

**VACATION HOME WORK (2025-26)**

**CLASS- IX**

**SUBJECT- ENGLISH**

A. Read the passage carefully and answer the questions that follow:

Generation Z, born roughly between 1997 and 2012, is the first truly digital native cohort. They are lauded for their idealism, commitment to social justice, and high levels of self-awareness. Yet, they also navigate a unique set of challenges moulded by instant-access culture: an expectation of immediate gratification that can chip away at patience, and a reliance on screens that sometimes hinders the deep connections required for empathy.

Developing patience and empathy is not about changing who Gen Z is; it's about equipping them with the emotional intelligence (EQ) tools necessary to thrive in an increasingly complex world. These skills are not innate—they are learned through intentional practice.

The expectation of instant gratification—from two-day shipping to immediate search results—has shortened our collective tolerance for delay. For Gen Z, who have never known life without this speed, developing patience requires consciously shifting perspective away from the reactive nature of digital life.

Patience is fundamentally an exercise in self-regulation. To cultivate it, the focus must shift from *reacting* to *observing*. Mindfulness practices, such as simply acknowledging and naming the feeling of frustration when stuck in a queue or waiting for a reply, can decouple the emotion from the hasty reaction. By reframing obstacles—like a system crash or a slow conversation—not as frustrating failures, but as forced *pauses*, Gen Z can reclaim agency over their time. This practice allows them to accept what is uncontrollable and focus energy on what is within their power: their own response.

1. According to the passage, how is Gen Z distinct?
2. Developing patience and empathy is all about \_\_\_\_\_
3. Suggest some measures helpful in developing patience.
4. Which word in para 3 means the same as 'satisfaction from fulfilling a desire'?

B. Change the Voice:

1. They could not stop this outcome.
2. Where did Raghav found the organisation?
3. She was not sewing the clothes?
4. Has Himmat Singh not defeated his opponents?
5. Jyoti creates the to-do lists for us.

C. Answer in about 30 words:

1. What is implied by Shakespeare when he mentions "his shrunk shank"?
2. Describe the nature of Jerry Fisher after Harold enters his house.
3. Mention two good qualities of Private Quelch that make him subject of envy.
4. What does Wordsworth mean by the expression "The music in my heart I bore/ Long after it was heard no more."?

D. Answer in about 100 words:

Duke and Harold are special in many ways. Mention their best traits that make the readers wonder.

Reading:

**Read MCB Units: 4 & 5 meticulously.**

**SUBJECT- HINDI**

**प्रश्न 1 निर्देशानुसार प्रश्नों के उत्तर लिखिए-**

1. 'गुरु-दक्षिणा' शब्द का समास विग्रह क्या होगा?
2. अव्ययीभाव समास का कोई उदाहरण लिखिए ।
3. तत्पुरुष समास की परिभाषा लिखिए ।
4. 'शिवार्पण' शब्द में कौन सा समास है?
5. 'नीति-निपुण' शब्द का समास विग्रह क्या होगा?
6. 'बलि-वेदी' में कारक की दृष्टि से कौन- सा समास है?
7. किस समास का दोनों पद प्रधान होता है?
8. 'हस्तलिखित' शब्द का समास विग्रह क्या होगा?
9. 'विधानसभा' शब्द का समास विग्रह कीजिए.?
10. अव्ययीभाव समास की शर्तें क्या हैं?
11. 'शरणागत' शब्द में कौन सा समास है?
12. 'मुनिश्रेष्ठ' शब्द का समास विग्रह क्या होगा?
13. 'लोकप्रिय' शब्द का समास विग्रह लिखिए ।
14. 'यथाशक्ति' शब्द का समास विग्रह क्या होगा?
15. किस समास में विशेषण-विशेष्य का संयोग होता है?

**प्रश्न 2 निम्नलिखित पंक्तियों में प्रयुक्त अलंकारों के नाम लिखिए-**

1. मुदित महीपति मंदिर आए। सेवक सचिव सुमंत बुलाए ॥
2. हर बरस, बरस दिन आता है।
3. बाल-बिलोकि बहुत मैं बाँचा।
4. संदेसनि सुनि-सुनि, विरहिनि विरह दही।
5. रति-रति शोभा सब रति के शरीर की।
6. कल कानन कुंडल मोर पखा, उर पै बनमाल बिराजत है।
7. कहे कवि बेनी, बेनी ब्याल की चुराई लीन्हीं।
8. सुरभित सुंदर सुखद सुमन तुझ पर झरतेहैं।
9. जो रहीम गति दीप की कुल, कपूत की सोये , बारे उजियारो करे बड़ेअंधेरो होय ।
10. काली घटा का घमंड घटा ।

11. तीन बेर खाती थी वे तीन बेर खाती हैं ।
12. रहिमन पानी राखिए, बिन पानी सब सून।  
पानी गए न ऊबरै, मोती, मानुष, चून ।।
13. मंगन को देखि पट देत बार-बार है ।
14. सुबरन को खोजत फिरत, कवि, व्यभिचारी, चोर
15. रघुपति राघव राजा राम । पतित पावन सीता राम।

### प्रश्न 3 निर्देशानुसार प्रश्नों के उत्तर लिखिए-

1. वाक्य किसे कहते हैं?
2. किन आधारों पर वाक्य-भेद किए जाते हैं ?
3. वाक्य में उद्देश्य और विधेय क्या होता है ?
4. क्या मेरा भाई आपसे मिला ? -अर्थ के आधार पर वाक्य का कौन सा वाक्य भेद है ?
5. वह बहुत ज़ोर से हँस रहा है। -इस वाक्य को विस्मय-बोधक में बदल कर लिखिए ।
6. राधा गृहणी है। -इस वाक्य में उद्देश्य और विधेय छाँट कर लिखिए ।
7. अभय डॉक्टर है । ' इस वाक्य को निषेध वाचक वाक्य में कैसे लिखा जाएगा?
8. मेरा पत्र पिता जी को मिला। ' इस वाक्य को प्रश्न वाचक वाक्य में बदलिए ।
9. मेरा आज बाहर घूमने का मन हो रहा है। ' यह वाक्य किस प्रकार का वाक्य है?
10. संदेह/संभावना का बोध कराने वाले वाक्य किस भेद के अंतर्गत आते हैं?
11. उपसर्ग और प्रत्यय में अंतर स्पष्ट कीजिए ।
12. 'झाड़ू' शब्द में किस प्रत्यय का प्रयोग हुआ है?
13. 'अनु' उपसर्ग जोड़कर दो शब्द लिखिए ।
14. 'ओढ़नी' शब्द में किस प्रत्यय का प्रयोग हुआ है?
15. 'उपभोक्ता' शब्द में किस उपसर्ग का प्रयोग हुआ है?
16. 'अपराजिता' शब्द में किन दो उपसर्गों का प्रयोग हुआ है?
17. 'निर्ममता' शब्द में से उपसर्ग और प्रत्यय पृथक् कीजिये ।
18. 'पालक' शब्द में कोई भी उपयुक्त उपसर्ग जोड़कर लिखिए ।
19. 'मुखौटा' शब्द में किस प्रत्यय का प्रयोग हुआ है?
20. 'भुलक्कड़' शब्द में किस प्रत्यय का प्रयोग हुआ है?

### SUBJECT- SANSKRIT

#### 1. अधोलिखितं गद्यांशं पठित्वा प्रदत्तप्रश्नानां उत्तराणि संस्कृतेन लिखत-

अस्माकं देशः प्राचीनकालादेव प्राकृतिकपर्यावरणस्य पोषकः वैदिककाले यद्यपि पर्यावरणस्य प्रदूषणस्य समस्या नासीत्- प्रदूषणं संस -अद्य पर्यावरण । स्थाने ऋषीणां पर्यावरणविषयकं चिन्तनं दृश्यते- तथापि वेदेषु स्थानेारस्य भीषणतमा समस्या वर्तते पर्यावरणं रक्षणीयं वृक्षाः रोपणीयाः रक्षणीयाः च इति शृण्वन्तः। परं जनाः अस्याः गाम्भीर्यं न अनुभवन्ति,

इति रसायनेन निर्मितवस्तूनि पर्यावरणाय हानिकराणि“प्लास्टिक” ।उद्घोषयन्तःअपि वयम् प्रतिदिनं तेषां कर्तनं पश्यामः  
इति जानन्तः अपि जनाः एतेषां प्रयोगं बाहुल्येन कुर्वन्ति - प्रदूषकं धूमं क्षिपतां वाहनानाम् औद्योगिक -पर्यावरण ।  
अपेक्षिताः परं सञ्चाराय, यद्यपि विकासाय नवीनाः आविष्काराः। यन्त्रागाराणां संख्या निरन्तरं वर्धमाना अस्ति  
यदि। विस्तृताःसुरक्षिताः मार्गाः जनानां कृते अपि आवश्यकाः एव पर्यावरणं प्राणिजीवनाय अनुकूलं न भविष्यति तर्हि  
पृथिव्यां जीवनमेव असंभवं भविष्यति तदा भौतिकनिकासेन किम् अतः सर्वकारः जनसहयोगेन सर्वथा !  
। पर्यावरणरक्षणाय यत्नशीलःभवेदिति

अ. एकपदेन उत्तरत(केवलं प्रश्नद्वयम्) -

- i)( के रोपणीयाःरक्षणीयाः च ?
- ii)( कदा पर्यावरणस्य प्रदूषणस्य समस्या नासीत् ?
- iii) अस्माकं देशः कस्य पोषकः ?

ब. पूर्णवाक्येन उत्तरत(केवलं प्रश्नद्वयम्)-

- i)( किं जानन्तः जनाः प्लास्टिकनिर्मितवस्तूनां प्रयोगं बाहुल्येन कुर्वन्ति-?
- ii)(यदि पर्यावरणं प्राणिजीवनाय अनुकूलं न भविष्यति तर्हि किं भविष्यति?
- iii) केषां संख्या निरन्तरं वर्धमाना अस्ति?

स. अस्य अनुच्छेदस्य कृते उपयुक्तं शीर्षकं संस्कृतेन लिखत।

द. यथानिर्देशम् उत्तरत(केवलं प्रश्नत्रयम्) -

- i)( 'जनाः अस्याः गाम्भीर्यं न अनुभवन्ति? अत्र किं क्रियापदम्'  
)क( जनाः )ख( अस्याः ) ग( अनुभवन्ति
- ii)( 'नवीनाः' इति विशेषणपदस्य विशेष्यपदं किम्?  
)क( प्राचीना ) ख( मार्गाः ) ग( आविष्काराः )iii)( 'वयम् प्रतिदिनं  
तेषां कर्तनं पश्यामःअस्मिन् वाक्ये'। क्रियायाः'पश्यामः'

कर्तृपदं किं प्रयुक्तम् ?

- )क( तेषां ) ख ( वयम् ) ग( पश्यामः
- iv)( इति पदस्य किं विलोमपदं गद्यांशे'शोषकः'प्रयुक्तम्?  
)क( विषयः ) ख( पोषकः ) ग( सरलः

2. भवती प्रभा अस्ति स्वमातरं प्रति स्वस्वास्थ्य विषये लिखितम् इदं पत्रं मञ्जूषायाः सहायतया पुनः ।

। सम्पूर्णं लिखतु

विद्यालयपरिसरः

..... (1)

समादरणीयाः .....(ii)

सादरं प्रणामाः ।

अत्र कुशलम् तत्रास्तु ।सम्प्रति मम अत्र छात्रावासे पठनस्य वातावरणं तु शोभनं। परीक्षा सञ्चरति.....(iii)

अत्र अध्यापकाःअपि ।वर्तते

च अतीव कर्मठाःसन्ति परन्तु अध्ययनकारणात् शयनस्य ,एव भवति ..... (vi) अतः पठनस्य कार्यम् ।

एव न प्राप्यत.....(v) भोजनस्य चे अहं । सुष्ठु नास्ति ..... (iv) अतः अद्यत्वे मम ।

आशासे अहं शीघ्रमेव पूर्णतया । नैव करणीया.....(iiiiv) परं काचिद् अपि । पीडिता अस्मि.....(iiv)

त । आगमिष्यामि.....(xi) परीक्षायाःअनन्तरं। स्वस्था भविष्यामिदा वयम् मिलित्वा भ्रमणाय  
 वाराणसीनगरम् गमिष्यामः ।.....(x) पित्रे ।  
 भवत्या : पुत्री  
 प्रभा

|          |                                                                                  |
|----------|----------------------------------------------------------------------------------|
| मञ्जूषा- | वार्षिकी,शिमलातः,ज्वरेण,मातृचरणाः,गृहम्,स्वास्थ्यम्,समुचितं, नमः, समयः, चिन्ता । |
|----------|----------------------------------------------------------------------------------|

.3 अधोलिखितं चित्रं दृष्ट्वा मञ्जूषायां प्रदत्तपदानां सहायतया पञ्च वाक्यानि लिख्यन्ताम् —

#### मञ्जूषा

वृक्षेषु, मण्डूकः, तिष्ठः, जलगतस्य, नृत्यति, इन्द्रधनुषः, दोलाभिः, टर्-टर् इति शब्दम्,  
 श्रावणमासस्य, वर्षायाः, अनुभवन्ति, कुर्वन्ति



4. अधोलिखितं संवादं मञ्जूषायां प्रदत्तपदानां सहायतया पूरयत-

सत्सङ्गते (i) .....को न जानसि ? संसारे द्विधा जनाः सन्ति, सज्जनाः दुर्जनाश्च । दुर्जनस्य संगतिम् कोऽपि  
 कर्तुम् न इच्छति। अपरत्र सत्संगं विना जीवनम् एव (ii).....भवति। वस्तुतः (iii).....जनानां पोषिका  
 कुसंगतिश्च नाशिका। अतः सत्संगतिः एव श्रेयसी। (iv) .....तु स्वगुणैः एव सन्तः कथयन्ते, अतएव जनाः  
 सज्जनानां सङ्गतिम् इच्छन्ति । सद्गुणेनैव जनः (v).....वाचा कर्मणा स्वस्थो भवति।

\* मञ्जूषा: -- मनसा, सज्जनाः, सत्सङ्गतिः, दुर्जीवनं, महिमानम् ।

5 अधोलिखित वाक्येषु प्रदत्तविकल्पेभ्यः उचित शब्दरूपं चित्वा लिखत . -

| शोभते जीवनं न तु सौन्दर्येण ..... (i)

विद्यायाः (घ) विद्यां (ग) विद्यया (ख) विद्या (क)

? नाम किम् अस्ति ..... (ii)

भवन्तम् (घ) भवतः (ग) भवती (ख) भवान् (क)

| प्रवहन्ति ..... :पर्वतेभ्यः अनेका (iii)

नद्यः (घ) नदीभ्यः (ग) नद्याः (ख) नदी (क)

| विद्यालयः अस्ति ..... एषः(vi)

अस्मासु (घ) अस्माकं (ग) अस्मद् (ख) आवाम् (क)

अस्म (घ) अस्माकं (ग) अस्मद् (ख) आवाम् (क) ासु

नद्याम् (ख)नद्याः (ग)नदीम्

- (v) अहम्.....नमामि ।  
 (क)विष्णुम् (ख)विष्णोः (ग)विष्णवे
- (VI) गुरुः .....आशीर्वादं यच्छति ।  
 (क)छात्रान् (ख)छात्राणाम् (ग)छात्रेभ्यः
- (VII) सः.....जलं आनयति ।  
 (क)जलाशयेन (ख)जलाशयात् (ग)जलाशयस्य
- (VIII) .....बालकाः तरन्ति ।

## 6. अधोलिखित वाक्येषु प्रदत्तविकल्पेभ्यः उचित शब्दरूपं चित्वा लिखत –

- |..... पुत्रः पितरौ (i)  
 सेवन्ते (घ) सेवति (ग) सेवते (ख) सेवे (क)
- |..... पुरा दशरथस्य चत्वारः पुत्राः (ii)  
 आसन् (घ) आसीत् (ग) स्मः (ख) अस्ति (क)
- |..... अग्रिममासे अहम् रामसेतुः इति चलचित्रं (iii)  
 पश्याम (क) ि द्रक्ष्यति (घ) द्रक्ष्यामि (ग) पश्यन्ति (ख)
- |..... ये पतिश्रमं करिष्यन्ति ते एव सफलाः (vi)  
 भविष्यामः (घ) भूवन्ति (ग) भविष्यन्ति (ख) भविष्यतः (क)
- (v)गीता रमा च तत्र .....|  
 (क)पठथः (ख) पठतः (ग) पठति
- (Vi) हयः शनिवासरः .....|  
 (क)भविष्यति (ख) आसन् (ग) आसीत्
- (Vii) ते सर्वदा गुरुम् .....|  
 (क)सेवन्ते (ख) सेवते (ग) सेवसे
- (Vii) शुभाः ते पन्थानः .....|  
 (क)अस्तु (ख) अभवत् (ग) सन्तु

## 7-उपपदविभक्ति अनुसारं विकल्पेभ्यः उचितं पदं चित्वा लिखत .

- .1 एषा बालिका निपुणा अस्ति .....|  
 वीणावादना (घ) वीणावादनात् (ग) वीणावादनम् (ख) वीणावादने (क)
- ..... .2 मोदकानि रोचन्ते |  
 माम् (क) मह्यम् (ग) मयि (ख) अस्मान् (घ)
- ..... .3 कालिदासः श्रेष्ठः |  
 कवीन् (ख) कवीनाम् (क) (ग)कविभ्यः कवौ (घ)
- .4 सैनिकाः देशं रक्षन्ति .....|  
 शत्रवः (क) शत्रूणां (ख) शत्रूणाम् (ग) शत्रुभ्यः (घ)
1. भक्ताः कथयन्ति.....नमः ।  
 (क) शारदां (ख) शारदाय (ग) शारदायै

2. इदं.....अभितः वृक्षाः सन्ति ।

(क)नगरम्

(ख) नगरस्य

(ग) नगरात्

3. अलम् मिथ्या.....।

(क)भाषणस्य

(ख) भाषणात्

(ग) भाषणेन

4. सा बालिका .....निपुणा अस्ति ।

(क) कले

(ख) कलायाम्

(ग) कलाम्

### 8अधोलिखितानि वाक्यानि संस्कृतभाषया अनूद्य लिखत . -

1. तुम्हें पत्र लिखना चाहिए ।
2. श्री कृष्ण कंस के लिए पर्याप्त थे ।
3. राम मोहन पर क्रोध करता है ।
4. हमसब कल अंबिकापुर जाएँगे ।
5. गाँव के दोनों ओर खेत हैं ।
6. लिपिक अपना कार्य करता है ।
7. भारत ऋषियों की भूमि है ।
8. संस्कृत सभी भाषाओं की जननी है ।
9. कल हमदोनों रायपुर गए थे ।
10. हमें रोज व्यायाम करना चाहिये ।

### SUBJECT- HISTORY

- 1) Explain triangular slave trade carried on during 18th and 19th century.
- 2) Explain the achievements of Napoleon Bonaparte of France.
- 3) Explain the main objectives of the Russian Revolution.
- 4) Explain how Russia's participation in the First World War created conditions for the fall of Tsar.
- 5) Explain the causes of the French Revolution.
- 6) Analyse the role of thinkers and philosophers in the French Revolution.
- 7) Which period in French history is known as the Reign of Terror? Give reasons.
- 8) Explain the impact of the French Revolution on France.

### SUBJECT- DP

- 1) How did General Pervez Musharraf become the President of Pakistan? [CBSE 2015]
- 2) "In China, elections are regularly held after 5 years for electing the country's Parliament, still, it cannot be called a democratic country." Give reasons.
- 3) Since its independence in 1930, Mexico holds elections after every six years to elect its President. The country has never been under a military or dictator's rule. But still, it cannot be called a democratic country.' Give reasons.
- 4) "Democracy allows people to correct their own mistakes". Support the given statement.

- 5) "The example of Zimbabwe shows that popular approval of the rulers is necessary in a democracy, but it is not sufficient." Explain
- 6) "Democracy is the most popular form of government emerging in the modern times, still the shortcomings cannot be ruled out". Justify the statement by assessing any five shortcomings of democracy.
- 7) Describe any five values / goals of the Indian Constitution included in the Preamble.

## SUBJECT- GEOGRAPHY

### Map Work

#### Chapter 1: India – Size and Location

Locate and label on the political map of India:

- Tropic of Cancer (23° 30' N)
- Standard Meridian of India (82° 30' E)
- Southernmost, northernmost, easternmost, and westernmost points of India
- Neighbouring countries of India (Pakistan, China, Nepal, Bhutan, Bangladesh, Myanmar, Sri Lanka, Maldives)
- States and their capitals

#### Chapter 2: Physical Features of India

Mark and label the major physiographic divisions:

1. The Himalayas
  - Karakoram Range
  - Zaskar Range
  - Shiwalik Range
  - Pir Panjal Range
  - Himadri, Himachal, Shiwalik
  - Peaks: Mt. Everest (in Nepal, for reference), Kanchenjunga (in India)
2. The Northern Plains
  - Punjab, Ganga, and Brahmaputra Plains
3. The Peninsular Plateau
  - Central Highlands, Deccan Plateau
  - Aravalli Range, Vindhya Range, Satpura Range, Western & Eastern Ghats
4. The Coastal Plains
  - Konkan Coast, Malabar Coast, Coromandel Coast, Northern Circar
5. The Islands
  - Andaman and Nicobar Islands
  - Lakshadweep Islands

#### Chapter 3: Drainage

Locate and label major rivers and their tributaries:

- Indus System: Indus, Jhelum, Chenab, Ravi, Beas, Sutlej
- Ganga System: Ganga, Yamuna, Ghaghara, Gandak, Kosi, Son
- Brahmaputra System: Brahmaputra and its course
- Peninsular Rivers:
  - Godavari, Krishna, Kaveri, Mahanadi, Narmada, Tapi

Important lakes:

- Wular, Dal, Sambhar, Chilika, Pulicat, Vembanad

## Chapter 4: Climate

Mark and label:

- Major pressure and wind belts (broadly indicated)
- Areas of heavy rainfall (Western Ghats, North-Eastern states)
- Areas of low rainfall (Rajasthan, Ladakh)
- Direction of Southwest and Northeast Monsoons

## Chapter 5: Natural Vegetation and Wildlife

Locate and label major vegetation types:

- Tropical Evergreen Forests (Western Ghats, NE States)
- Tropical Deciduous Forests (Central India)
- Thorn Forests (Rajasthan, Gujarat)
- Montane Forests (Himalayas)
- Mangrove Forests (Sundarbans, Andaman & Nicobar)

National Parks/Wildlife Sanctuaries:

- Corbett (Uttarakhand)
- Kaziranga (Assam)
- Gir (Gujarat)
- Sundarbans (West Bengal)
- Kanha (Madhya Pradesh)
- Ranthambore (Rajasthan)

## Chapter 6: Population

Mark and label:

- Densely populated states (Bihar, West Bengal, UP, Kerala)
- Sparsely populated states (Arunachal Pradesh, Sikkim, J&K)
- Major states with high and low literacy levels (Kerala, Bihar, etc.)

## SUBJECT- CHEMISTRY

1. Identify element, compound and mixture from the following.

Coal, sodium, brass, vinegar, blood, sodium chloride, gold, carbon, glucose, air, and mercury.

2. Write three properties of suspension.

3. What is dispersion medium and dispersed phase of foam and butter?

4. Write the factor which decreases the rate of evaporation along with reason.

5. When perfume is sprayed in one corner of a room and its smell reaches the other side, which property of matter is demonstrated?

6. Write the difference between solid, liquid and gases on the basis of KE, density and volume.

7. A student takes water in two beakers and marks them A and B. He adds common salt in both of these beakers and electrolyzes the second mixture.

Which one is physical change and which one is chemical change.

8. A jeweler uses 22 carat gold to make ornaments instead of pure gold.

What is the composition of 22 carat gold. State one difference between an alloy and a compound in terms of properties. In what way an alloy is better than pure metal.

9. Give reason

a. Camphor disappears when left open at the room temperature.

- b. We get the smell of hot sizzling food even when are meters away from it?
10. Why did the temperature of the ice-water mixture remain constant during melting even though heat was supplied?
11. What is the term for the heat absorbed during melting without a change in temperature?
12. Name the process in which steam changes back to water. Is this process exothermic or endothermic?
13. Which causes severe burn steam or boiling water. Why? What is the m.p of water in kelvin scale?
14. Calculate the mass of water and glucose required to make 250 g of 40% solution of glucose.
15. Answer the following question from the given table:-

| Salt dissolved | Solubility at different temperature |      |      |      |      |
|----------------|-------------------------------------|------|------|------|------|
|                | 290K                                | 313K | 323K | 343K | 353K |
| X              | 22                                  | 34   | 40   | 93   | 109  |
| Y              | 43                                  | 43   | 46   | 50   | 50   |
| Z              | 27                                  | 30   | 34   | 37   | 40   |
| T              | 25                                  | 38   | 42   | 54   | 64   |

- A) If 43 g Y is dissolved in 100 g of water at 313 K ,what type of solution is formed saturated or unsaturated? What happens to the solution when it is heated to 353 K?
- B) What mass of 'T' would be crystallized and separated out when a solution of T is cooled from 343 K to 313 K ?
16. The table given below shows number of grams of five different solids dissolving in 100g of solvent, water ,alcohol and chloroform at 20°C

| Solvent    | Salt | Sugar | Iodine | Chalk | Urea |
|------------|------|-------|--------|-------|------|
| Water      | 36   | 204.0 | 0.6    | 0.0   | 100  |
| Alcohol    | 0.0  | 0.0   | 20.0   | 0.0   | 16.0 |
| Chloroform | 0.0  | 0.0   | 3.0    | 0.0   | 0.0  |

- a. Which solid is maximum soluble in alcohol?
- b. How much quantity of sugar will be dissolved by 150 g of water at 20°C
17. An unknown substance 'A' on thermal decomposition produces 'B' and 'C'. What is 'A'? An element or compound ? Give reason
18. Identify the non metal, yellow coloured powder soluble in CS<sub>2</sub>
19. What will be the concentration of solution by volume if 20 ml of acid is mixed in 170 ml of water.
20. Define Tyndall effect. Write any two examples of Tyndall effect that you observe in daily life.

### SUBJECT- BIOLOGY

- Which animal tissue helps in repair of tissue and fills the space inside the organ?
- What is a goblet cell?
- What is the name of bone cells?
- Which blood cells deal with immune reaction?
- Mention the function of bones.
- Mention the components of blood with their function.
- Differentiated between tendons and ligaments.

8. Describe the structure and function of different types of epithelial tissues. Draw the diagram for each type of epithelial tissue.
9. A person met with an accident in which two long bones of the hand were dislocated. What could be the reason?
10. Differentiate between bones and cartilage.
11. Differentiate the following activities on the basis of voluntary or involuntary muscles.
  - (a) Jumping of frog
  - (b) Pumping of the heart
  - (c) Writing with hand
  - (d) Movement of chocolate in your intestine
12. Why are voluntary muscles also called skeletal muscles?
13.
  - (a) What is the lining of blood vessels made up of?
  - (b) What is the lining of small intestine made up of?
  - (c) What is the lining of kidney tubules made up of?
  - (d) Where are the epithelial cells with cilia found?
14. Differentiate between voluntary and involuntary muscles. Give one example of each type.
15. What will happen if heparin remains absent in blood ?
16. **Give** three features of cardiac muscles.
17. Diagrammatically show the difference between the three types of muscle fibres.
18. Draw a labelled diagram of neuron.
19. Mention the location and function of Adipose tissue.
20. What is lymph ? Write its function ?

## SUBJECT- PHYSICS

Motion, Force & Laws of Motion, Gravitation (up to Mass and Weight)

### Part A – Easy Questions (10 Questions)

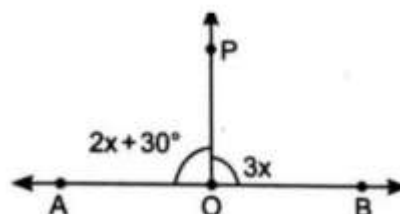
1.
  - (a) Define speed and velocity.
  - (b) Write two differences between them.
2. A car travels 180 km in 3 hours. Find its average speed in km/h and m/s.
3.
  - (a) State Newton's First Law of Motion.
  - (b) Give one example from daily life that illustrates it.
4. State and explain the relation between force, mass, and acceleration.
5.
  - (a) Define acceleration due to gravity.
  - (b) On what factors does it depend?
6. Differentiate between mass and weight (any two points).
7.
  - (a) Define uniform motion.
  - (b) How does the distance–time graph look for uniform motion? Draw it.
8.
  - (a) Write the mathematical expression for Newton's Third Law of Motion.
  - (b) Give one example from daily life where it is observed.
9.
  - (a) State the Universal Law of Gravitation.
  - (b) Write its mathematical form and define each term.
10. Why does a stone fall faster than a feather in air but both fall together in vacuum?

## Part B – Moderate to Difficult Questions (10 Questions)

11. A car starting from rest attains a velocity of 20 m/s in 10 s. Find its acceleration and distance travelled.
12. (a) State the second law of motion.  
(b) Derive its mathematical form.
13. A stone is thrown vertically upward with a velocity of 20 m/s. Find (i) the maximum height reached, and (ii) the time taken to reach the top. (Take  $g = 10 \text{ m/s}^2$ )
14. (a) Define momentum.  
(b) Prove the relation between force and rate of change of momentum.
15. An object is moving in a circular path at a constant speed. Is it in uniform motion? Justify your answer.
16. A force of 25 N acts on a body of mass 5 kg for 4 s. Find (a) the acceleration produced, and (b) the final velocity if it starts from rest.
17. (a) What is free fall?  
(b) Prove that the velocity of a freely falling body after time  $t$  is  $v = gt$ .
18. An object weighs 98 N on Earth. What will be its mass? What will be its weight on the Moon? (Take  $g_{\text{moon}} = 1/6 g_{\text{earth}}$ )
19. A car increases its velocity from 10 m/s to 25 m/s in 3 s. Calculate (i) acceleration, (ii) distance travelled, and (iii) final kinetic energy of the car if its mass is 1000 kg.
20. A man jumps from a boat to the shore and the boat moves backward. Explain this observation using Newton's laws.

## SUBJECT- MATHS

- Q.1 Find three different irrational numbers between the rational numbers  $5/7$  and  $9/11$ .
- Q.2 In which quadrant or on which axis do each of the points  $(-2,4)$ ,  $(3,-1)$ ,  $(-4,0)$ ,  $(2,3)$  lie?
- Q.3 If the two points are A  $(-3,7)$  and B  $(-7,5)$ , then what is (abscissa A) - (abscissa B)?
- Q.4 Find the area of an equilateral triangle having side 6 cm.
- Q.5 Write the equation  $3x+6y=12$ . In standard form and find the value of a, b and c
- Q.6 Write four solutions of  $x + y = 8$ .
- Q.7 Write any three Euclid's postulate.
- Q.8 Find the product of  $(x + a)(x + b)$
- Q.9 Find the value of  $f(x) = 5x - 4x^2 + 3$  when  $x = -1$
- Q.10 What will be the coefficient of  $x^3$  in  $9x^3 - 5x + 20$ .
- Q.11 Expand  $(4p + 5q)^3$  using suitable identity
- Q.12 Find the value of x



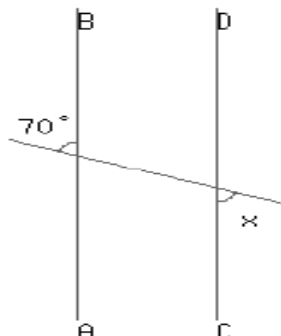
- Q.13 Write  $0.666666\dots$  in  $p/q$  form.

Q.14 The value of  $(3 + \sqrt{3})(3 - \sqrt{3})$

Q.15 Expand  $(\sqrt{2} + \sqrt{3})^2$

Q.16 The value of  $(25)^{\frac{3}{2}}$

Q.17 Find the value of  $x$



Q.18 Represent  $\sqrt{2}$  in number a line.

Q.19 Find the supplement angle of  $75^\circ$

Q.20 Write Euclid's axioms.

Q.21 If  $a = b^{3x}$ ,  $b = c^{3y}$  and  $c = a^{3z}$  then find the value of  $xyz$ .

Q.22 Rationalize the denominator  $1/(\sqrt{10} + \sqrt{14} + \sqrt{15} + \sqrt{21})$

Q.23 Find the area of an isosceles triangle having base 2 cm and length of one of the equal sides 4 cm.

Q.24 If  $x^2 + \frac{1}{x^2} = 14$  then, find the value of  $x^3 + \frac{1}{x^3}$

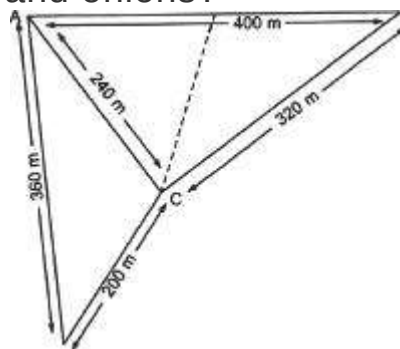
Q.25 If  $\frac{1}{x} = \frac{2^{74} + 2^{72}}{2^{72} + 2^{70}}$  find the value of  $x$

Q.26 Find the value of  $\frac{1}{1-x} + \frac{1}{1+x} + \frac{2}{1+x^2} + \frac{4}{1+x^4} + \frac{8}{1+x^8}$

Q.27 If  $a = 7 - 4\sqrt{3}$ , then find the value of  $\sqrt{a} + \frac{1}{\sqrt{a}}$

Q.28 Factorise :  $x^6 + y^6$

Q.29 A farmer has a triangular field with sides 240 m, 200 m and 360 m, where he grew wheat. In another triangular field with sides 240 m, 320 m and 400 m adjacent to the previous field, he wanted to grow potatoes and onions (see figure). He divided the field into two parts by joining the mid point of the longest side to the opposite vertex and grew potatoes in one part and onions in the other part. How much area (in hectares) has been used for wheat, potatoes and onions?



Q.30 Find the height of a trapezium in which parallel sides are 25 cm, 77 cm and non-parallel sides are 26 cm and 60 cm when the area of the trapezium is  $1644 \text{ cm}^2$ .

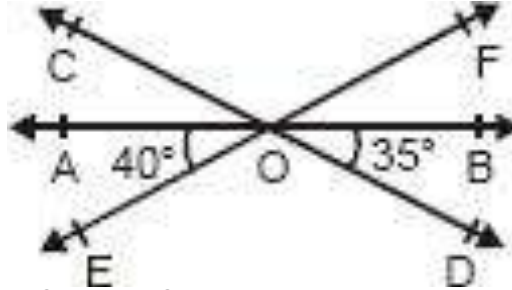
Q.31 If  $2^a = 3^b = 6^c$  then show that  $c = \frac{ab}{a+b}$ .

Q.32 Determine rational numbers p and q if

$$\frac{7+\sqrt{5}}{7-\sqrt{5}} - \frac{7-\sqrt{5}}{7+\sqrt{5}} = p - 7\sqrt{5}q.$$

Q.33 The exterior angles obtained on producing the base of a triangle both ways are  $100^\circ$  and  $120^\circ$ . Find all the angles.

Q.34 In the given figure, lines AB, CD and EF intersect at O. Find the measure of  $\angle AOC$ ,  $\angle COF$ .



Q.35 If  $x^2 - 3x + 2$  divides  $x^3 - 6x^2 + ax + b$  exactly, then find the value of 'a' and 'b'

Q.36 **Factorise:**  $(a - b)^3 + (b - c)^3 + (c - a)^3$

Q.37 **Factorise:**  $14x^3 - 45x^3y^3 - 14y^6$

Q.38 **Factorise:**  $x^4 + x^2 + 1$

Q.39 **Factorise:**  $x^3 + 6x^2 + 11x + 6$

Q.40 If  $a + b + c = 0$ , then prove that  $(a + b - c)^3 + (c + a - b)^3 + (b + c - a)^3 = -24abc$

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