

# English Worksheet

Class: IX

**Read the passage carefully and answer the questions that follow:**

Antarctica, an isolated and harsh continent, has been a focal point for scientific studies conducted by various countries over the years. The pursuit of understanding its unique environment has led to collaborative efforts and individual initiatives.

In the early 20th century, the British Antarctic Expedition (1901-1904), led by Robert Falcon Scott, marked the inception of systematic exploration. Since then, nations like the United States, Russia, and China have established research stations, such as McMurdo Station, Vostok Station, and Kunlun Station, respectively, to conduct multidisciplinary studies.

The International Geophysical Year (IGY) in 1957-1958 saw a surge in scientific activities, with countries pooling resources. The establishment of the Antarctic Treaty System in 1959 further facilitated cooperative research. Any measures of a military nature, including testing of any type of weapons, are prohibited; any nuclear explosions in Antarctica and the disposal there of radioactive waste material are proscribed. Over the years, advancements in technology have enabled sophisticated studies, with disciplines ranging from glaciology and meteorology to biology.

In recent years, the focus has expanded to climate change research. The European Space Agency's CryoSat-2 satellite and NASA's Operation Ice Bridge have played crucial roles in monitoring ice thickness and changes in the region. Additionally, the drilling project at Lake Vostok, led by Russia, provided insights into ancient climates through ice core samples.

Antarctica remains a testament to international collaboration in scientific exploration, with countries utilizing cutting-edge technologies to unravel the mysteries of this pristine and extreme environment.

1. What was the primary focus of the British Antarctic Expedition (1901-1904)?

- A) Geological studies
- B) Biological research
- C) Meteorological observations
- D) Oceanography

2. During which event did the International Geophysical Year (IGY) take place?

- A) 1965-1966

B) 1957-1958

C) 1980-1981

D) 1930-1931

3. Which country led the drilling project at Lake Vostok, providing insights into ancient climates?

4. In Antarctica, what is the main focus of the European Space Agency's CryoSat-2 satellite?

A) Glaciology

B) Meteorology

C) Oceanography

D) Seismology

5. Which research station is operated by China in Antarctica?

A) Scott Base

B) Halley Research Station

C) McMurdo Station

D) Kunlun Station

6. Which technological advancement enabled the monitoring of ice thickness in Antarctica?

A) Ground-penetrating radar

B) Satellites

C) Underwater drones

D) Sonar technology

7. Among the following statements, which one(s) is/ are incorrect regarding the Antarctic Treaty System?

I) It was established in 1959.

II) It allows military activities.

III) It facilitates cooperative research.

IV) It does not prohibit nuclear testing.

A) Only II

B) I, II & III

C) II & IV

D) III & IV

8. What is the purpose of NASA's Operation Ice Bridge in Antarctica?

9. Find the antonym of 'decline' in the third paragraph.

10. In the passage, what is the synonym for "inception"?

A) Conclusion

B) Commencement

C) Culmination

D) Termination

### **Grammar**

1. Fill in the blanks by using the correct form of verbs given in the brackets.

Mini (a).....(get) up at 7am. She saw her father(b).....(do) some yoga exercises. She (c).....(think) she (d).....(start) following him from the next day. She (e).....(have) her breakfast at 8am. Then she (f).....(get) ready for school. "What (g).....(do), Mini?" mother's voice came.

2. Fill in the blanks by choosing the correct option:

a. Too many vehicles on roads.....the air bad.

i. are polluting                      ii. polluting

iii. pollute                      iv. are being polluting

b. By the time he....., I will have reached home.

i. will come back                      ii. comes back

iii. come back                      iv. came back

c. She .....for his letter since last month.

i. has been waiting                      ii. have been waiting

iii. am waiting                      iv. is wait

d. The doctor concluded that the patient.....five hours ago.

i. died                      ii. has die

iii. will have died                      iv. had died

e. Recently she .....many awards for her contribution to fine arts.

i. has won

ii. wins

iii. won

iv. will have win

3. Turn into indirect speech:

- a) She said to Sam, "I will meet you at the library tomorrow."
- b) "Why didn't you attend the meeting?" he asked me.
- c) Meghna said, "My father is not coming here."
- d) "I have completed the project on time," she said.

प्रश्न 1 . निर्देशानुसार 'उपसर्ग-प्रत्यय' पर आधारित पाँच बहुविकल्पी प्रश्नों के उत्तर दीजिए-

(i) 'अनुरोध' शब्द में प्रयुक्त उपसर्ग है-

(क) अनु (ख) अन (ग) आन (घ) रोध

(ii) 'वि' - वह शब्द चुनिए, जिसमें इस उपसर्ग का प्रयोग नहीं हुआ ?

(क) विषकन्या (ख) विभाग (ग) विक्रय (घ) विशिष्ट

(iii) 'अत्यंत' - शब्द में कौन-सा प्रत्यय प्रयुक्त हुआ है ?

(क) अ (ख) अत (ग) अति (घ) अती

(iv) 'तम' - प्रत्यय से निर्मित शब्द चुनिए -

(i) उच्चतम (ii) उत्तम (iii) पतम (iv) गतम

(क) केवल (i) सही है (ख) (i) व (iii) सही है

(ग) (i) व (ii) सही है (घ) (ii) व (iv) सही है

(v) कॉलम - 1 (शब्द) को कॉलम 2 (प्रत्यय) के साथ सुमेलित कीजिए और सही विकल्प चुनकर लिखिए -

कॉलम 1

कॉलम 2

1. घबराहट

1. आनी

2. देवरानी

2. आई

3. चढ़ाई

3. आहट

विकल्प

(क) 1-(iii), 2-(i), 3-(ii)

(ख) 1-(ii), 2-(iii), 3-(i)

(ग) 1-(ii), 2-(i), 3-(iii)

(घ) 1-(i), 2-(ii), 3-(iii)

(VI) दिए गए शब्दों में से उपसर्ग तथा मूल शब्द अलग - अलग करके लिखिए -

उपसर्ग

मूलशब्द

1 अंतर्मुखी -

2 दुर्दशा -

3 संशोधन –

4 पर्यावरण-

5 अत्याचार –

(VII) दिए गए उपसर्गों में से दो-दो शब्द बनाइए –

1 अनु .....

2 अप .....

3 नि .....

4 स/सु .....

5 बे .....

(viii) नीचे दिए शब्दों में उपसर्ग लगाकर नए शब्द बनाइए –

हाज़िर .....

पुत्र .....

ज्ञान .....

जला .....

तीस .....

(IX) नीचे दिए गए शब्दों में किन उपसर्गों का प्रयोग हुआ है ? लिखिए –

शब्द	उपसर्ग
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1 प्रहार	.....
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2 कुपुत्र	.....
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3 खुशहाल .....

4 अतिथि .....

5 पुरातत्व .....

(x) निम्नलिखित शब्दों के सामने दिए गए मूल शब्द से जुड़े उपसर्ग के विकल्पों में से सही विकल्प चुनिए –

अत्यंत , अवगुण , बाकायदा

क अति + अंत, अव + गुण , बा + कायदा

ख अत्यं + त, अ + वगुण , बाकाय + दा

ग अंति + अंत , अवगु + ण , बाक + यदा

घ इनमें से कोई नहीं

प्रश्न 2 .निर्देशानुसार 'समास' पर आधारित पाँच बहुविकल्पी प्रश्नों में से किन्हीं चार प्रश्नों के उत्तर दीजिए-  
(1x 4=4)

(i) कॉलम – 1 को कॉलम 2 के साथ सुमेलित कीजिए और सही विकल्प चुनकर लिखिए –

कॉलम 1	कॉलम 2	
समस्त-पद	विग्रह	भेद का नाम
1.शिवालय	शिव का आलय	(i) द्वंद्व समास
2.परमेश्वर	परम है जो ईश्वर	(ii)तत्पुरुष समास
3.अन्न-जल	अन्न और जल	(iii) कर्मधारय समास

विकल्प

(क) 1-(iii), 2-(i), 3-(ii) (ख) 1-(i), 2-(ii), 3-(iii)

(ग) 1-(ii), 2-(iii), 3-(i) (घ) 1-(ii), 2-(i), 3-(iii)

(ii) 'पंचवटी'-शब्द समास का कौन-सा भेद है ?

(क) कर्मधारय (ख) द्विगु (ग) द्वंद्व (घ) तत्पुरुष

(iii) 'कमलनयन'- समस्त-पद का सही विग्रह कौन-सा है ?

(क) नयन के समान कमल (ख) कमल के समान नयन

(ग) कमल और नयन (घ) कमल नयनों का समूह

(iv) 'अव्ययीभाव समास' समास का उदहारण कौन सा है ?

(क) यथाशीघ्र (ख) परमात्मा (ग) पंचतंत्र (घ) नाप-तौल

(v) जिस समास में पहला पद अव्यय हो, उसे कहते हैं –

(क) अव्ययीभाव समास (ख) द्विगु

(ग) कर्मधारय (घ) द्वंद्व

प्रश्न 3 निर्देशानुसार 'अर्थ के आधार पर वाक्य-भेद' पर आधारित प्रश्नों के उत्तर दीजिए-

(i) इनमें से इच्छावाचक वाक्य होगा-

(क) अगर वह चले, तो मैं अवश्य जाऊँगा

(ख) शायद हम घुमने जाएँ ।

(ग) आप सब पर प्रभु की कृपा बनी रहे ।

(घ) क्या तुम पढ़ोगे ?

(ii) 'यदि छुट्टियाँ हुई, तो हम कश्मीर अवश्य जायेंगे' अर्थ के आधार पर वाक्य का कौन-सा भेद है-

(क) प्रश्नवाचक (ख) संकेतवाचक

(ग) विधानवाचक (घ) संदेहवाचक

(iii) 'आज तो मज़ा आ गया।' इस वाक्य का विस्मयवाचक वाक्य में परिवर्तन होगा-

(क)क्या मज़ा आया ?

(ख)आज मज़ा आएगा ।

(ग) आज तो मज़ा नहीं आया ।

(घ)वाह!आज तो मज़ा आ गया ।

(iv)इनमें से इच्छावाचक वाक्य होगा –

(क)अगर वह चले' तो मैं अवश्य जाऊँगा।

(ख)शायद हम घुमने जाएँ ।

(ग)आप सब पर प्रभु की कृपा बनी रहे ।

(घ)क्या तुम पढ़ोगे ?

(v) कॉलम – 1 को कॉलम 2 के साथ सुमेलित कीजिए और सही विकल्प चुनकर लिखिए –

कॉलम 1

कॉलम 2

1.क्या युद्ध में जय बोलने वालों का महत्त्व है ? (i) निषेधवाचक

2.यदि तुम परिश्रम करते तो सफल हो जाते । (ii)इच्छावाचक

3.आज वर्षा नहीं होगी । (iii)प्रश्नवाचक

विकल्प

(क)1-(ii),2-(i),3-(iii)

(ख) 1-(i),2-(ii),3-(iii)

(ग) 1-(iii),2-(ii),3-(i)

(घ) 1-(ii),2-(i),3-(iii)

प्रश्न 4 निर्देशानुसार 'अलंकार' पर आधारित प्रश्नों के उत्तर दीजिए-  
निम्नलिखित काव्य पंक्तियों में प्रयुक्त अलंकार का नाम होगा –

(i)जेते तुम तारे तेते नभ में न तारे हैं ।

(क) रूपक (ख)उपमा (ग)यमक (घ)अनुप्रास

(ii) चारु-चंद्र की चंचल किरणें,खेल रहीं थीं जल-थल में ।

(क) रूपक (ख)उपमा (ग)यमक (घ)अनुप्रास

(iii) पीपर पात सरिस मन डोला ।

(क) रूपक (ख) उपमा (ग) यमक (घ) अनुप्रास

(iv) 'आए महंत वसंत ।'

(क) रूपक (ख) उपमा (ग) यमक (घ) अनुप्रास

(v) 'यमक अलंकार' का उदहारण होगा-

(क) तीन बेर खाती थीं वे तीन बेर खाती हैं ।

(ख) आए महंत वसंत ।

(ग) संसार की समर-स्थली में धीरता धारण करो ।

(घ) हाय! फूल-सी कोमल बच्ची, हुई राख की थी ठेरी।

प्रश्न 3. निर्देशानुसार 'अर्थ के आधार पर वाक्य भेद' पर आधारित पाँच बहुविकल्पी प्रश्नों में से किन्हीं चार प्रश्नों के उत्तर दीजिए- (1x 4=4)

(i) 'अनुरोध' शब्द में प्रयुक्त उपसर्ग है-

(क) अनु (ख) अन (ग) आन (घ) रोध

(ii) 'वि' - वह शब्द चुनिए, जिसमें इस उपसर्ग का प्रयोग नहीं हुआ ?

(क) विषकन्या (ख) विभाग (ग) विक्रय (घ) विशिष्ट

(iii) 'अत्यंत' - शब्द में कौन-सा प्रत्यय प्रयुक्त हुआ है ?

(क) अ (ख) अत (ग) अति (घ) अती

(iv) 'तम' - प्रत्यय से निर्मित शब्द चुनिए -

(i) उच्चतम (ii) उत्तम (iii) पतम (iv) गतम

(क) केवल (i) सही है (ख) (i) व (iii) सही है

(ग) (i) व (ii) सही है (घ) (ii) व (iv) सही है

(v) कॉलम - 1 (शब्द) को कॉलम 2 (प्रत्यय) के साथ सुमेलित कीजिए और सही विकल्प चुनकर लिखिए -

कॉलम 1

कॉलम 2

1. घबराहट

1. आनी

2. देवरानी

2. आई

3. चढ़ाई

3. आहट

विकल्प

(क) 1-(iii), 2-(i), 3-(ii)

(ख) 1-(ii), 2-(iii), 3-(i)

(ग) 1-(ii), 2-(i), 3-(iii)

(घ) 1-(i), 2-(ii), 3-(iii)

प्रश्न 4. निर्देशानुसार 'समास' पर आधारित पाँच बहुविकल्पी प्रश्नों में से किन्हीं चार प्रश्नों के उत्तर दीजिए- (1x 4=4)

(i) कॉलम – 1 को कॉलम 2 के साथ सुमेलित कीजिए और सही विकल्प चुनकर लिखिए –

कॉलम 1	कॉलम 2	
समस्त-पद	विग्रह	भेद का नाम
1. शिवालय	शिव का आलय	(i) द्वंद्व समास
2. परमेश्वर	परम है जो ईश्वर	(ii) तत्पुरुष समास
3. अन्न-जल	अन्न और जल	(iii) कर्मधारय समास

विकल्प

(क) 1-(iii), 2-(i), 3-(ii) (ख) 1-(i), 2-(ii), 3-(iii)

(ग) 1-(ii), 2-(iii), 3-(i) (घ) 1-(ii), 2-(i), 3-(iii)

(ii) 'पंचवटी'-शब्द समास का कौन-सा भेद है ?

(क) कर्मधारय (ख) द्विगु (ग) द्वंद्व (घ) तत्पुरुष

(iii) 'कमलनयन'- समस्त-पद का सही विग्रह कौन-सा है ?

(क) नयन के समान कमल (ख) कमल के समान नयन

(ग) कमल और नयन (घ) कमल नयनों का समूह

(iv) 'अव्ययीभाव समास' समास का उदहारण कौन सा है ?

(क) यथाशीघ्र (ख) परमात्मा (ग) पंचतंत्र (घ) नाप-तौल

(v) जिस समास में पहला पद अव्यय हो, उसे कहते हैं –

(क) अव्ययीभाव समास (ख) द्विगु

(ग) कर्मधारय (घ) द्वंद्व

प्रश्न 5 निर्देशानुसार 'अर्थ के आधार पर वाक्य-भेद' पर आधारित पाँच बहुविकल्पी प्रश्नों में से किन्हीं चार प्रश्नों के उत्तर दीजिए- (1x 4=4)

(i) इनमें से इच्छावाचक वाक्य होगा-

(क) अगर वह चले, तो मैं अवश्य जाऊँगा

(ख) शायद हम घुमने जाएँ ।

(ग) आप सब पर प्रभु की कृपा बनी रहे ।

(घ) क्या तुम पढ़ोगे ?

(ii) 'यदि छुट्टियाँ हुई, तो हम कश्मीर अवश्य जायेंगे' अर्थ के आधार पर वाक्य का कौन-सा भेद है-

(क) प्रश्नवाचक (ख) संकेतवाचक

(ग) विधानवाचक (घ) संदेहवाचक

(iii) 'आज तो मज़ा आ गया।' इस वाक्य का विस्मयवाचक वाक्य में परिवर्तन होगा-

(क) क्या मज़ा आया ?

(ख) आज मज़ा आएगा ।

(ग) आज तो मज़ा नहीं आया ।

(घ) वाह! आज तो मज़ा आ गया ।

(iv) इनमें से इच्छावाचक वाक्य होगा –

(क) अगर वह चले' तो मैं अवश्य जाऊँगा।

(ख) शायद हम घुमने जाएँ ।

(ग) आप सब पर प्रभु की कृपा बनी रहे ।

(घ) क्या तुम पढ़ोगे ?

(v) कॉलम – 1 को कॉलम 2 के साथ सुमेलित कीजिए और सही विकल्प चुनकर लिखिए –

कॉलम 1

कॉलम 2

1. क्या युद्ध में जय बोलने वालों का महत्त्व है ? (i) निषेधवाचक

2. यदि तुम परिश्रम करते तो सफल हो जाते । (ii) इच्छावाचक

3.आज वर्षा नहीं होगी ।

(iii)प्रश्नवाचक

विकल्प

(क)1-(ii),2-(i),3-(iii)

(ख) 1-(i),2-(ii),3-(iii)

(ग) 1-(iii),2-(ii),3-(i)

(घ) 1-(ii),2-(i),3-(iii)

प्रश्न 6 निर्देशानुसार 'अलंकार' पर आधारित पाँच बहुविकल्पी प्रश्नों में से किन्हीं चार प्रश्नों के उत्तर दीजिए- (1x 4=4)

निम्नलिखित काव्य पंक्तियों में प्रयुक्त अलंकार का नाम होगा –

(i)जेते तुम तारे तेते नभ में न तारे हैं ।

(क) रूपक (ख)उपमा (ग)यमक (घ)अनुप्रास

(ii) चारु-चंद्र की चंचल किरणें,खेल रहीं थीं जल-थल में ।

(क) रूपक (ख)उपमा (ग)यमक (घ)अनुप्रास

(iii) पीपर पात सरिस मन डोला ।

(क) रूपक (ख)उपमा (ग)यमक (घ)अनुप्रास

(iv) 'आए महंत वसंत ।'

(क) रूपक (ख)उपमा (ग)यमक (घ)अनुप्रास

(v) 'यमक अलंकार' का उदहारण होगा-

(क) तीन बेर खाती थीं वे तीन बेर खाती हैं ।

(ख) आए महंत वसंत ।

(ग) संसार की समर-स्थली में धीरता धारण करो ।

(घ) हाय! फूल-सी कोमल बच्ची,हुई राख की थी ढेरी।

.....X.....

# Mathematics Worksheet

## Class – IX

**Q. 1 – Q. 10 are multiple choice questions. Select the most appropriate answer from the given options.**

1. The measure of the angle between the coordinate axes is  
(a)  $0^\circ$  (b)  $90^\circ$  (c)  $180^\circ$  (d)  $360^\circ$
2. If  $x^3 - 3x^2 + 3x + 7 = (x + 1)(ax^2 + bx + c)$ , the  $a + b + c$  is equal to  
(a) 4 (b) 12 (c)  $-10$  (d) 3
3. If  $p(x) = 3x + 10$ , then  $p(x) + p(-x)$  is equal to  
(a)  $6x + 20$  (b)  $6x$  (c) 20 (d) 0
4. If equation of X-axis is  $y = k$ , then the value of  $k$  is  
(a) 0 (b) 1 (c) 2 (d) 3
5. If  $x = 2$  and  $y = 4$ , then the value of  $\left(\frac{x}{y}\right)^{x-y} + \left(\frac{y}{x}\right)^{y-x}$  is  
(a) 4 (b) 8 (c) 12 (d) 2
6. If  $(x, y) = (2k - 1, k)$  is a solution of the equation  $3x - 5y - 7 = 0$ , then the value of  $k$  will be  
(a) 2 (b) 5 (c) 10 (d) 15
7. The graph of the equation  $x = a$  is a straight line parallel to  
(a) X-axis (b) Y-axis (c) Both of them (d) None of these
8. An angle is one-fifth of its supplement, then the measure of the angle is  
(a)  $15^\circ$  (b)  $30^\circ$  (c)  $45^\circ$  (d)  $60^\circ$
9. In  $\triangle ABC$ , if  $BC = AB$  and  $\angle B = 80^\circ$ , then  $\angle A$  equals to  
(a)  $40^\circ$  (b)  $50^\circ$  (c)  $60^\circ$  (d)  $70^\circ$
10. If  $\triangle ABC \cong \triangle FDE$  and  $AB = 5$  cm,  $\angle B = 40^\circ$ ,  $\angle A = 80^\circ$ , then  $\angle E$  equals to  
(a)  $30^\circ$  (b)  $60^\circ$  (c)  $90^\circ$  (d)  $120^\circ$

**(Q. 11 – Q. 15) Fill in the blanks:**

11. A line drawn from the mid-point of one side of a triangle ..... to another side intersects the third side at its .....
12. Two triangles, lie on same base and between same parallel lines, have ..... area.
13. A circle divides the plane, on which it lies, in ..... parts.
14. Two circles of the same radii are .....
15. Equal chords of congruent circles subtend equal angles at the .....

**(Q. 16 – Q. 20) Answer the following:**

16. ABC and ADC are two right angled triangles with common hypotenuse AC. Prove that  $\angle CAD = \angle CBD$ .
17. If the height of an equilateral triangle measures 9 cm, then find its area.

**OR**

Find the area of a triangle, whose base and altitude are 5 cm and 8 cm, respectively.

18. The radius of a solid hemisphere is 7 cm. Find its total surface area.
19. A cone, a hemisphere and a cylinder stand on equal bases and have the same height. Then, find the ratio of their volumes.
20. Write  $(3a + 4b + 5c)^2$  in expanded form.
21. Evaluate by using suitable identity:  $(104)^3$
22. In which quadrant or on which axis do each of the points  $(-2, 4)$ ,  $(3, -1)$ ,  $(-1, 0)$  and  $(-3, -5)$  lie?
23. Write equations of two lines passing through  $(2, 14)$ .
24. Prove the following statement:

*The sum of the angles of a triangle is  $180^\circ$ .*

**OR**

The angles of quadrilateral are in the ratio  $3 : 5 : 9 : 13$ . Find all the angles of the quadrilateral.

25. Locate  $\sqrt{3}$  on number line.
26. Factorise  $x^3 - 23x^2 + 142x - 120$ .
27. A shot-putt is a metallic sphere of radius 4.9 cm. If the density of the metal is 7.8 g per  $cm^3$ , find the mass of the shot-putt.

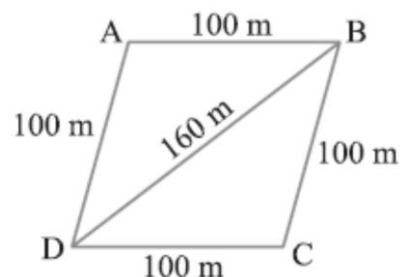
OR

Monica has a piece of canvas whose area is  $551 \text{ m}^2$ . She uses it to have a conical tent made, with a base radius of 7 m. Assuming that all the stitching margins and the wastage incurred while cutting, amounts to approximately  $1 \text{ m}^2$ , find the volume of the tent that can be made with it.

28. A triangular park ABC has sides 120m, 80m and 50m. A gardener *Dhania* has to put a fence all around it and also plant grass inside. How much area does she need to plant? Find the cost of fencing it with barbed wire at the rate of Rs 20 per metre leaving a space 3m wide for a gate on one side.

OR

Sanya has a piece of land which is in the shape of a rhombus. She wants her one daughter and one son to work on the land and produce different crops. She divided the land in two equal parts. If the perimeter of the land is 400 m and one of the diagonals is 160 m, how much area each of them will get for their crops?



29. Calculate the mean and mode for the following data:

<b>Marks</b>	10	15	20	25	30	35	40
<b>Number of students</b>	8	12	25	30	25	12	8

30. In a city, the weekly observations made in a study on the cost-of-living index are given in the following table:

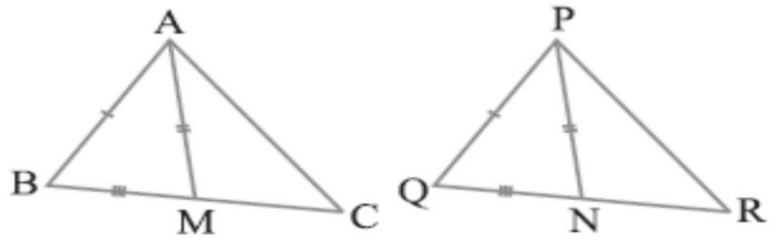
<b>Cost of living index</b>	<b>Number of weeks</b>
140 – 150	5
150 – 160	10
160 – 170	20
170 – 180	9
180 – 190	6
190 – 200	2
<b>Total</b>	<b>52</b>

Draw a frequency polygon for the above-mentioned data.

31. If  $a$  and  $b$  are rational numbers and  $\frac{\sqrt{11} - \sqrt{7}}{\sqrt{11} + \sqrt{7}} = a - b\sqrt{77}$ , then find the values of  $a$  and  $b$ .

32. Simplify  $(a + b)^3 - (a - b)^3 - 6b(a^2 - b^2)$ .

33. In figure, two sides AB and BC and median AM of one triangle ABC are respectively equal to sides PQ and QR and median PN of  $\triangle PQR$ . Show that:



(i)  $\triangle ABM \cong \triangle PQN$

(ii)  $\triangle ABC \cong \triangle PQR$

**OR**

If two isosceles triangles have a common base, then prove that the line segment joining their vertices bisects the common base at right angles.

34. State and prove the Converse of Mid-point Theorem.

35. A cubical box has each edge 8 cm and another cuboidal box is 12 cm long, 8 cm wide and 6 cm high.

(i) Which box has the greater lateral surface area and by how much?

(ii) Which box has smaller total surface area and by how much?

**OR**

A cylindrical road roller made of iron is 1.5 m wide. Its inner diameter is 60 cm and thickness of iron sheet rolled into the road roller is 10 cm. Find the weight of the roller if  $1 \text{ cm}^3$  of iron weigh 8 grams.

# WORKSHEET

## Subject- Sanskrit

### Class-IX

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

अस्माकं देशः प्राचीनकालादेव प्राकृतिक-पर्यावरणस्य पोषकः वैदिककाले यद्यपि पर्यावरणस्य प्रदूषणस्य समस्या नासीत् तथापि वेदेषु स्थाने-स्थाने ऋषीणां पर्यावरणविषयकं चिन्तनं दृश्यते । अद्य पर्यावरण- प्रदूषणं संसारस्य भीषणतमा समस्या वर्तते, परं जनाः अस्याः गाम्भीर्यं न अनुभवन्ति। पर्यावरणं रक्षणीयं वृक्षाः रोपणीयाः रक्षणीयाः च इति शृण्वन्तः उद्घोषयन्तः अपि वयम् प्रतिदिनं तेषां कर्तनं पश्यामः। “प्लास्टिक” इति रसायनेन निर्मितवस्तूनि पर्यावरणाय हानिकराणि इति जानन्तः अपि जनाः एतेषां प्रयोगं बाहुल्येन कुर्वन्ति । पर्यावरण- प्रदूषकं धूमं क्षिपतां वाहनानाम् औद्योगिक-यन्त्रागाराणां संख्या निरन्तरं वर्धमाना अस्ति । यद्यपि विकासाय नवीनाः आविष्काराः, अपेक्षिताः परं सञ्चाराय विस्तृताः सुरक्षिताः मार्गाः जनानां कृते अपि आवश्यकाः एव । यदि पर्यावरणं प्राणिजीवनाय अनुकूलं न भविष्यति तर्हि पृथिव्यां जीवनमेव असंभवं भविष्यति तदा भौतिकनिकासेन किम् ! अतः सर्वकारः जनसहयोगेन सर्वथा पर्यावरणरक्षणाय यत्नशीलः भवेदिति ।

#### अ. एकपदेन उत्तरत- (केवलं प्रश्नद्वयम्)

( i) के रोपणीयाः रक्षणीयाः च ?

( ii) कदा पर्यावरणस्य प्रदूषणस्य समस्या नासीत् ?

(iii) अस्माकं देशः कस्य पोषकः ?

ब. पूर्णवाक्येन उत्तरत-(केवलं प्रश्नद्वयम्)

- (i) किं जानन्तः जनाः प्लास्टिक-निर्मितवस्तूनां 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 पश्यामः।' अस्मिन् वाक्ये  
'पश्यामः' क्रियायाः कर्तृपदं किं प्रयुक्तम्?
  - ( क) तेषां ( ख) वयम् (ग) पश्यामः
- ( iv) 'शोषकः' इति पदस्य किं विलोमपदं गद्यांशे 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 (iii).....परीक्षा सञ्चरति ।अत्र छात्रावासे पठनस्य वातावरणं तु शोभनं वर्तते। अत्र अध्यापकाःअपि च अतीव कर्मठाःसन्ति । अतः पठनस्य कार्यम् (iv) .....एव भवति, परन्तु अध्ययनकारणात् शयनस्य भोजनस्य च (v).....एव न प्राप्यते । अतः अद्यत्वे मम (vi) .....सुष्ठु नास्ति । अहं (vii).....पीडिता अस्मि । परं काचिद् अपि (viii).....नैव करणीया। आशासे अहं शीघ्रमेव पूर्णतया स्वस्था भविष्यामि ।परीक्षायाःअनन्तरं (ix).....आगमिष्यामि । तदा वयम् मिलित्वा भ्रमणाय वाराणसीनगरम् गमिष्यामः । पित्रे (x).....।

भवत्या : पुत्री

प्रभा

मञ्जूषा-	वार्षिकी,शिमलातः,ज्वरेण,मातृचरणाः,गृहम्,स्वास्थ्यम्,समुचितं, नमः, समयः, चिन्ता ।
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### 3. अधोलिखित वाक्येषु प्रदत्तविकल्पेभ्यः उचित शब्दरूपं चित्वा लिखत -

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

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

(ii) ..... नाम किम् अस्ति ?

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

(iii) पर्वतेभ्यः अनेकाः ..... प्रवहन्ति ।

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

(iv) एषः ..... विद्यालयः अस्ति ।

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

(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 ।

नद्याम् (ख) नद्याः (ग) नदीम्

#### 4. अधोलिखित वाक्येषु प्रदत्तविकल्पेभ्यः उचित शब्दरूपं चित्वा लिखत -

(i) पुत्रः पितरौ .....।

(क) सेवे (ख) सेवते (ग) सेवति (घ) सेवन्ते

(ii) पुरा दशरथस्य चत्वारः पुत्राः .....।

(क) अस्ति (ख) स्मः (ग) आसीत् (घ) आसन्

(iii) अग्रिममासे अहम् रामसेतुः इति चलचित्रं .....।

(क) पश्यामि (ख) पश्यन्ति (ग) द्रक्ष्यामि (घ) द्रक्ष्यति

(iv) ये पतिश्रमं करिष्यन्ति ते एव सफलाः .....।

(क) भविष्यतः (ख) भविष्यन्ति (ग) भूवन्ति (घ) भविष्यामः

(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

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

1. एषा बालिका ..... निपुणा अस्ति ।

(क) वीणावादने (ख) वीणावादनम् (ग) वीणावादनात् (घ) वीणावादना

2. .... मोदकानि रोचन्ते ।

(क) माम् (ख) मयि (ग) मह्यम् (घ) अस्मान्

3. .... कालिदासः श्रेष्ठः ।

(क) कवीनाम् (ख) कवीन् (ग) कविभ्यः (घ) कवौ

4. सैनिकाः ..... देशं रक्षन्ति ।

(क) शत्रवः (ख) शत्रूणां (ग) शत्रूणाम् (घ) शत्रुभ्यः

5. भक्ताः कथयन्ति.....नमः ।

(क) शारदां (ख) शारदाय (ग) शारदायै

6. इदं.....अभितः वृक्षाः सन्ति ।

(क) नगरम्

(ख) नगरस्य

(ग) नगरात्

7. अलम् मिथ्या.....।

(क) भाषणस्य

(ख) भाषणात्

(ग) भाषणेन

8. सा बालिका .....निपुणा अस्ति ।

(क) कले

(ख) कलायाम्

(ग) कलाम्

## 6. अधोलिखितानि 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 ।

VACATION HOMEWORK

(DECEMBER2023)

WORKSHEET OF SCIENCE

**INSTRUCTION: Solve the questions given below in loose sheet and submit it to the science teacher after the vacations. Fully solved submission will get FULL MARKS in MA.**

Q1. A rocket is moving up with a velocity  $v$ . If the velocity of this rocket is suddenly tripled, what will be the ratio of two kinetic energies?

Q2. A ball of mass 0.5 kg slows down from a speed of 5m/s to 3m/s, calculate the change in the kinetic energy of the ball.

Q3. Give an example for

- a. force acting in the direction of displacement
- b. force acting against the direction of displacement
- c. force acting perpendicular to the direction of displacement

Q4. Represent graphically-

- a. Two sound waves having the same amplitude but different frequencies.
- b. Two sound waves having the same frequency but different amplitude

Q5. What type of energy is stored in the following cases?

- a. A stretched rubber band
- b. A compressed spring
- c. An object at a certain height
- d. A stretched bow

Q6. Draw a curve showing density or pressure variations with respect to distance for a disturbance produced by sound. Mark the position of compression and rarefaction on this curve. Also define wavelength and time period using this curve.

Q7. Find the frequency of wave whose time period is 0.001 second.

Q8. Write the formula and calculate the formula mass (molecular mass) of the following compounds.

- a. Calcium sulphate
- b. Aluminium nitrate
- c. Ammonium carbonate

Q9. Write the electronic configuration of the following.

- a.  $\text{Mg}^{2+}$
- b.  $\text{N}^{3-}$
- c. Ca
- d.  $\text{Al}^{3+}$

Q10. When 3 g of carbon is burnt in 8 g of oxygen to form 11 g of carbon dioxide. What mass of carbon dioxide is formed when 10 g of carbon is burnt in 8 g of oxygen? Which law of chemical combination will govern your answer?

Q11. Find out the atomicity and compute the ratio by mass of the combining elements in each one of the given molecules.

- a. Ammonia      b. Glucose      c. Hydrogen chloride

Q12. If the K and L shells of an atom are full, then what would be the

- a. total number of electrons and protons?      b. Valency?      c. Identify the element.

Q13. Differentiate anode and cathode rays and also name the scientists who observed these rays for the first time.

Q14. An element Z forms an oxide  $ZO$ . What will be the formula of its chloride and phosphate?

Q15. What has the following revolution lead to?

- a. Green Revolution      b. White Revolution      c. Yellow Revolution  
d. Silver Revolution      e. Blue Revolution

Q16. Compare between fertiliser and Manure.

Q17. Name three methods used for improving the crop varieties.

Q18. List some steps you would take to improve the crop production in your crop field.

Q19. What are weeds? How can we protect our crop from them?

Q20. Write two examples of each of the following –

- a. Indigenous, Exotic and Cross breeds of Cow.  
b. Indigenous, Exotic and Cross breeds of poultry birds.

Q21. Write a short note on Induced breeding technique in fish farming.

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## **HOLIDAY HOMEWORK**

### **SOCIAL SCIENCE**

#### **Topic: Medicinal Plants in India**



As part of your research based holiday homework, we would like you to explore the fascinating world of medicinal plants. Prepare a project on Medicinal plants that grows in India and provide information for the highlighted points.

#### **Ensure your research covers the following Instructions:**

- Choose any two medicinal plants
- Plant Identification
- Botanical names
- Characteristics of plants
- Geographical area of occurrence

- Medicinal Properties
- Economic value
- Any historical or cultural significance
- Traditional Uses
- Ongoing research on these plants in the medical field
- Demarcate the Medicinal plant in the outline map of India

**Research:** Once you got your facts checked, it is time to conduct research. You should consult a variety of sources, including academic journals, books and news articles. Your research should be thorough and well-documented

**Evaluation Parameters:** Your project will be evaluated on several parameters, including the Cover page, quality of your research, the clarity of your writing, content (the depth of your analysis), and the overall coherence of your report

**Submission:** Your project should be submitted to your subject teacher latest by **05.01.2024**. Please mention your ***Name, Class & Section, and the title of your project on the Cover page.***

Remember to present your findings in a clear and concise manner. Feel free to use visuals or diagrams to enhance your presentation. Wishing you a fruitful research experience!

Best regards!

**OPJS-R**