एंजिल्स एकेडमी सीनियर सेकेंडरी स्कूल

प्रथम पेन पेपर परीक्षा के लिए **प्रश्न बैंक**

कक्षा–X : (2024-25)

विषय-हिंदी (002)

प्रश्न-1.निम्नलिखित प्रश्नों के उत्तर लिखिए।

1. सेनानी न होते हुए भी चश्मेवाले को लोग कैप्टन क्यों कहते थे?

2. हालदार साहब ने ड्राइवर को पहले चौराहे पर गाड़ी रोकने के लिए मना किया था लेकिन बाद में तुरंत रोकने को क्यों कहा?

3. आशय स्पष्ट कीजिए

   "बार-बार सोचते, क्या होगा उस कौम का जो अपने देश की खातिर घर-गृहस्थी-जवानी-जिंदगी सब कुछ होम देनेवालों पर भी हँसती है और अपने लिए बिकने के मौके ढूँढ़ती है।

4. जिस कस्बे में मूर्ति लगवाई जानी थी उसका संक्षिप्त वर्णन कीजिए।

5. पानवाले का एक रेखाचित्र प्रस्तुत कीजिए।

6. निम्नलिखित वाक्य पात्रों की कौन-सी विशेषता की ओर संकेत करते हैं

(क) हालदार साहब हमेशा चौराहे पर रुकते और नेताजी को निहारते।

(ख) पानवाला उदास हो गया। उसने पीछे मुड़कर मुँह का पान नीचे थूका और सिर झुकाकर अपनी धोती के सिरे से आँखें पोंछता हु बोला-साहब! कैप्टन मर गया।

(ग) कैप्टन बार-बारे मूर्ति पर चश्मा लगा देता था।

7. खेतीबारी से जुड़े गृहस्थ बालगोबिन भगत अपनी किन चारित्रिक विशेषताओं के कारण साधु कहलाते थे?

8. भगत की पुत्रवधू उन्हें अकेले क्यों नहीं छोड़ना चाहती थी?

9. भगत ने अपने बेटे की मृत्यु पर अपनी भावनाएँ किस तरह व्यक्त कीं?

10. बालगोबिन भगत की दिनचर्या लोगों के अचरज का कारण क्यों थी?

11. भगत के व्यक्तित्व और उनकी वेशभूषा को अपने शब्दों में चित्र प्रस्तुत कीजिए।

12. पाठ के आधार पर बालगोबिन भगत के मधुर गायन की विशेषताएँ लिखिए।

13. कुछ मार्मिक प्रसंगों के आधार पर यह दिखाई देता है कि बालगोबिन भगत प्रचलित सामाजिक मान्यताओं को नहीं मानते थे। पाठ के आधार पर उन प्रसंगों का उल्लेख कीजिए।

14. गोपियों द्वारा उद्धव को भाग्यवान कहने में क्या व्यंग्य निहित है?

15. गोपियों ने किन-किन उदाहरणों के माध्यम से उद्धव को उलाहने दिए हैं?

16. उद्धव द्वारा दिए गए योग के संदेश ने गोपियों की विरहाग्नि में घी का काम कैसे किया?

17. मरजादा न लही' के माध्यम से कौन-सी मर्यादा न रहने की बात की जा रही है?

18. गोपियों ने उधव से योग की शिक्षा कैसे लोगों को देने की बात कही है?

प्रश्न-2. रचना के आधार पर वाक्य के भेद-

1. 'बिमारी के कारण मैं महाविद्यालय नहीं जा सका'। वाक्य को संयुक्त वाक्य में बदलिए -

   A) मैं महाविद्यालय नहीं जा सका, बिमारी के कारण।

   B) मैं बिमार हो गया था, इसलिए महाविद्यालय नहीं जा सका।

   C) बिमारी के कारण मैं कई दिनों तक महाविद्यालय नहीं जा सका था।

   D) बिमारी के कारण मैं विद्यालय नहीं जा सका।

2. 'आपकी तरह कोई और नहीं लिखता'। वाक्य को मिश्र वाक्य में बदलिए -

   A) आपके लिखने का अंदाज बहुत अच्छा हैं।

   B) आप बहुत अच्छा लिखते हैं।

   C) आपकी तरह कोई ओर लिख ही नहीं सकता ।

   D) जैसा आप लिखते हैं वैसा कोई और नहीं।

3. 'मैं चाहता था कि आज हिंदी पढ़ूँ'। वाक्य को सरल वाक्य में बदलिए -

   A) जैसे ही मेरा मन किया कि आज हिंदी पढ़ूँ लाइट चली गई।

   B) मैं चाहता था कि मैं हिंदी पढ़ूँ।

   C) मैं आज हिंदी पढ़ना चाहता था।

   D) मेरा मन था कि आज हिंदी पढ़ूँ।

4. 'बदमाश लोगों से सभी दूर रहना चाहते हैं'। वाक्य को मिश्र वाक्य में बदलिए -

   A) बदमाश लोगों से सभी दूर रहना चाहते हैं कोई बात नहीं करता।

   B) जो बदमाश होते है सभी उनसे दूर रहना चाहते हैं।

   C) सभी बदमाश लोगों से दूर रहते हैं।

   D) बदमाश लोगों से सभी दूर रहते हैं क्योंकि वे सभी से झगड़ा करते हैं।

5. 'जब से यहाँ वर्षा आया है तब से पानी बढ़ गया' । वाक्य का सम्बन्ध किससे है-

   A) संयुक्त वाक्य से

   B) सरल वाक्य से

   C) मिश्र वाक्य से

   D) प्रश्न वाक्य से

6. 'जैसे ही चोरी हुआ पुलिस आ गए'। वाक्य को संयुक्त वाक्य में बदलिए -

   A) जैसे ही पुलिस आए चोर भाग गए।

   B) पुलिस आए और चोर भाग गए।

   C) पुलिस आते ही चोर भाग गए।

   D) पुलिस आते ही चोरों को भागना पड़ा।

7. 'जब-जब चुनाव होंगे तब-तब महँगाई बढ़ेगी'। वाक्य को सरल वाक्य में बदलिए -

   A) जैसे ही चुनाव होगा वैसे ही महँगाई बढ़ेगी।

B) जब-जब चुनाव होगा तब-तब महँगाई बढ़ जायेगा यह सत्य है।

C) चुनाव आने से ही महँगाई बढ़ जाएगी।

D) जब-जब चुनाव आएंगे तब-तब महँगाई बढ़ जाएंगे ।

8. 'कक्षा में प्रथम आने वाले छात्र को ईनाम दिया गया।'। वाक्य को मिश्र वाक्य में बदलिए -

A) जो छात्र कक्षा में प्रथम आया था उसे ईनाम दिय गया।

B) कक्षा में प्रथम आने वाले छात्र को हमेशा ईनाम दिय जाता है ।

C) छात्र को ईनाम दिया गया कक्षा में प्रथम आने पर।

D) जो कक्षा में प्रथम आता है उस छात्र को ईनाम दिया जाता है।

9. 'आप आ कर सो जाए' । वाक्य को संयुक्त वाक्य में बदलिए -

A) क्योंकि आप गए है तो आप सो सकते हैं।

B) आप आ कर सोने चले जाएँ।

C) आ कर हमेशा सो जाए ।

D) आप आएँगे और सोएंगे।

प्रश्न-3. पत्र

- अपने विद्यालय के प्रधानाचार्य को पत्र लिखिए जिसमें पुस्तकालय में हिंदी की अच्छी पुस्तकें व पत्रिकाएँ मँगवाने के लिए निवेदन किया गया हो।

- नवभारत टाइम्स के संपादक को पत्र लिखिए जिसमें सड़क दुर्घटनाओं को रोकने के सुझाव हों।

- हिंदुस्तान टाइम्स दिल्ली के संपादक के नाम एक पत्र लिखकर सामाजिक जीवन में बढ़ रही हिंसा पर अपने विचार व्यक्त कीजिए।

- विद्यालय के खेल कप्तान होने के नाते प्रधानाचार्य के प्रति आभार व्यक्त करते हुए पत्र लिखिए।

- आप अपने लिए ऑनलाइन पुस्तकें खरीदी थीं। रुपये जमा हो गए परंतु पुस्तकें प्राप्त नहीं हो सकी। इस बात की शिकायत करते हुए संबंधित अधिकारी को लगभग 120 शब्दों में पत्र लिखिए।

- आपके द्वारा की गई शिकायत से आपको अपना बैग वापस मिल गया। प्रबंधन की प्रशंसा करते हुए किसी समाचार पत्र के संपादक को लगभग 120 शब्दों में पत्र लिखिए।

- आपसे अपने बचत खाते की चेक बुक खो गई है। इस संबंध में बैंक प्रबंधक को उचित कार्यवाही करने के लिए पत्र लिखिए।

- नगर निगम को एक पत्र लिखिए जिसमें नालियों की सफ़ाई एवं कीटनाशक दवाओं के छिड़काव का सुझाव हो।

- आप अपने आसपास अनेक अशिक्षित प्रौढ़ों को देखते हैं और उन्हें साक्षर बनाने हेतु कुछ प्रयास करते हैं। इस विषय में जानकारी देते हुए अपने मित्र मानव को पत्र लिखिए ।

- माता जी को समझाते हुए लगभग 100 शब्दों में एक पत्र लिखिए ।

- आपकी चचेरी दीदी कॉलेज में दाखिला लेना चाहती हैं, किंतु आपके चाचा जी आगे की पढ़ाई न करवाकर उनकी शादी करवाना चाहते हैं। इस बारे में अपने चाचा जी को समझाते हुए लगभग 120 शब्दों में एक पत्र लिखिए।
- छात्रावास में रहने वाले अपने छोटे भाई को एक पत्र 80-100 शब्दों में लिखकर प्रातःकाल नियमित रूप से योग एवं प्राणायाम का अभ्यास करने के लिए प्रेरित कीजिए।
- आपकी कक्षा में एक नए अध्यापक पढ़ाने आए हैं जो कि बहुत अच्छा पढ़ाते हैं। उनके विषय में परिचयात्मक सूचना देते हुए अपने मित्र को लगभग 80-100 शब्दों में एक पत्र लिखिए।
- आपके जन्म-दिवस के अवसर पर आपके मामाजी उपहार भेजते है इसके लिए उन्हें आभार-पत्र लिखिए।
- विद्यालय के छात्रों के साथ समाज सेवार्थ जाने के लिए पिता से अनुमति मांगते हुए पिता को पत्र लिखिए।
- आपका मित्र परीक्षा में अनुत्तीर्ण हो गया है। इस विषय पर मित्र को सांत्वना देते हुए पत्र लिखिए।

प्रश्न 4 अनुच्छेद

- वन और पर्यावरण का सम्बन्ध
- कम्प्यूटर एक जादुई पिटारा
- ग्लोबल वार्मिंग
- पर्यावरण पर अनुच्छेद
- पृथ्वी बचाओ पर अनुच्छेद
- शिक्षा पर अनुच्छेद
- भ्रष्टाचार पर अनुच्छेद
- अच्छे शिष्टाचार पर अनुच्छेद
- शिक्षा के महत्व पर अनुच्छेद
- प्रदूषण पर अनुच्छेद
- किताबों पर अनुच्छेद
- स्वच्छता पर अनुच्छेद
- ग्लोबल वार्मिंग पर अनुच्छेद
- सोशल मीडिया पर अनुच्छेद
- जल बचाओ पर अनुच्छेद
- स्वच्छता अभियान पर अनुच्छेद
- बढ़ती महंगाई पर अनुच्छेद
- अनुशासन पर अनुच्छेद

1. **Letter writing (100 -120 words)**

   i. You are Kavita Khanna, a resident of 50-C, Pushp Vihar, New Delhi. Write a letter to the editor of 'India Today', magazine about the article on 'Ban Poly Bags' published in the latest edition.

   ii. You are Rahul living at 7, Raven Organics, Orchard Road Mumbai. You purchased a washing machine last week from Tirupati Stores Nampally , Mumbai but it is not working properly. Write a complaint letter to the dealer to raise the issue regarding the same with necessary details.

   iii. The Computer Hub, Chanakyapuri, New Delhi has advertised a discount of 20% on all types of computers and related hardware. You are Rahul, owner of Softpoint Innovations, 110- 111, Nehru Place, New Delhi. Place an order for suitable items for your company.

2. **Subject -verb concord .**

   i.   The lady in the car ___like your mother. (look/looks)
   ii. Most of the milk __gone. (is/are)
   iii. One of the flowers ___wilted. (has/have)
   iv. Either Ram or Shyam___coming today. (is/are)
   iv. Here ___ the newspaper. (is/are)
   v.   The group of dancers ___ here. is/are
   vi. Civics __my favorite subject. (is/are)
   vii. Neither I, nor my mother ___ to go out in rain. Like/likes
   ix. Majority of the board members ____ with the CEO. agrees/agree
   x.   My spectacles __ broken. are/is

3. **Read the given extracts and answer the questions that follow:**
   i."The way a crow

   Shook down on me

   The dust of snow

   From a hemlock tree"

   a. Where was the crow ?

   b. What did it shake on the poet?

   c. What is the rhyme scheme of the stanza?

   d. What is the poet's state of mind?

   ii. But if it had to perish twice,
   I think I know enough of hate
   To say that for destruction ice
   Is also great
   And would suffice.

a. What does 'it' refer to in the first line?

b. What do you mean by 'perish'?

c. What does ice stand for?

d. What would be the cause of destruction?

iii. It was during the meal that, just as Lencho had predicted, big drops of rain began to fall. In the North East huge mountains of clouds could be seen approaching. The air was fresh and sweet. The man went out for no other reason than to have the pleasure of feeling the rain on his body.

a. What could be seen approaching in the North-east?

i. A huge flock of birds could be seen approaching in the North-east.

ii. Thick clouds of dust storm could be seen in the North-east.

iii. Huge mountains of clouds filled with water could be seen in the North-east.

iv. Thunder, lightning and a comet could be seen approaching in the North-east.

b. Why did Lencho go out?

c. Which one of the following is not a synonym of predicted?

i. examine

ii. foresee

iii. speculate

iv. None of these

d. What had Lencho predicted?

4. Answer the following questions in 40-50 words:

i. Why were the rain drops like the new coins for Lencho?

ii. Why did Lencho ask help from God?

iii. Describe the damage caused by the falling of the hailstones?

iv. How did the poet feel before the 'change of Mood'? Why did he feel so?

v. What happened when Dust of Snow fell on Robert Frost?

vi. Why does the poet hold with those who favour fire?

vii. How does the poet 'know enough of hate'? Where will this 'hate ' lead to?

viii. What special diet did Mrs. Pumphery give to build Tricki up?

ix. Describe the gradual progress of Tricki at the Surgery?

x. Why did Tricki become an uninteresting object for other dogs at the surgery?

5. Answer the following questions in 100-120 words:

i. Give a character sketch of Mrs. Pumphery?

ii. Why does the poet feel that he has at least saved 'some part 'of the day? Describe the role of the postmaster and his staff in keeping Lencho's faith in God. Why did Lencho call his benefactors 'a bunch of crooks'?

iii. Writing a letter to God for help, really shows not only the unshaken faith in God of the writer Lencho but also shows his utter simplicity and innocence. Comment.

iv. What did the doctor suggest and why? (A Triumph of Surgery)

ANGELS' ACADEMY SR. SEC. SCHOOL
QUESTION BANK FOR PPT-1
CLASS-X (2024-25)
MATHEMATICS (041)

GENERAL INSTRUCTIONS:

1. All questions are compulsory.

2. This question bank divided into 5 sections A, B, C, D & E.

3. Section- A comprises of 25 questions of 1 mark each, Section-B comprises of15 questions of 2 marks each, Section –C comprises of 10 questions of 3 marks each and Section –D comprises of 6 questions of 5 marks each. Section –E comprises of 3 case study include 4 questions of 1 mark each,

3. Work should be neat and clean.

SECTION – A
(1 MARK EACH)

1. The HCF X LCM for the numbers 50 and 20 is:

   A) 0 　　　　　　　　 B) 10 　　　　　　　　 C) 100 　　　　　　　　 D) 1000

2. $119^2 - 111^2$ is :

   A) Prime number 　　　　　　　　 B) Composite number

   C) An odd prime number 　　　　　　　　 D) An odd composite number

3. Which is not an irrational number:

   A) $5 - \sqrt{3}$ 　　　　 B) $\sqrt{2} - \sqrt{5}$ 　　　　 C) $4 + \sqrt{2}$ 　　　　 D) $6 + \sqrt{9}$

4. Given that HCF (2520, 6600) = 120 , LCM (2520, 6600) = 252 x k , then the value of k is :

   A) 550 　　　　　　　　 B) 1600 　　　　　　　　 C) 165 　　　　　　　　 D) 1625

5. If d = LCM (36, 198) , then the value of d is :

   A) 396 　　　　　　　　 B) 198 　　　　　　　　 C) 36 　　　　　　　　 D) 1

6. If n is any natural number, then which of the following expressions end with 0:

   A) $(3 \times 2)^n$ 　　　　 B) $(4 \times 3)^n$ 　　　　 C) $(5 \times 4)^n$ 　　　　 D) $(6 \times 2)^n$

7. Let a and b be two positive integers such that a = $p^8 q^4$ and b = $p^5 q^5$, where p and q are prime numbers. If HCF (a, b) = $p^m q^n$ and LCM (a, b) = $p^r q^s$, then (m + n) (r + s) = ?

   (A) 117 　　　　 (B) 120 　　　　 (C) 260 　　　　 (D) 72

8. Three alarm clocks ring their alarms at regular intervals of 20 min, 25 min and 30 min, respectively. If they first beep together at 12 noon, at what time they will beep again for the first time?

   A) 4 : 00 pm 　　　 (B) 4 : 30 pm 　　　 (C) 5 : 00 pm 　　　 (D) 5: 30 pm

9. Given that sin A = ½ and cos A = 1/ $\sqrt{2}$, then the value of A + B is :

   A) 30^0 　　　　　　　　 B) 45^0 　　　　　　　　 C) 75^0 　　　　　　　　 D) 15^0

10. Given that sin θ = a/b, find cos θ :

   A) $b /\sqrt{(b^2 - a^2)}$ 　　　　　　　　 (B) b / a

   (C)$\sqrt{(b^2 - a^2)}/ b$ 　　　　　　　　 (D) a / $\sqrt{(b^2 - a^2)}$

11. If $\sec \theta + \tan \theta = p$ then $\tan \theta$ is :

   A) $(p^2 + 1)/2p$

   B) $(p^2 - 1)/2p$

   C) $(p^2 - 1)/(p^2 + 1)$

   D) $(p^2 + 1)/(p^2 - 1)$

12. The value of θ in $5\sin^2\theta - \cos^2\theta = 2$ is:

   (A) 30^0
   (B) 45^0
   (C) 60^0
   (D) 90^0

13. If $\sin A + \sin^2 A = 1$, then the value of the expression $(\cos^2 A + \cos^4 A)$ is:

   (A) 1
   (B) 1/2
   (C) 2
   (D) 3

14. $(\sec A + \tan A)(1 - \sin A) = ?$

   (A) sec A
   (B) sin A
   (C) cosec A
   (D) cos A

15. When the Sun's altitude changes from 30° to 60°. the length of the shadow of a tower decreases by 70m. What is the height of the tower?

   (A) 35 m
   (B) 140 m
   (C) $35\sqrt{3}$ m
   (D) $2\sqrt{3}$ m

16. The angle of elevation of the top of the tower is 60° and the horizontal distance from the observer's eye to the foot of the tower is 100 m, then the height of the tower will be:

   (A) $50\sqrt{3}$ m
   (B) $100/\sqrt{3}$ m
   (C) $100\sqrt{3}$ m
   (D) $60\sqrt{3}$ m

17. The angle of depression of a car parked on the road from the top of 120 m high tower is 30°. The distance of the car from the tower (in metres) is :

   (A) $120\sqrt{3}$ m
   (B) 120 m
   (C) $40\sqrt{3}$ m
   (D) none of these

18. From the top of a cliff 30 m high, the angle of elevation of the top of a tower from cliff top is found to be equal to the angle of depression of the foot of the tower. The height of the tower is:

   (A) 30 m
   (B) 60 m
   (C) 20 m
   (D) 50 m

19. If $\csc \theta - \cot \theta = 1/3$, the value of $(\csc \theta + \cot \theta)$ is:

   (A) 1
   (B) 2
   (C) 3
   (D) 4

20. If $\theta = 45^0$, the value of $\csc^2\theta$:

A) $1/\sqrt{2}$
   B) 1
   C) 1/2
   D) 2

21. $[\cos^2\beta / \sin^2\beta] - [1/\sin^2\beta]$ in simplified form is:

   A) $\tan^2\beta$
   B) $\sec^2\beta$
   C) 1
   D) -1

ASSERTION REASON BASED QUESTIONS:
Directions: In the question number **22 – 25**, a statement of Assertion **(A)** is followed by a statement of reason **(R)** . Choose the correct option.

(A) Both Assertion a. Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A)

(B) Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A)

(C) Assertion (A) is true but Reason (R) is false
(D) Assertion (A) is false but Reason (R) is true

22. **Assertion (A)**: 11 X 4 X 3 X 2 + 4 is a composite number.

 Reason (R): Every composite number can be expressed as product of primes.

23. Assertion (A): For $0^0< \theta \leq 90^0$, cosec θ - cot θ and cosec θ + cot θ are reciprocal of each other.

 Reason (R): $cosec^2 \theta - cot^2\theta = 1$.

24. **Assertion (A):** If cos A + cos^2 A = 1 then sin^2 A + sin^2 A = 2.

 Reason (R): $1 - sin^2$ A = cos^2 A for any value of A.

25. Assertion **(A):** If the length of shadow of a vertical pole is equal to its height, then the angle of elevation of the Sun is 45°.

Reason (R): Trigonometric ratio, tangent is defined as tan θ = Perpendicular / Base.

SECTION B
(2 MARKS EACH)

1. Check whether there is any value of n for which 4^n ends with the digit zero.

2. Check whether there is any value of n for which 20^n ends with the digit zero.

3. Given that $\sqrt{3}$ is irrational, prove that $5 + 2\sqrt{3}$ is irrational.

3. 4 x 5 x 3 x 2 x 11+ 11 a composite number? Justify your answer.

4. Given that $\sqrt{5}$ is irrational, prove that $9 - 2\sqrt{5}$ is irrational.

5. Show that : $cosec^2 60^0 sec^2 30^0 \cos 0^0 \sin 45^0 cot^2 60^0 tan^2 60^0 = (8\sqrt{2})/9$.

6. If tan x = $\sin 45^0 \cos 45^0 + \sin 30^0$, determine x.

7. If sin(A + B) = 1 and cos (A + B) = $\sqrt{3}$ /2, then find A and B.

8. If sin θ = cos θ , find the value of 2 $tan^2\theta + sin^2\theta$ - 1.

9. Prove that :
      $(sec A - tan A)^2 = (1 - sin A) / (1 + sin A)$

10. Prove that:
      $(cos^4 A - 1) = cosec^4 A - 2 cosec^2 A$

11. A player sitting on the top of a tower of height 20 m observes the angle of depression of a ball lying on the ground as 60°. Find the distance between the foot of the tower and the ball.

12. Two poles of heights 6 m and 11 m stand vertically on the ground. If the distance between their feet is 12 m, find the distance between their tops.

13. An electric pole is 10 m high. A steel wire tied to top of the pole is affioed at a point on the ground to keep B the prole upright. If the wire makes an angle of 45° with the horizontal through the foot of the pole, find the length of the wire.

14. A tree breaks due to the storm and the broken part bends so that the top of the tree touches the ground making an angle of 45° with the ground. The distance from the foot of the tree to the point where the top touches the ground is 8 m. Find the height of the tree.

15. The angle of elevation of the top of a tower at a point on the ground is 45°. After going 40 m towards the foot of the tower, the angle elevation of the top of tower changes to 60°. Find the height of the tower. [Use sqrt(3) = 1.732]

SECTION C
(3 MARKS EACH)

16. The horizontal distance between two towers is 70 m. The angles of depression of the top of the first tower, when seen from the top of the second tower is 30°. If the height of the second tower is 120 m, find the height of the first tower.

17. The angle of elevation of the top of a tower 30 m high from the foot of another tower in the same plane is 60° and the angle of elevation of the top of the second tower from the foot of the first tower is 30°. Find the distance between the two towers and also the height of the tower.

18. Prove that $\sqrt{13}$ is irrational.

19. Prove that $\sqrt{11}$ is irrational.

20. Three alarm clocks ring their alarms at regular intervals of 20 min, 25 min and 30 min, respectively. If they first beep together at 12 noon, at what time they will beep again for the first time ?

21. Prove that :

$$\sqrt{(cosec\ A + 1)/(cosec\ A - 1\ )} = \text{sec A + tan A}$$

22. Prove that:

(cot A + tan B) / (cot B + tan A) = cot A . tan B

23. Evaluate :

$\text{Cos}^2 60^0$ tan 30^0 + sin 30^0cos 0^0 sin 60^0tan 45^0

24. Evaluate :

(tan 45^0 / cosec 30^0) + (sec 60^0 / cot 45^0) - (2 sin 90^0 / cos 0^0

25. Prove that:

(Sin A / 1 + cos A) + (1 + Icos A / sin A) = 2 cosec A

SECTION D
(5 MARKS EACH)

26. The angles of elevation of the top of a tower, as seen from two points A and B situated in the same line and at distances p and q respectively, from the foot of the tower, are complementary. Prove that the height of the tower is $\sqrt{(pq)}$.

27. From a window (h metres high above the ground) of a house in a street, the angles of elevation and depression of the top and the foot of another house on the opposite side of the street are theta and & respectively. Show that the height of the opposite house is h(1 + tan theta * cot phi)

28. A vertical tower stands on a horizontal plane and is surmounted by a vertical flagstaff of height h. At a point on the plane, the angle of elevation of the bottom of the flagstaff is α and that of the top of flagstaff is β. Prove that the height of the tower is (h tanα)/(tan β - tan α)

29. If cosec A + cot A = p , then prove that cos A = p^2 - 1 / p^2 + 1.

30. If 1 + $\sin^2\theta$ = 3 sin θ cos θ, then prove that tan θ = 1 or 1/ 2 .

31. If sin θ + cos θ = p and sec θ cosec θ= q, then prove that q(p^2 - 1) = 2p

32. In a morning walk, Naveeka, Arjun and Vedant step off together, their steps measuring 240 cm, 90 cm, 120 cm respectively. They want to go for a juice shop for a health issue, which is situated near by them.

Based on the above information, solve the following questions:

(i) Find the minimum distance of shop from where they start to walk together, so that one can cover the distance in complete steps.

(ii) Find the number of common steps covered by all of them to reach the juice shop.

(iii) Factor tree is a chain of factors, which is represented in the form of a tree. Is this statement true?

(iv) If there were 17 rows in the auditorium, how many seats will be there in the middle row?

33. A man on a cliff observes a boat at an angle of 30° which is the point the shore to beneath the observer with approaching immediately beneath the observer with a uniform speed. Six minutes later, the angle of depression of the boat is found to be 60^0.

On the basis of above information, of radius answer the following questions.

(i) Find the time taken by the boat to reach the shore.

OR

If the height of the cliff is 20 m, then find the distance between two positions of boat.

(ii) If the height of the cliff is 20 m, then find the distance between observer and the boat when the angle of depression is 30°.

(iii) If the distance between the base of the cliff and the boat is 12 m, when the angle of depression is 60°, then find the height of the cliff.

34. Read the following information, answer the following questions:

In the given figure, a circle of radius 5 cm, AM and BN are perpendicular on OP, PQ and MN are perpendicular to each other.
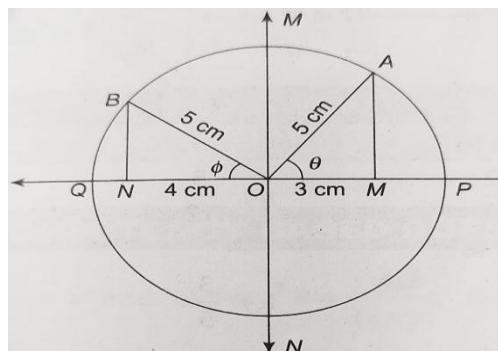
(i) Find the value of tan B .

(ii) Find the value of $\sec^2\theta - \cot^2\phi$.

(iii) find the value of tan A x cos B.

(iv) cos A = ?

VERY SHORT ANSWER TYPE QUESTIONS:

1. Which soil is ideal for growing cotton?

2. Which soil is known as regur soil?

3. What is the percentage share of plains in the total land area?

4. Who said 'There is enough for everyone need but not for anybody's greed '?

5. Where is Gully erosion common?

6. In which state is overgrazing responsible for land degradation?

7. What is the main cause of land degradation in Punjab?

8. Which soil is the most widely spread and important soil of India?

9. Which soil develops in area with high temperature and heavy rainfall?

10. What is infant mortality rate?

11. Why Kerala has low infant mortality rate?

12. How can be the development of a country generally determined?

13. What is life expectancy?

14. What is per capita income.

15. Which is the most useful measure for comparison between countries by the World Bank?

16. Human development index compares countries on which basis?

17. How is per capita income measured?

18. Who elects community government in Belgium?

19. Which major social group constituted the largest share in population of Sri Lanka?

20. In Sri Lanka the democratically elected government adopted a series of which measures to establish Sinhala supremacy?

21. Which two languages are generally spoken in Belgium?

22. What is coalition government?

23. What is vertical division of power?

24. Which language was recognised as the only official language of Sri Lanka in 1956?

25. Which ethnic group constituted a majority in Brussels?

26. Which social group is in majority in Sri Lanka?

27. Why is power sharing desirable?

28. Which special government is unique to Belgium alone?

29. Which city has the headquarter of the European Union?

30. Who elects the community government in Belgium?

LONG ANSWER TYPE QUESTIONS:

31. How is land a natural resource of utmost importance?

32. Explain any 5 characteristics of alluvial soil.

33. Distinguish between Khadar and Bhangar.

34. Which soil is regur soul ? Mention any 4 characteristics of this soil.

35. Why is Black soil considered the most suitable soil for growing cotton?

36. Explain the formation and important features of laterite soil.

37. What is soil conservation? Explain 5 methods of soil conservation.

38. 'India is rich in certain types of resources but deficient in some other resources'. Support your answer with examples.

39. "Money cannot buy all the goods and services that one needs to live well." Explain.

40. Can per capita income be regarded the sole indicator of economic development of a country?

41. "Different people have different development goals". Explain by giving examples.

42. Why is issue of sustainability important for development?

43. What is infant mortality rate? Suggest measures to keep infant mortality rate low.

44. What is significance of Human Development Index?

45. Why are the countries of Middle East not called developed in spite of high per capita income?

46. Highlight the advantages of Public Facilities?

47. What is the importance of Sustainable development? Explain with reference to ground water by giving examples.

48. 'For development people look at mix of goals' Support the statement by giving suitable examples.

49. What is the ethnic composition of Sri Lanka?

50. What is the ethnic composition of Belgium?

51. What is community government? Explain the concept of community government with context to Belgium.

52. Mention any three steps which were taken by the Sri Lankan government to achieve majoritarianism.

53. How are the ethnic problem solved in Belgium? Mention any four steps which were taken by the government to solve the problems.

54. Why is power sharing desirable? Explain.

55. Explain the major forms of power sharing in modern democracies.

56. What were the two main causes of the resentment in Belgium in 1960? How was the conflict solved?

1. How is DDL different from DML?

2. How is a foreign key different from primary key? Explain.

3. Explain the significance of using queries in database.

4. Differentiate a record from a field with examples.

5. List numeric and alphanumeric datatypes in Open Officebase.

6. Prairna is a student of class X. Her teacher has asked her to write commonly used SQL command used to create different types of queries with their syntax. Explain to her about:
   (i) CREATE TABLE command
   (ii) INSERT command
   (iii) SELECT command
   (iv) UPDATE command

7. Your friend owns a shop and maintained the record manually. But now he needs to keep the records digitally. But he does not have any knowledge about it. Explain some basic objects like:
   (i) Query   (ii) Form   (iii) Report   (iv) Marcos

8. How Entry required and Default Value properties of a table field in a database are different from each other?

9. Explain any two types of relationships that can be created in tables.

10. **Consider the following table named "GARMENT". Write SQL command of SQL for (i) to .**

GCode	GName	Size	Colour	Price
111	TShirt	XL	Red	1400.00
112	Jeans	L	Blue	1600.00
113	Skirt	M	Black	1100.00
114	Ladies Jacket	XL	Blue	4000.00
115	Trousers	L	Brown	1500.00
116	Ladies Top	L	Pink	1200.00

(i) To display names of those garments that are available in 'XL' size.
(ii) To display codes and names of those garments that have their names starting with 'Ladies'.
(iii) To display garment names, codes and prices of those garments that have price in the range 1000.00 to 1500.00. Both values are included.
(iv) To change the colour of garment with code as 116 to "Orange".

10 (a) The structure of a table "SUPPLIER" is given below. Suggest suitable data type of each column.

Suppno	Suppname	City	Amount
11	Sourabh	Delhi	98983.00
22	Pratabh	Jaipur	45780.00
33	Faviaam	Mumbai	82875.00
44	Shekhar	Jaipur	45465.00
55	Swami	Mumbai	56784.00

(b) Considered the table SUPPLIER and Write queries to :
  i.   Display the supplier details of those whose name start from "S".
  ii. Display details of suppliers whose amount is greater than 50000.
11. Consider the following table as Teachers and answer the questions by using SQL command.

T_Id	T_name	Sub	D_O_J	Salary	Gender
001	Deepika S	Hindi	04/12/2018	32000	F
002	Chandrika	English	15/5/20013	40000	F
003	Deepika K	English	20/6/2021	30000	F
004	Shagun	IT	01/4/2010	30000	F
005	Rajeev	Science	20/9/2018	31000	M
006	Renu	P.Edu	15/7/2015	32000	F
007	Ambica	P.Edu	10/8/2017	30000	F
008	Sudesh	S.ST	01/4/2010	35000	F
009	Ritu	English	01/10/2021	25000	F
010	Ankur	Maths	01/4/2019	20000	M

  1. Insert a new record: 011, Manoj, Computer, 01/4/2018, 30000.
  2. Change subject as "CA" whose Date of joining is 1/4/2010.
  3. Delete all records of given table.
  4. List of those male teachers whose subject is science.

12. Give any two basic safety rules for ensuring Falls and Slips safety.

13. Give any two electrical safety rules in any organization.

14. Explain any two first aid rules.

15. What do you mean by occupational hazards?

16. List any three types of occupational hazards.

17. Explain the terms accident and emergency.

18. Enlist any four types of accidents.

19. Give any three situations of emergency that require evacuation.

20. Give any two ways to handle accidents.

21. List any three types of hazards.

22. Give a checklist for workstations to minimize the hazards

23. Explain the term 'Evacuation Policy'

24. Explain Buddy System to implement evacuation efficiently in case of emergency.

25. Explain the terms Floor Plans and Assembly /areas

26. Describe the importance of periodic evacuation drills.

27. Explain importance of a healthy lifestyle.

28. Give any four points of a healthy lifestyle

29. How does water and foam fire extinguisher work?

30. How does carbon dioxide fire extinguisher work?

31. How does wet chemical fire extinguisher work?

32. How can you prepare for emergencies?

33. Explain any three rules that companies follows in terms of fire safety.

34. Explain any five precautions at workplace.

35. Explain some of the actions that are used in the event of fire.

ANGELS' ACADEMY SR. SEC. SCHOOL
QUESTION BANK FOR PPT-1
CLASS – X (2024-25)
SUBJECT – PHYSICS

MULTIPLE CHOICE QUESTIONS:

1. When a plane mirror is rotated through a certain angle, the reflected ray turns through twice as much and the size of the image:

   (a) is doubled   (b) is halved   (c) becomes infinite   (d) remains the same

2. If an object is placed symmetrically between two plane mirrors, inclined at an angle of 72 degrees, then the total no. of images formed is:

   (a) 5   (b) 4   (c) 2   (d) infinite

3. Which statement is true for the reflection of light?

   (a) The angle of incidence and reflection are equal.

   (b) The reflected light is less bright than the incident light.

   (c) The sum of the angle of incidence and reflection is always greater than 90^0.

   (d) The beams of the incident light, after reflection, diverge at unequal angles.

4. The focal length of a plane mirror is

   (a) 0   (b) infinite   (c) 25 cm   (d) -25 cm

5. An object is placed at a distance of 40 cm in front of a concave mirror of a focal length of 20 cm.

   The image produced is:

   (a) virtual and inverted   (b) real, inverted and of the opposite size as that of the object

   (c) real and erect   (d) real, inverted and of the same size as that of the object

6. A student conducts an experiment using a convex lens. He places the object at a distance of 60 cm in front of the lens and observes that the image is formed at a distance of 30 cm behind the lens. What is the power of the lens?

   (a) 0.005 dioptre   (b) 0.05 dioptre   (c) 5 dioptre   (d) 50 dioptre

7. An image of an object produced on a screen which is about 36 cm using a convex lens. The image produced is about 3 times the size of the object. What is the size of the object?

(a) 12 cm   (b) 33 cm   (c) 39 cm   (d) 108 cm

8. A student studies that a convex lens always forms a virtual image irrespective of its position. What causes the convex mirror to always form a virtual image?

(a) Because the reflected ray never intersects
(b) Because the reflected ray converges at a single point
(c) Because the incident ray traces its path back along the principal axis
(d) Because the incident ray of a convex mirror gets absorbed in the mirror

Following questions consist of two statements – Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below:
(a) Both A and R are true and R is the correct explanation of A.
(b) Both A and R are true but R is not the correct explanation of A.
(c) A is true but R is false.
(d) A is false but R is true.

9. Assertion(A) : The centre of curvature is not a part of the mirror. It lies outside its reflecting surface.
Reason (R) : The reflecting surface of a spherical mirror forms a part of a sphere. This sphere has a centre.

10. **Assertion (A) :** A ray passing through the centre of curvature of a concave mirror after reflection, is reflected back along the same path.
Reason (R) : The incident rays fall on the mirror along the normal to the reflecting surface.

2 MARKS QUESTIONS:

1. List two properties of the images formed by convex mirrors. Draw ray diagram in support of your answer.

2. The linear magnification produced by a spherical mirror is +3. Analyse this value and state the (i) type of mirror and (ii) position of the object with respect to the pole of the mirror. Draw a ray diagram to show the formation of image in this case.

3. List four specific characteristics of the images of the objects formed by convex mirrors.

4. Draw a ray diagram to show the path of the reflected ray corresponding to an incident ray which is directed towards the principal focus of a convex mirror. Mark on it the angle of incidence and the angle of reflection.

5. List two possible ways in which a concave mirror can produce a magnified image of an object placed in front of it. State the difference if any between these two images.

6. The image of a candle flame placed at a distance of 30 cm from a mirror is formed on a screen placed in front of the mirror at a distance of 60 cm from its pole. What is the nature of the mirror? Find its focal length. If the height of the flame is 2.4 cm, find the height of its image. State whether the image formed is erect or inverted.

7. The image of an object formed by a mirror is real, inverted and is of magnification -1. If the image is at a distance of 40 cm from the mirror, where is the object placed? Where would the image be if the object is moved 20 cm towards the mirror? State reason and also draw ray diagram for the new position of the object to justify your answer.

8. If the image formed by mirror for all positions of the object placed in front of it is always virtual and diminished, state the type of the mirror. Draw a ray diagram in support of your answer. Where are such mirrors commonly used and why?

9. (a) Define the following terms in the context of spherical mirrors:
   (i) Pole   (ii) Centre of curvature   (iii) Principal axis   (iv) Principal focus

10. The refractive indices of glass and water with respect to air are 3/2 and 4/3 respectively. If speed of light in glass is 2×10^8 m/s, find the speed of light in water.

3 MARKS QUESTIONS:

1. What is the magnification of the images formed by plane mirrors and why?

2. State the two laws of reflection of light.

3. What is the magnification of the images formed by plane mirrors and why?

4. The magnification produced by a spherical mirror is -3". List four informations you obtain from this statement about the mirror/ image.

5. Name the type of mirrors used in the design of solar furnaces. Explain how high temperature is achieved by this device.

6. An object is placed at a distance of 30 cm in front of a convex mirror of focal length 15 cm. Write four characteristics of the image formed by the mirror.

7. Define power of a lens. What is its unit? One student uses a lens of focal length 50 cm and another of - 50 cm. What is the nature of the lens and its power used by each of them?

8. Write laws of refraction. Explain the same with the help of ray diagram, when a ray of light passes through a rectangular glass slab.

9. Suppose you have three concave mirrors A, B and C of focal lengths 10 cm, 15 cm and 20 cm. For each concave mirror you perform the experiment of image formation for three values of object distances of 10 cm, 20 cm and 30 cm. Giving reason answer the following:

(a) For the three object distances, identify the mirror/mirrors which will form an image of magnification -1.

(b) Out of the three mirrors identify the mirror which would be preferred to be used for shaving purposes/make-up.

(c) For the mirror B draw ray diagram for image formation for object distances 10 cm and 20 cm.

10. Why is "objects in the mirror are closer than they appear" written on the side view mirrors of the vehicles?

CASE STUDY

1. Answer the questions that follow on the basis of your understanding of the following paragraph and the related studied concepts:

Lenses are objects made of transparent materials such as glass or clear plastic that has curved surfaces. There are two main kinds of lenses - Diverging lenses and Converging lenses. Diverging lenses are thicker at their edges than in their centres and they make light rays passing through them spread out. Converging lenses are thicker in the middle than at their edges and were the earliest kind of lens made. The earliest examples of these date back two thousand years. They have been used in spectacles to help people with poor vision see better since at least the tenth century.
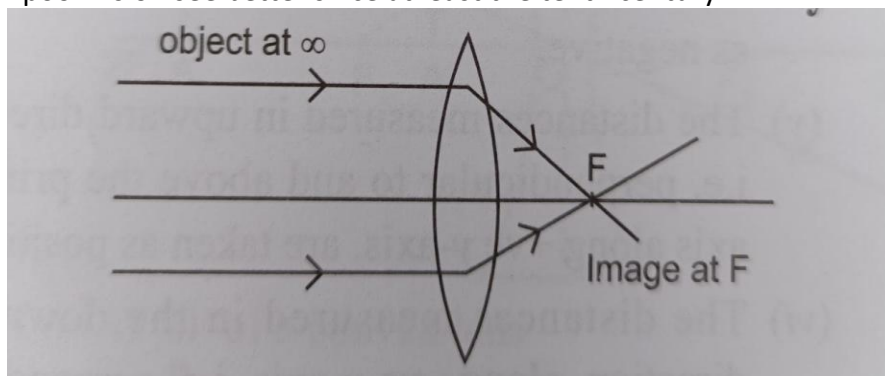
These days, as well as being used in spectacles converging lenses are used in many other devices. Magnifying glasses, microscopes and some types of telescopes use converging lenses to make small things appear much larger or to make distant objects appear much closer. Converging lenses magnify by bending the rays of light that pass through them to meet at a point. This point is called the focus. The thicker that a converging lens is in its centre, the more it magnifies and closer the focus is to the lens.

The magnifying power of a single converging lens such as used in a camera or magnifying glass is equal to the length of the enlarged image divided by the length of the original object. For example, if a 2 cm long beetle appears to be 6 cm long when viewed through a magnifying glass, the glass' magnifying power is 3 (written as "3x")' Similarly, a 10x lens would make an object look 10 times longer. It will also look 10 times wider.

(a) One cannot measure the focal length directly for a diverging lens because?

(b) A convex lens is cut horizontally. Its new focal length will?

(c) The nature of image formed by a concave lens irrespective of the position of object is?

(d) When seen through a 5X magnifying glass, a small leaf appears to have an area of 25 mm². The actual area of the leaf is?

MULTIPLE CHOICE QUESTIONS:
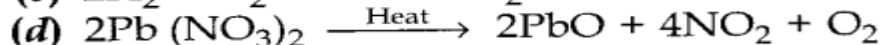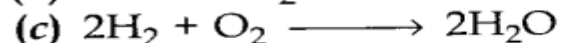
1**.** Which of the following is a displacement reaction?

(a) $MgCO_3 \longrightarrow MgO + CO_2$
(b) $2Na + 2H_2O \longrightarrow 2NaOH + H_2$
(c) $2H_2 + O_2 \longrightarrow 2H_2O$
(d) $2Pb(NO_3)_2 \xrightarrow{\text{Heat}} 2PbO + 4NO_2 + O_2$

2. Magnesium ribbon is rubbed before burning because it has a coating of

(a) basic magnesium carbonate   (b) basic magnesium oxide

(c) basic magnesium sulphide   (d) basic magnesium chloride

3. Which of the following statements about the given reaction are correct?
$3Fe\ (s) + 4H_2O\ (g) \rightarrow Fe_3O_4\ (s) + 4\ H_2\ (g)$
(i) Iron metal is getting oxidized   (ii) Water is getting reduced
(iii) Water is acting as reducing agent   (iv) Water is acting as oxidising agent
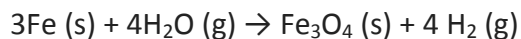
(a) (i), (zi) and (iii)   (b) (in) and (iv)   (c) (i), (ii) and (iv)   (d) (ii) and (iv)

4. Which of the following are exothermic processes?
(i) Reaction of water with quick lime   (ii) Dilution of an acid
(iii) Evaporation of water   (iv) Sublimation of camphor (crystals)

(a) (i) and (ii)   (b) (ii) and (iii)   (c) (i) and (iv)   (d) (ii) and (iv)

5. Oxidation is a process which involves
(a) addition of oxygen   (b) addition of hydrogen

(c) removal of oxygen   (d) removal of hydrogen

6. The process of reduction involves
(a) addition of oxygen   (b) addition of hydrogen

(c) removal of oxygen   (d) removal of hydrogen

7. Three beakers labelled as A, B and C each containing 25 ml of water were taken. A small amount of NaOH, anhydrous $CuSO_4$ and NaCl were added to the beakers A, B and C respectively. It was observed

that there was an increase in the temperature of the solution contained in beakers A and B, whereas in case of beaker C, the temperature of the solution falls. Which one of the following statement(s) is (are) correct?

(i) In beakers A and B, exothermic process has occurred.

(ii) In beakers A and B, endothermic process has occuBftd.

(iii) In beaker C exothermic process has occurred.

(iv) In beaker C endothermic process has occurred.

(a) (i) only   (b) (ii) only   (c) (i) and (iv)   (d) (iv), (ii) and (iii)

8. Give the ratio in which hydrogen and oxygen are present in water by volume.

(a) 1:2   (b) 1:1   (c) 2:1   (d) 1:8

9. **Assertion (A) :** Decomposition of vegetable matter into compost is an example of exothermic reactions.

Reason (R) : Exothermic reaction are those reactions in which heat is evolved.

10. **Assertion (A) :** When HCl is added to zinc granules, a chemical reaction occurs.

Reason (R) : Evolution of a gas and change in colour indicate that the chemical reaction is taking place.

2 MARKS QUESTIONS:

1. Write the balanced chemical equations for the following reactions.

(a)Sodium carbonate on reaction with hydrochloric acid in equal molar concentrations gives sodium chloride and sodium hydrogen-carbonate.

(b) Sodium hydrogencarbonate on reaction with hydrochloric acid gives sodium chloride, water and liberates carbon dioxide.

2. A solution of potassium chloride when mixed with silver nitrate solution, an insoluble white substance is formed. Write the chemical reaction involved and also mention the type of the chemical reaction.

3. Give balanced equations, wherever possible, or where this is not possible, explain the following by means of examples:

i) A reaction which gives out heat.

ii) A reaction which takes place with the help of sunlight.

iii) A reaction which is brought about by electric current

iv. A reaction with a solid and gas which produces heat.

4. In the equations given below, state giving reasons, whether *substances* have been oxidised or reduced.

(i) $PbO + CO \rightarrow Pb + CO_2$ (ii) $H_2S + Cl_2 \rightarrow 2HCl + S$

5. Write the uses of decomposition reactions.

6. What are the characteristics of chemical reactions?

7. Can rancidity retarded by storing foods away from light?

8. What are the different ways can make more informative about the chemical equation?

9. Write the balanced chemical equations for the following reactions.
(a)Sodium carbonate on reaction with hydrochloric acid in equal molar concentrations gives sodium chloride and sodium hydrogen-carbonate.
(b)Sodium hydrogencarbonate on reaction with hydrochloric acid gives sodium chloride, water and liberates carbon dioxide.

10. Why is it necessary to balance a chemical equation?

3 MARKS QUESTIONS:

1. You might have noted that when copper powder is heated in a China dish, the reddish brown surface of copper powder becomes coated with a black substance. (AI 2019)
(a) Why has this black substance formed?
(b) What is the black substance?
(c) Write the chemical equation of the reaction that takes place.

2. Lead nitrate solution is added to a test tube containing potassium iodide solution.
(a) Write the name and colour of the compound precipitated.
(b) Write the balanced chemical equation for the reaction involved.
(c) Name the type of this reaction justifying your answer.

3. Mention with reason the colour changes observe when:
(i) silver chloride is exposed to sunlight.
(ii) copper powder is strongly heated in the presence of oxygen.
(iii) a piece of zinc is dropped in copper sulphate solution.

4. Decomposition reactions require energy either in the form of heat or light or electricity for breaking down the reactants. Write one equation each for decomposition reactions where energy is supplied in the form of heat, light and electricity.

5. Take 3 g of barium hydroxide in a test tube, now add about 2 g of ammonium chloride and mix the contents with the help of a glass rod. Now touch the test tube from outside.
(i) What do you feel on touching the test tube?
(ii) State the inference about the type of reaction occurred.
(iii) Write the balanced chemical equation of the reaction involved.

6. (a) A solution of potassium chloride when mixed with silver nitrate solution, an insoluble white substance is formed. Write the chemical reaction involved and also mention the type of the chemical reaction.
(b) Ferrous sulphate when heated, decomposes with the evolution of a gas having a characteristic odour of burning sulphur. Write the chemical reaction involved and identify the type of reaction.

7. What is a reduction reaction?
Identify the substances that are oxidised and the substances that are reduced in the following reactions.
(a) $Fe_2O_3 + 2Al \rightarrow Al_2O_3 + 2Fe$ (b) $2PbO + C \rightarrow 2Pb + CO_2$
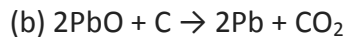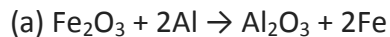
8. What happens when food materials containing fats and oils are left for a long time? List two observable changes and suggest three ways by which this phenomenon can be prevented.

9. Write the chemical equation of the reaction in which the following changes have taken place with an example of each:
(i) Change in colour   (ii) Change in temperature   (iii) Formation of precipitate

10. What is meant by skeltal type chemical equation? What does it represent? Using the equation for electrolytic decomposition of water, differentiate between a skeltal chemical equation and a balanced chemical equation.
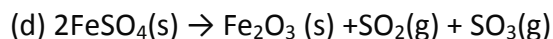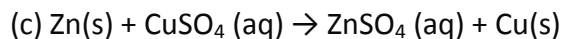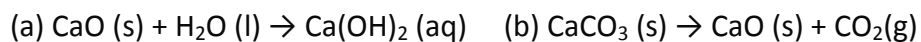
CASE STUDY

A chemical reaction is a representation of chemical change in terms of symbols and formulae of reactants and products. There are various types of chemical reactions like combination, decomposition, displacement, double displacement, oxidation, and reduction reactions. Reactions in which heat is released along with the formation of products are called exothermic chemical reactions. All combustion reactions are exothermic reactions.

(i) The chemical reaction in which a single substance breaks down into two or simpler substances upon heating is known as?

(ii) The massive force that pushes the rocket forward through space is generated due to the ?

(iii) A white salt on heating decomposes to give brown fumes and the yellow residue is left behind. The yellow residue left is of ?

(iv) Which of the following reactions represents a combination reaction?
(a) CaO (s) + H_2O (l) $\rightarrow$ $Ca(OH)_2$ (aq)   (b) $CaCO_3$ (s) $\rightarrow$ CaO (s) + CO_2(g)
(c) $Zn(s)$ + $CuSO_4$ (aq) $\rightarrow$ $ZnSO_4$ (aq) + $Cu(s)$
(d) $2FeSO_4(s)$ $\rightarrow$ Fe_2O_3 (s) +SO_2(g) + SO_3(g)

ANGELS' ACADEMY SR. SEC. SCHOOL

QUESTION BANK

CLASS – X (2024-25)

SUBJECT – BIOLOGY

M.C.Q

1-In which mode of nutrition an organism derives its food from the body of another living organism without killing it?
(a) Saprotrophic nutrition
(b) Parasitic nutrition
(c) Holozoic nutrition
(d) Autotrophic nutrition

2- The mode of nutrition found in fungi is:
(a) Parasitic nutrition
(b) Holozoic nutrition
(c) Autotrophic nutrition
(d) Saprotrophic nutrition

3-The site of photosynthesis in the cells of a leaf is
(a) chloroplast
(b) mitochondria
(c) cytoplasm
(d) protoplasm

4-Which region of the alimentary canal absorbs the digested food?
(a) Stomach
(b) Small intestine
(c) Large intestine
(d) Liver

5-What are the products obtained by anaerobic respiration in plants?
(a) Lactic acid + Energy
(b) Carbon dioxide + Water + Energy
(c) Ethanol + Carbon dioxide + Energy
(d) Pyruvate

6-Which of the following events in the mouth cavity will be affected if salivary amylase is lacking in the saliva?
(a) Starch breaking down into sugars.

(b) Proteins breaking down into amino acids.

(c) Absorption of vitamins.

(d)Fats breaking down into fatty acids and glycerol.

7- Name the pores in a leaf through which respiratory exchange of gases takes place.

(a) Lenticels

(b) Vacuoles

(c) Xylem

(d) Stomata breaking down into fatty acids and glycerol.

8-The respiratory pigment in human beings is:

(a) carotene

(b) chlorophyll

(c) hemoglobin

(d) mitochondria

Following questions consist of two statements – Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below:

(a) Both A and R are true and R is the correct explanation of A.

(b) Both A and R are true but R is not the correct explanation of A.

(c) A is true but R is false.

(d) A is false but R is true.

9- **Assertion (A)**: Pyruvate is a six-carbon molecule.

Reason (R) : It is prepared in the cytoplasm as the first step to cellular respiration.

10- **Assertion (A)** : In anaerobic respiration, one of the end product is alcohol.

Reason(R): There is an incomplete breakdown of glucose.

(2 MARKS)

1-Mention the role of acid in the stomach.

2-How does the small intestine absorb digested food?

3-What is the role of saliva in the digestion of food?

4-Mention the conditions necessary in autotrophic nutrition.

5-Define nutrition? What are the different modes of nutrition?

6-What type of respiration takes place in human muscles during vigorous exercise and why?

7-Why the walls of trachea are supported by cartilaginous rings?

8-State two vital functions of kidney.

9-Why doesn't the lungs collapse even after forceful expiration?

10-Write the functions of xylem and phloem.

(3 Marks)

1-State the role played by the following in the process of digestion :
(i) Enzyme trypsin
(ii) Enzyme lipase

2-Explain the significance of photosynthesis. Write the balanced chemical equation involved in the process.

3-Differentiate between autotrophs and heterotrophs and give one example of each.

4-Explain with the help of neat and well labelled diagrams the different steps involved in nutrition in Amoeba.

5-How is transpiration pull responsible for upward movement of water?

6-What is the role of following in human digestive system –

a) mucous

b) HCL

c) Trypsin

7-What are difference between autotrophic and heterotrophic nutrition?

8-Mention the major events during photosynthesis

9-Explain the three pathways of breakdown in living organisms.

10-Differentiate between an artery and a vein.

CASE STUDY

- Answer the questions that follow on the basis of your understanding of the following paragraph and the related studied concepts:

Carbon and energy requirements of the autotrophic organism are fulfilled by photosynthesis. It is the process by which autotrophs take in substances from the outside and convert them into stored forms of energy. This material is taken in the form of carbon

dioxide and water which is converted into carbohydrates in the presence of sunlight and chlorophyll. Carbohydrates are utilized for providing energy to the plant.

i)   Write a chemical reaction which occur during photosynthesis?
ii)   In which form of carbohydrates does the plant stored in them?
iii) What is stomata?
iv)   What are the functions of stomata?
v)   What is Chloroplast?