congress
- **State (Regional) Parties** – e.g., Dravida Munnetra Kazhagam, Telangana Rashtra Samithi

Thus, the party system in India ensures political participation, competition, and representation in a democratic way.

Q9 Explain the meaning and features of a coalition government in the Indian political system.(Any four features).

Ans. A **coalition government** in India is a government formed when no single political party gets a clear majority in the legislature, and two or more parties come together to share power and form the government.

Meaning:

It is an alliance of different political parties that agree to work together, usually based on a **common minimum programme**, to govern the country or a state.

Features:

1. **Alliance of Parties**
   Multiple political parties join together to form the government.
2. **No Clear Majority**
   It arises when no single party secures more than half the seats.
3. **Power Sharing**
   Ministries and responsibilities are shared among coalition partners.

4. **Common Programme**
   Parties agree on common policies to run the government smoothly.
5. **Compromise and Adjustment**
   Decisions are made through mutual understanding and negotiation.
6. **Possibility of Instability**
   Differences among parties may sometimes lead to conflicts or collapse of the government.

Thus, coalition governments reflect India's multi-party system and diverse society.

Q10 Highlight the need for anti-defection measures with reference to political instability.
Ans. The **Anti-Defection Law** in India was introduced through the Tenth Schedule of the Indian Constitution (added by the 52nd Amendment, 1985) to address political instability caused by frequent switching of parties by elected representatives.

Need for Anti-Defection Law:

- **Political Instability:** Frequent defections led to collapse of governments, especially coalition governments.
- **Corruption and Horse-Trading:** Legislators were often bribed or influenced to change parties.
- **Violation of Voters' Mandate:** Elected members switching parties betrayed the trust of voters.

Q11 Explain the key provisions of the Anti-Defection Law with reference to political instability
Ans. The **Anti-Defection Law** in India was introduced through the Tenth Schedule of the Indian Constitution (added by the 52nd Amendment, 1985) to address political instability caused by frequent switching of parties by elected representatives.

Key Provisions:

1. **Disqualification on Defection**
   A member of Parliament or State Legislature can be disqualified if they voluntarily give up membership of their party or vote against party instructions (whip).
2. **Independent Members**
   An independent member is disqualified if they join any political party after election.
3. **Nominated Members**
   A nominated member can join a party within six months of nomination, but not after that period.
4. **Decision Authority**
   The decision regarding disqualification is made by the Speaker (Lok Sabha/Assembly) or Chairman (Rajya Sabha).
5. **Exception (Merger)**
   No disqualification occurs if at least two-thirds of members of a party agree to merge with another party.

Conclusion:
The Anti-Defection Law helps maintain stability in governments, strengthens party discipline, and protects the democratic mandate of voters.

Q12 Identify the major laws that govern the conduct of elections in India.
Ans. The conduct of elections in India is governed by the following major laws:

1. **Representation of the People Act, 1950**
   Deals with preparation of electoral rolls, allocation of seats, and delimitation of constituencies.
2. **Representation of the People Act, 1951**
   Regulates the actual conduct of elections, qualifications and disqualifications of candidates, and election disputes.
3. **Delimitation Act**
   Provides for the fixing and revision of boundaries of constituencies.
4. **Conduct of Elections Rules, 1961**
   Lays down detailed procedures for nomination, polling, counting, and declaration of results.
5. **Model Code of Conduct**
   A set of guidelines issued by the Election Commission of India to ensure free and fair elections (not a law but strictly enforced).

These laws ensure free, fair, and transparent elections in India.

Q.13 Describe the main provisions of the Representation of the People Acts.

Ans. The Representation of the People Act, 1950 and the Representation of the People Act,1951 together form the core legal framework for elections in India.

Main Provisions:

1. Representation of the People Act, 1950
   - Allocation of Seats: Determines the distribution of seats in the Lok Sabha and State Legislative Assemblies.
   - Delimitation of Constituencies: Provides for fixing boundaries of constituencies.
   - Electoral Rolls: Deals with preparation, revision, and maintenance of voter lists.
   - Voter Qualification: Specifies eligibility criteria for registration as voters.

2. Representation of the People Act, 1951
   - Conduct of Elections: Regulates the entire election process—nomination, scrutiny, polling, counting, and declaration of results.
   - Qualifications and Disqualifications: Defines who can contest elections and grounds for disqualification.
   - Corrupt Practices and Offences: Identifies malpractices like bribery, undue influence, and booth capturing, with penalties.
   - Election Disputes: Provides for filing election petitions and settlement of disputes.
   - By-elections: Deals with filling vacant seats through fresh elections.

Conclusion:

These Acts ensure free, fair, and systematic elections and strengthen democracy in India. Define the concept of delimitation and its purpose in the Indian electoral system.

Q.14 Define the concept of delimitation and its purpose in the Indian electoral system. (Any four purpose)

Ans. Delimitation in India refers to the process of fixing or redrawing the boundaries of electoral constituencies for the Lok Sabha and State Legislative Assemblies, based on changes in population.

It is carried out by the Delimitation Commission of India, usually after a Census.

Purpose of Delimitation:

1. Equal Representation

Ensures each constituency has roughly equal population so that every vote has equal value.

2. Fair Distribution of Seats

Adjusts constituencies according to population changes over time.

3. Prevention of Imbalance

Avoids over-representation or under-representation of any area.

4. Reservation of Seats

Identifies constituencies reserved for Scheduled Castes (SC) and Scheduled Tribes (ST).

5. Strengthening Democracy

Makes the electoral system more fair, balanced, and representative. Thus, delimitation ensures justice and equality in the electoral process.

Q15 Identify the role and functions of the Election Commission of India (ECI) in the electoral process.(Any five)

Ans.The Election Commission of India (ECI) is an independent body responsible for ensuring free and fair elections in India.

Role and Functions of ECI:

1. Supervision of Elections

Conducts and supervises elections to the Lok Sabha, State Legislatures, and the offices of President and Vice-President.

2. Preparation of Electoral Rolls

Prepares and updates the voter list to include all eligible citizens.

3. Conduct of Elections

Manages the entire election process—notification, nomination, polling, counting, and declaration of results.

4. Model Code of Conduct

Enforces the Model Code of Conduct to ensure fair campaigning by political parties.

5. Registration of Political Parties

Registers and recognises political parties and allots election symbols.

6. Ensuring Free and Fair Elections

Takes steps to prevent malpractices like bribery, rigging, and misuse of power.

7. Advisory Role

Advises the President and Governors on disqualification of members.

Thus, the ECI plays a vital role in maintaining transparency, fairness, and credibility in India's electoral system**.**

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