ATOMIC ENERGY CENTRAL SCHOOL NO.4 Rawatbhata

CLASS 10 - ENGLISH
ENGLISH

Time Allowed: 30 minutes **Maximum Marks: 40**

1. Whom did Anne Frank addresses as the most unpredictable creatures of the Earth? **[1]**

   a) Friends   b) Students

   c) Teachers   d) Family

2. Who gifted diary to Anne Frank? **[1]**

   a) Her Mother   b) Her Father

   c) Her Sister   d) Her Grandmother

3. According to Anne Frank, Whom did she blame for her talking habit? **[1]**

   a) Her Mother   b) Her Grandmother

   c) Her Father   d) Her Sister

4. Who was the head mistress of Anne's Montessori Nursery School? **[1]**

   a) Mrs. Pumphery   b) Mrs. Keesing

   c) Mrs. Kuperus   d) Mrs. Duckling

5. How did Anne Frank treat her Diary? **[1]**

   a) As her Family Member   b) As her lover

   c) As her Sister   d) As her Friend

6. How many teachers did Anne Frank have in her class? **[1]**

   a) Seven   b) Six

   c) Nine   d) Eight

7. On which birthday, Anne got a gift of her life that was a Diary? **[1]**

   a) On her thirteenth birthday   b) On her fourteenth birthday

   c) On her fifteenth birthday   d) On her eleventh birthday

8. Which Incident in 1942 left a painful lasting effect on Anne's life? **[1]**

   a) Death of her Grandmother   b) Death of her Mother

   c) Punishment given by Mr. Keesing   d) Getting a diary on her birthday

9. What was the age of Anne's Father when he got married with her mother? **[1]**

   a) Thirty Six   b) Thirty five

   c) Thirty Seven   d) Thirty four

10. How much age difference did Anne's Father and her Mother had in themselves? **[1]**

   a) Thirteen Years   b) Ten Years

c) Eleven Years   d) Twelve Years

11. What did Miss Mason receive from the principal's office?   **[1]**

    a) A trophy   b) A letter from Wanda's father

    c) Medal for Wanda   d) Report cards

12. How did Maddie feel after Miss Mason read the letter?   **[1]**

    a) Restless   b) Scared

    c) Angry   d) Indifferent

13. What did Miss Mason ask the children to do after reading the letter?   **[1]**

    a) To ponder about what they did   b) Stand outside the classroom as a
       unknowingly   punishment

    c) To forget about the letter and   d) Write an apology letter to Wanda
       concentrate on studies

14. Why was Miss Mason glad to receive a letter from Wanda?   **[1]**

    a) She could now send her the medal.   b) She wanted to go and meet her.

    c) She was missing Wanda a lot.   d) She wanted to give her some books.

15. How did Wanda's house appear?   **[1]**

    a) Shabby but clean   b) Like a splendid castle

    c) An apartment   d) Haunted

16. Why did Maddie feel that she was a coward?   **[1]**

    a) She could not protect Wanda from   b) She wouldn't dare to go out alone.
       all the bullying and stand there
       silently.

    c) She did not participate in the   d) She stole Wanda's assignment and
       drawing contest for the fear of   did not admit of doing It.
       losing.

17. Who could put herself in Wanda's shoes?   **[1]**

    a) Maddie   b) Peggy

    c) No one   d) Miss Mason

18. How did Miss Mason feel after reading the letter?   **[1]**

    a) Sad   b) Happy

    c) Angry   d) Annoyed

19. To whom did Wanda write a letter?   **[1]**

    a) Miss Mason   b) Peggy

    c) The Principal   d) Maddie

20. What was Wanda's response to Maddie and Peggy's letter?   **[1]**

    a) She replied them rudely.   b) By politely inquiring about their well

being and gifting them her drawing.

c) She conveyed them that she was very angry with them.

d) She chose not to respond.

21. Why was Maddie astonished to see the drawing that Wanda gifted her? **[1]**

    a) It was torn   b) It was her own face

    c) It was beautiful   d) It was Wanda's face

22. What did Miss Mason show the class on the last day of the school before the holidays? **[1]**

    a) Their Christmas gifts   b) Wanda's letter

    c) Their Assignments   d) Wanda's dresses

23. How does the boy react to the loss of his ball in "The Ball Poem". **[1]**

    a) The boy cries in despair.   b) The boy asks people for help.

    c) The boy stands rigid with grief.   d) The boy runs after the ball.

24. People will take Balls, balls will be lost always, little boy. Here, balls is a metaphor for_____. **[1]**

    a) All the toys the boy loves.   b) All the persons and things that we love.

    c) All the material things one possesses.   d) The little boy's lost ball.

25. I would not intrude on him; A dime, another ball is worthless. What does the poet mean by dime? **[1]**

    a) A shilling.   b) A five cent coin.

    c) A penny   d) A ten cent coin

26. Who is the poet of **The Ball Poem**? **[1]**

    a) John Berryman   b) William Wordsworth

    c) Robert Frost   d) Leslie Norris

27. What happened to the ball in **The Ball Poem**. **[1]**

    a) The narrator took the ball.   b) The ball was stolen.

    c) The ball fell into the water.   d) The ball fell into the well.

28. The poet says that 'money is external' as it cannot buy back _____. **[1]**

    a) Both are correct.   b) the precious memories associated with the ball.

    c) Both are incorrect.   d) the lost ball.

29. By experiencing the loss of the ball, the little boy learns_____. **[1]**

    a) not to lose his ball.   b) to cope with loss.

    c) none of the above.   d) the meaning of grief.

30. What does the phrase **how to stand up** mean in the poem, **The Ball**? **[1]**

    a) To face loss and cope with it bravely.   b) To be inconsolable in the face of loss.

c) To turn away from loss.	d) How to stand on one's two feet.

31. Where did Griffin sleep in the London store? **[1]**

    a) On a couch kept inside   b) On the floor

    c) On the carpet   d) On a pile of quilts

32. Who stole money from the Clergyman's desk in the village of Iping? **[1]**

    a) Mr Jaffers   b) Mr Griffin

    c) Mrs Hall   d) Mr Hall

33. Where did the boys spot the footprints without feet? **[1]**

    a) On the steps of a house in London   b) In their school

    c) In the garden   d) In a museum

34. Why did Griffin enter the theatrical company? **[1]**

    a) In search of a job there.   b) To find clothes and material for hiding his invisibility.

    c) To learn acting skills.   d) To meet his friend.

35. How did Griffin travel to the village of Iping? **[1]**

    a) By his car   b) Took a flight

    c) By train   d) On foot

36. How did Griffin manage to become invisible? **[1]**

    a) Due to some rare disease   b) By swallowing certain rare drugs

    c) By magic   d) By practising witchcraft

37. Why did Griffin set fire to his rented house? **[1]**

    a) The house was haunted   b) To destroy his research

    c) To avenge his landlord   d) It happened accidentally

38. Who was Griffin? **[1]**

    a) An eccentric scientist   b) A smart detective

    c) A dutiful cop   d) An artist

39. Who was Mr Jaffers? **[1]**

    a) A dutiful cop   b) A clergyman

    c) The Landlord of the house which was set on fire by Griffin   d) Owner of the inn at Iping

40. What kind of a person was Griffin? **[1]**

    a) Lawless   b) All of these

    c) Brilliant   d) Eccentric

CLASS 10 - HINDI A
HINDI

Time Allowed: 30 minutes   **Maximum Marks: 40**

1. सरल वाक्य में एक कर्ता और एक _____ का होना आवश्यक है।   **[1]**

   a) सर्वनाम   b) क्रिया

   c) विशेषण   d) संज्ञा

2. जो अच्छा लेखक होता है वह अपने पाठकों की रूचि को समझता है। - रचना के आधार पर उचित वाक्य भेद लिखिए।   **[1]**

   a) मिश्र वाक्य   b) सरल वाक्य

   c) संयुक्त वाक्य   d) संज्ञा उपवाक्य

3. रचना की दृष्टि से निम्नलिखित वाक्य किस प्रकार का है -' जिनकी आय अधिक है, उन्हें दूसरों की सहायता करनी चाहिए।'   **[1]**

   a) सरल वाक्य   b) प्रधान उपवाक्य

   c) मिश्र वाक्य   d) संयुक्त वाक्य

4. रचना की दृष्टि से निम्नलिखित वाक्य किस प्रकार का है - वह बाज़ार से फल, सब्जी और राशन का सामान लाया।   **[1]**

   a) मिश्र वाक्य   b) संयुक्त वाक्य

   c) आश्रित वाक्य   d) सरल वाक्य

5. उपयुक्त वाक्य भेद चुनिए : उसने कहा <u>कि वह दिल्ली जा रहा है।</u>   **[1]**

   a) विशेषण उपवाक्य   b) क्रियाविशेषण उपवाक्य

   c) सरल वाक्य   d) संज्ञा उपवाक्य

6. महात्मा गांधी ने कहा था <u>कि सत्य की विजय होती है।</u> - रेखांकित उपवाक्य का भेद बताइए।   **[1]**

   a) क्रिया उपवाक्य   b) संज्ञा उपवाक्य

   c) विशेषण उपवाक्य   d) क्रियाविशेषण उपवाक्य

7. मैंने एक व्यक्ति देखा। वह व्यक्ति बहुत कमज़ोर था। - दो सरल वाक्यों को एक सरल वाक्य में परिवर्तित कीजिए।   **[1]**

   a) जो व्यक्ति मैंने देखा वो बहुत कमज़ोर था।   b) मैंने एक बहुत कमज़ोर व्यक्ति को देखा।

   c) वह व्यक्ति जो बहुत कमज़ोर था उसे मैंने देखा।   d) मैंने जिस व्यक्ति को देखा वह बहुत कमज़ोर था।

8. उसने कहा। वह जयपुर जा रहा है। - वाक्य का उचित मिश्र वाक्य होगा -   **[1]**

   a) उसने कहा कि वह कल जयपुर जाएगा।   b) उसने अपने जयपुर जाने के के बारे में कहा।

   c) वह कल जयपुर जाएगा उसने ऐसा कहा।   d) उसने कहा था वह कल जयपुर जाएगा।

9. मेरी जो गाय काली है वह खेत में चर रही है। - वाक्य का उचित संयुक्त वाक्य होगा -   **[1]**

   a) मेरी काली गाय खेत में चर रही है।   b) जो गाय खेत में चल रही है वह काली है।

   c) मेरी गाय काली है और खेत में चर रही है।   d) खेत में चरने वाली गाय काली है।

10. रचना की दृष्टि से वाक्य के कितने भेद होते हैं ?   **[1]**

| a) दो | b) तीन |
| c) चार | d) एक |

11. निम्नलिखित वाक्यों को संयुक्त वाक्य में परिवर्तित कीजिए - **[1]**
   ० रास्ते में कोहरा था।
   ० कोहरे के कारण मैं जा न सका।

| a) मुझे नहीं जाना था इसलिए रास्ते में कोहरा था। | b) चूँकि रास्ते में कोहरा था इसलिए मैं जा न सका। |
| c) रास्ते में कोहरा होने के कारण मैं जा न सका। | d) रास्ते में कोहरा था इसलिए मैं जा न सका। |

12. यहाँ पहले जंगल था, परन्तु अब घनी बस्ती है। वाक्य में रचना के आधार पर उचित वाक्य भेद बताइए। **[1]**

| a) सरल वाक्य | b) संयुक्त वाक्य |
| c) मिश्र वाक्य | d) प्रधान वाक्य |

13. वह परिश्रम करता है लेकिन उसे उसका लाभ नहीं मिलता। - वाक्य के लिए उचित सरल वाक्य होगा - **[1]**

| a) वह परिश्रम करता है पर उसे उसका लाभ नहीं मिलता। | b) उसे परिश्रम करना था पर उसे लाभ नहीं मिलता। |
| c) वह परिश्रम करता है इसलिए उसे लाभ नहीं मिलता। | d) उसको अपने परिश्रम का लाभ नहीं मिलता। |

14. आपकी वह किताब कहाँ है, जो आपने वहाँ रखी थी। - रेखांकित उपवाक्य का भेद लिखिए। **[1]**

| a) विशेषण उपवाक्य | b) क्रिया विशेषण उपवाक्य |
| c) संज्ञा उपवाक्य | d) प्रधान उपवाक्य |

15. निम्नलिखित वाक्य का मिश्र वाक्य होगा - **[1]**
   चौकीदार आया। वह आवाज़ लगाकर चला गया।

| a) चौकीदार आया तो था परन्तु वह आवाज़ लगाकर चला गया। | b) चौकीदार आया और आवाज़ लगाकर चला गया। |
| c) आवाज़ लगाते ही चौकीदार आ गया। | d) चौकीदार आकर आवाज़ लगाकर चला गया। |

16. प्रेमचन्द ने गोदान लिखा - वाक्य के लिए उचित कर्मवाच्य चुनिए। **[1]**

| a) प्रेमचंद गोदान लिख रहे थे। | b) प्रेमचंद गोदान लिख चुके थे। |
| c) प्रेमचंद ने गोदान लिखा था। | d) प्रेमचंद के द्वारा गोदान लिखा गया। |

17. कर्तृवाच्य में किसकी प्रधानता होती है ? **[1]**

| a) कर्ता की | b) कर्म की |
| c) भाव की | d) क्रिया की |

18. प्रायः असमर्थता या विवशता प्रकट करने के लिए 'नहीं' के साथ _____ का प्रयोग होता है। **[1]**

| a) कर्तृवाच्य | b) कर्मवाच्य |
| c) विशेषण | d) भाववाच्य |

19. बच्चे खेलेंगे - वाक्य के लिए उचित भाववाच्य होगा - **[1]**

| a) बच्चे खेल चुके। | b) बच्चे खेल रहे थे। |
| c) बच्चे खेले थे। | d) बच्चों द्वारा खेला जाएगा। |

20. वाच्य के कितने प्रकार हैं ? **[1]**

	a) तीन	b) चार
	c) एक	d) दो

21. पक्षियों से आकाश में उड़ा जाता है - वाक्य में प्रयुक्त वाच्य बताइए। **[1]**

    a) संज्ञावाच्य   b) कर्मवाच्य

    c) भाववाच्य   d) कर्तृवाच्य

22. आपने सुंदर लेख लिखा - किस वाच्य का उदाहरण है ? **[1]**

    a) कर्मवाच्य का   b) कर्तृवाच्य का

    c) क्रियावाच्य का   d) भाववाच्य का

23. निम्नलिखित वाक्य का वाच्य बताइए - **[1]**
गाँधी जी ने विश्व को सत्य और अहिंसा का संदेश दिया।

    a) कर्तृवाच्य   b) भाववाच्य

    c) कर्मवाच्य   d) संज्ञावाच्य

24. निम्नलिखित में से कर्मवाच्य का उचित उदाहरण होगा - **[1]**

    a) मैं बैठ नहीं सकता।   b) पक्षी उड़ रहे हैं।

    c) राम से नहीं पढ़ा जाता।   d) बच्चे से गिलास टूट गया।

25. बालक पत्र लिखता है - वाक्य का उचित कर्मवाच्य होगा - **[1]**

    a) बालक के द्वारा पत्र लिखा जाता है।   b) बालक ने पत्र लिखा था।

    c) बालक पत्र लिखता था।   d) बालक ने पत्र लिखा।

26. निम्नलिखित में से भाववाच्य का उचित उदाहरण होगा - **[1]**

    a) मुझसे चला नहीं जाता।   b) हम हँसते हैं।

    c) मुझसे गलती हो गई।   d) बच्चे मैदान में खेल रहे हैं।

27. कर्म की प्रधानता वाला वाच्य होता है - **[1]**

    a) भाववाच्य   b) ये सभी

    c) कर्तृवाच्य   d) कर्मवाच्य

28. नेताजी द्वारा उद्घाटन किया गया - वाक्य किस वाच्य का उदाहरण है ? **[1]**

    a) कर्मवाच्य का   b) भाववाच्य का

    c) क्रिया का   d) कर्तृवाच्य का

29. मजदूरों द्वारा नहर खोदी गई - वाक्य के लिए उचित कर्तृवाच्य होगा - **[1]**

    a) मजदूरों से नहर खोदी जा रही थी।   b) मजदूरों से नहर खोदी गई थी।

    c) मजदूरों से नहर खोदी गई।   d) मजदूरों ने नहर खोदी।

30. बच्चा रोता है - वाक्य के लिए उचित भाववाच्य होगा- **[1]**

    a) बच्चे जागेंगे।   b) बच्चे से रोया जाता है।

    c) अब तो बच्चा रोया होगा।   d) बच्चा रोया होगा।

31. रीतिवाचक क्रियाविशेषण का उचित उदाहरण होगा - **[1]**

    a) काला घोड़ा तेज़ भागता है।   b) वह बाज़ार जा रहा है।

c) काला घोड़ा <u>तेज़</u> भागता है।   d) <u>काला</u> घोड़ा तेज़ भागता है।

32. <u>रचना</u> काम कर रही है - रेखांकित पद के लिए उचित परिचय होगा - **[1]**

     a) समूहवाचक संज्ञा   b) द्रव्यवाचक संज्ञा

     c) जातिवाचक संज्ञा   d) व्यक्तिवाचक संज्ञा

33. <u>शाबाश</u> ! तुमने बहुत अच्छा काम किया - रेखांकित पद के लिए उचित पद परिचय चुनिए। **[1]**

     a) विस्मयादिबोधक   b) संबंधबोधक

     c) समुच्चयबोधक   d) क्रियाविशेषण

34. गीता <u>सातवीं</u> कक्षा में पढ़ रही है- रेखांकित पद का उचित पद परिचय कौन सा होगा? **[1]**

     a) प्रश्नवाचक विशेषण   b) संख्यावाचक विशेषण

     c) परिमाणवाचक विशेषण   d) गुणवाचक विशेषण

35. वाक्य में प्रयुक्त पदों का व्याकरणिक परिचय देना _____ कहलाता है। **[1]**

     a) अर्थ   b) शब्द

     c) भाव   d) पद परिचय

36. राधा <u>मधुर</u> गीत गाती है। रेखांकित पद का उचित पद परिचय होगा - **[1]**

     a) क्रिया   b) विशेषण

     c) संज्ञा   d) काल

37. मैं यह <u>दुःख</u> नहीं सह सकता। रेखांकित पद के लिए उचित परिचय होगा - **[1]**

     a) व्यक्तिवाचक संज्ञा   b) समूहवाचक संज्ञा

     c) द्रव्यवाचक संज्ञा   d) भाववाचक संज्ञा

38. वे विद्यालय गए <u>परन्तु</u> वहाँ अवकाश था - रेखांकित पद के लिए उचित परिचय चुनिए। **[1]**

     a) संबंधबोधक   b) समुच्चयबोधक

     c) क्रियाविशेषण   d) विस्मयादिबोधक

39. सार्वनामिक विशेषण का उचित पद होगा - **[1]**

     a) वे लोग <u>दिल्ली</u> जाएँगे।   b) वे लोग दिल्ली <u>जाएँगे।</u>

     c) वे <u>लोग</u> दिल्ली जाएँगे।   d) <u>वे</u> लोग दिल्ली जाएँगे।

40. उपवन में सुंदर फूल <u>खिले</u> हैं - रेखांकित पद के लिए उचित परिचय होगा - **[1]**

     a) सकर्मक क्रिया   b) द्विकर्मक क्रिया

     c) नामधातु क्रिया   d) अकर्मक क्रिया

ATOMIC ENERGY CENTRAL SCHOOL NO.4 RAWATBHATA

MCQ Examination August (2020-2021)

CLASS 10 - MATHEMATICS
Mathematics

Time Allowed: 40 minutes **Maximum Marks: 40**

General Instructions:

Do not switch over the screen.

Do not refresh the page.

1. If the coordinates of one end of a diameter of a circle are (2, 3) and the coordinates of its centre are (-2, 5), then the coordinates of the other end of the diameter are **[1]**

    a) (0, 8)

    b) (0, 4)

    c) (6, – 7)

    d) (– 6, 7)

2. The distance of the point P (2, 3) from the x-axis is **[1]**

    a) 3

    b) 1

    c) 2

    d) 5

3. The point which divides the line segment joining the points (7, -6) and (3, 4) in ratio 1 : 2 internally lies in the **[1]**

    a) III quadrant

    b) II quadrant

    c) I quadrant

    d) IV quadrant

4. If the distance between the points (4, p) and (1,0) is 5, then the value of p is **[1]**

    a) 0

    b) 4 only

    c) -4 only

    d) ± 4

5. If A (2, 2), B (-4, - 4) and C (5, -8) are the vertices of a triangle, then the length of the median through vertex C is **[1]**

    a) $\sqrt{113}$

    b) $\sqrt{65}$

    c) $\sqrt{85}$

    d) $\sqrt{117}$

6. The perimeter of a triangle with vertices (0, 4), (0, 0) and (3, 0) is **[1]**

    a) 15 units

    b) 10 units

    c) 9 units

    d) 12 units

7. If R(5, 6) is the midpoint of the line segment AB joining the points A(6, 5) and B(4, y) they y equals **[1]**

    a) 7

    b) 12

    c) 5

    d) 6

8. A line segment is of length 10 units. If the coordinates of its one end are (2, - 3) and the **[1]**

abscissa of the other end is 10, then its ordinate is

   a) -3, 9   b) 9, -6

   c) 9, 6   d) 3, -9

9.   In the fourth quadrant,   **[1]**

   a) x is +ve, y is -ve   b) x is -ve, y is -ve

   c) x is +ve, y is +ve   d) x is -ve, y is +ve

10. The coordinates of the point P dividing the line segment joining the points A (1, 3) and B(4, 6)   **[1]** in the ratio 2: 1 are

   a) (2, 4)   b) (3, 5)

   c) (4, 2)   d) (5, 3)

11. If the midpoint of the line segment joining the points (a, b - 2) and (-2, 4) is (2, -3), then the   **[1]** values of a and b are

   a) 6, 8   b) 6, -8

   c) 4, -5   d) -6, 8

12. The point P which divides the line segment joining the points A(2, -5) and B(5, 2) in the ratio 2 : **[1]** 3 lies in the quadrant.

   a) III   b) I

   c) II   d) IV

13. The abscissa of any point on the y – axis is   **[1]**

   a) 0   b) 1

   c) y   d) – 1

14. The distance of a point from the x-axis is called   **[1]**

   a) None of these   b) origin

   c) abscissa   d) ordinate

15. The centroid of a triangle divides the median in the ratio   **[1]**

   a) 2 : 1   b) 1 : 2

   c) 1 : 3   d) 3 : 1

16. A circle drawn with origin as the centre passes through $(\frac{13}{2}, 0)$. The point which does not lie in **[1]** the interior of the circle is

   a) $\frac{-3}{4}, 1$ b) $2, \frac{7}{3}$

   c) $5, \frac{-1}{2}$ d) $\left(-6, \frac{5}{2}\right)$

17. Radius of circumcircle of a triangle ABC is $5\sqrt{10}$ units. If point P is equidistant from A (1, 3), **[1]** B(-3, 5) and C(5, -1) then AP =

   a) $5\sqrt{10}$ units   b) 25 units

   c) $5\sqrt{5}$ units   d) 5 units

18. The distance between the points ($\cos\theta$, $\sin\theta$) and ($\sin\theta$, - $\cos\theta$) is **[1]**

    a) $\sqrt{3}$ b) $\sqrt{2}$

    c) 2   d) 1

19. ABCD is a rectangle whose three vertices are B (4,0), C (4,3) and D (0,3). The length of one of its **[1]** diagonals is

    a) 5   b) 3

    c) 4   d) 25

20. The point where the perpendicular bisector of the line segment joining the points A(2, 5) and **[1]** B(4, 7) cuts is:

    a) (3, 6)   b) (0, 0)

    c) (2, 5)   d) (6, 3)

21. The value of $\sin^2 30^0 \cos^2 45^0 + 4\tan^2 30^0 + \frac{1}{2}\sin^2 90^0 + \frac{1}{8}\cot^2 60^0$ = ? **[1]**

    a) $\frac{3}{8}$ b) $\frac{5}{8}$

    c) 6   d) 2

22. Given that $\sin\alpha = \frac{1}{\sqrt{2}}$ and $\cos\beta = \frac{1}{\sqrt{2}}$, then the value of $(\alpha + \beta)$ is **[1]**

    a) $90°$ b) $45°$

    c) $60°$ d) $30°$

23. If x cos A = 1 and tan A = y, then the value of $x^2 - y^2$ is **[1]**

    a) -1   b) 0

    c) 1   d) 2

24. $\sqrt{\frac{1+\sin\theta}{1-\sin\theta}}$ is equal to **[1]**

    a) $\tan\theta - \sec\theta$ b) $-\sec\theta - \tan\theta$

    c) $\sec\theta + \tan\theta$ d) $\sec\theta$ - $\tan\theta$

25. $\cos^2 30° \cos^2 45° + 4\sec^2 60° + \frac{1}{2}\cos^2 90° - 2\tan^2 60°$ = ? **[1]**

    a) $\frac{75}{8}$ b) $\frac{73}{8}$

    c) $\frac{83}{8}$ d) $\frac{81}{8}$

26. $\frac{2\tan 30°}{1+\tan^2 30°} =$ **[1]**

    a) $\cos 60°$ b) None of these

    c) $\tan 60°$ d) $\sin 60°$

27. If $\sin\alpha = \frac{1}{\sqrt{2}}$ and $\tan\beta$ = 1, then the value of $\cos(\alpha + \beta)$ is **[1]**

    a) 3   b) 1

    c) 2   d) 0

28. If $\sqrt{3}\tan 2\theta - 3 = 0$ then θ = ? **[1]**

    a)   b)

	30^0		60^0

c) 15^0 d) 45^0

29. If tan θ = $\sqrt{3}$, then sec θ = **[1]**

     a) $\sqrt{\frac{3}{2}}$ b) 2

     c) $\frac{2}{\sqrt{3}}$ d) $\frac{1}{\sqrt{3}}$

30. If $\cos \theta = \frac{4}{5}$ then tan θ = ? **[1]**

     a) $\frac{3}{4}$ b) $\frac{5}{3}$

     c) $\frac{4}{3}$ d) $\frac{3}{5}$

31. If x = a cos θ and y = b sin θ, then $b^2x^2 + a^2y^2$ = **[1]**

     a) $a^2 + b^2$ b) ab

     c) a^4b^4 d) a^2b^2

32. The value of $\frac{\tan 45°}{\cos ec30°} + \frac{\sec 60°}{\cot 45°} - \frac{5\sin 90°}{2\cos 0°}$ is **[1]**

     a) 0   b) 2

     c) 10   d) 1

33. If $\tan \theta = \frac{3}{4}$, then $\cos^2 \theta - \sin^2 \theta$ = **[1]**

     a) $\frac{7}{25}$ b) $\frac{-7}{25}$

     c) 1   d) $\frac{4}{25}$

34. $\sqrt{(1 - \cos^2\theta)\sec^2\theta}$ = **[1]**

     a) $\tan\theta$ b) $\cot\theta$

     c) $\sin\theta$ d) $\cos\theta$

35. Choose the correct option and justify your choice: $\frac{2\tan 30^0}{1-\tan^2 30^0}$ **[1]**

     a) $\cos60^0$ b) $\sin30^0$

     c) $\sin60^0$ d) $\tan60^0$

36. $\frac{1-\tan^2 45°}{1+\tan^2 45°} =$ **[1]**

     a) $sin45°$ b) 0

     c) $cos45°$ d) $tan45°$

37. In the given figure, if AD = 4 cm BD = 3 and CB = 12 cm, then $\cot\theta$ is **[1]**
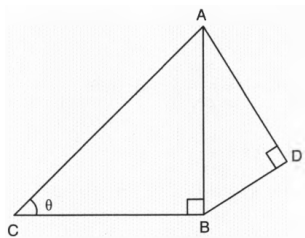
     a) $\frac{13}{12}$ b) $\frac{12}{5}$

c) $\frac{12}{13}$ d) $\frac{5}{12}$

38. If $\cos \theta = \frac{2}{3}$, then $2 \sec^2 \theta + 2 \tan^2 \theta - 7$ is equal to **[1]**

     a) 1   b) 4

     c) 0   d) 3

39. $\sin 2A = 2 \sin A$ is true when A = **[1]**

     a) $60°$ b) $30°$

     c) $0°$ d) $45°$

40. Find the value of $\sin^2 30° + 4\cot^2 45° - \sec^2 60°$ **[1]**

     a) 0   b) 1

     c) $\frac{1}{4}$ d) 4

ATOMIC ENERGY CENTRAL SCHOOL NO.4 Rawatbhata
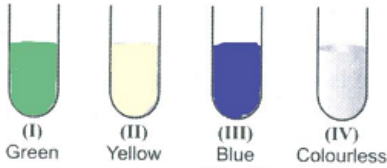
MCQ Examination September (2020-2021)

CLASS 10 - SCIENCE

Online MCQ Test -2(2020-21)

Time Allowed: 30 minutes   **Maximum Marks: 40**

1. Identify the balanced chemical equation.   **[1]**

    a) $BaCl_2 + 2Al_2(SO_4)_3 \rightarrow 2AlCl_3 +$ b) $3BaCl_2 + 2Al_2(SO_4)_3 \rightarrow 2AlCl_3 +$
       $3BaSO_4$ $3BaSO_4$

    c) $3BaCl_2 + Al_2(SO_4)_3 \rightarrow 2AlCl_3 +$ d) $BaCl_2 + Al_2(SO_4)_3 \rightarrow AlCl_3 + BaSO_4$
       $3BaSO_4$

2. Solid calcium oxide reacts vigorously with water to form calcium hydroxide accompanied by   **[1]**
    liberation of heat. This process is called slaking of lime. Calcium hydroxide dissolves in water
    to form its solution called lime water. Which among the following is (are) true about slaking of
    lime and the solution formed?

    i. It is an endothermic reaction

    ii. It is an exothermic reaction

    iii. The pH of the resulting solution will be more than seven

    iv. The pH of the resulting solution will be less than seven

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

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

3. $Fe_2O_3 + 2Al \rightarrow Al_2O_3 + 2Fe$ **[1]**
    The above reaction is an example of a

    a) displacement reaction   b) double displacement reaction

    c) combination reaction   d) decomposition reaction

4. Four test tubes containing solutions (I), (II), (III) and (IV) are shown below along with their   **[1]**
    colours. Zinc sulphate is contained in

    a) II   b) IV

    c) I   d) III

5. The name given to the expression of a reaction in terms of formulae of reactants and products   **[1]**
    is

    a) Chemical reaction   b) Redox reaction

    c) Chemical equation   d) Chemical composition

6. The pale green colour of the solution after half an hour when iron nails are dipped in copper **[1]**
sulphate solution is due to the formation of

   a) FeS   b) FeS_2

   c) $FeSO_3$ d) $FeSO_4$

7. Which one of the following processes involve chemical reactions? **[1]**

   a) Keeping petrol in a china dish in the   b) Storing of oxygen gas under
      open.   pressure in a gas cylinder.

   c) Liquefaction of air.   d) Heating copper wire in presence of
                                                air at high temperature

8. What happens when silver chloride is placed in sunlight? **[1]**

   a) Silver chloride turns black   b) Silver chloride turns grey

   c) Silver chloride turns blue   d) Silver chloride show no change

9. Which gases are given out when Lead nitrate is heated? **[1]**

   a) NO_2, O_2 b) N_2O_4, O_2

   c) PbO, O_2 d) NO, O_3

10. The gas formed on heating ferrous sulphate is colourless, has the smell of burning sulphur, **[1]**
turns lime water milky and turns acidified potassium dichromate green is

   a) CO_2 b) H_2S

   c) SO_2 d) NO_2

11. The colour of the solid product formed on heating ferrous sulphate is **[1]**

   a) Reddish-brown   b) Green

   c) Black   d) Colourless

12. Identify a non-redox reaction: **[1]**

   a) Decomposition   b) Combination

   c) Double displacement   d) Displacement

13. A condom is a method of control that falls under the following category: **[1]**

   a) Hormonal Method   b) Mechanical method

   c) Chemical Method   d) Surgical Method

14. Match the following with correct response. **[1]**

Column A	Column B
(i) Ovary	(a) Tying or cutting the fallopian tubes
(ii) Vasectomy	(b) Form fruits and ovules from seeds
(iii) Tubectomy	(c) Individual having both the sexes
(iv) Hermaphrodite	(d) Tying or cutting the vas deferens

a) (i) - (a), (ii) - (c), (iii) - (b), (iv) - (d)   b) (i) - (b), (ii) - (d), (iii) - (a), (iv) - (c)

c) (i) - (c), (ii) - (b), (iii) - (d), (iv) - (a)   d) (i) - (d), (ii) - (a), (iii) - (c), (iv) - (b)

15. The correct sequence of organs in the male reproductive system for transport of sperms is **[1]**

    a) testis → urethra → ureter   b) testis → ureter → urethra

    c) testis → ureter → vasdeferens   d) testis → vasdeferens → urethra

16. State which of the following statement is correct or wrong: **[1]**
State which of the following statement is correct or wrong:
Statement A: Estrogen is responsible for bringing changes in appearance seen in boys at the time of puberty.
Statement B: Plasmodium divides into many daughter cells by regeneration.

    a) Both are true   b) A is true and B is false

    c) B is true and A is false   d) Both are false

17. A group of organisms that can interbreed to produce fertile offspring is called **[1]**

    a) order   b) genus

    c) species   d) family

18. When an organism breaks into a number of parts and each part develop into an individual, it is called: **[1]**

    a) Regeneration   b) Budding

    c) Binary fission   d) Spore formation

19. The correct sequence of reproductive stages seen in flowering plants is **[1]**

    a) gametes, zygote, embryo, seedling   b) gametes, embryo, zygote, seedling

    c) zygote, gametes, embryo, seedling   d) seedling, embryo, zygote, gametes

20. In vegetative reproduction, the new individuals are genetically: **[1]**

    a) Better than the original   b) Dissimilar

    c) Similar   d) Abnormal

21. Which part of the flower forms the fruit? **[1]**

    a) Only carpel   b) Whole flower

    c) Only stamens and carpel   d) Only ovary

22. Syphilis is caused by **[1]**

    a) Mosquito   b) Virus

    c) Parasite   d) Bacteria

23. Where does the embryo develop in a human female? **[1]**

    a) Seminal vesicles   b) Fallopian tube

    c) Vagina   d) Uterus

24. In Amoeba, binary fission takes place by the following steps. The correct sequence is: **[1]**

 A. The cellular constriction increases and divides the whole body into equal halves and form two daughter Amoeba.

B. A constriction appears in the cell membrane and nuclear membrane.

C. Each daughter Amoeba contains a nucleus surrounded by cytoplasm and cell membrane.

D. Nuclear constriction increases and divides the nucleus into two daughter nuclei.

a) B, D, A, C

b) D, A, B, C

c) C, D, A, B

d) A, B, C, D

25. In Figure, the parts A, B, and C are sequentially **[1]**
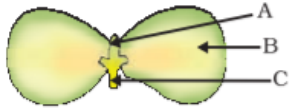
a) cotyledon, plumule and radicle

b) plumule, radicle and cotyledon

c) radicle, cotyledon and plumule

d) plumule, cotyledon and radicle

26. Which of the following involves electro magnetic induction? **[1]**

a) A magnetic field exerts a force on a current- carrying wire

b) An electric current produces a magnetic field.

c) A rod is charged with electricity.

d) The relative motion between a magnet and a coil produces an electric current.

27. What will happen when a magnet is taken towards a circular coil? **[1]**

a) Induced current will start flowing

b) No effect on the circular coil.

c) No effect of magnetic field.

d) No current will flow in the circuit.

28. The magnetic field lines inside a long current-carrying solenoid are nearly _____. **[1]**

a) Straight

b) Elliptical

c) Parabolic

d) Circular

29. A coil of copper wire is connected to a galvanometer. What would happen if a bar magnet is pushed into the coil with its north pole entering first? **[1]**

a) The needle of the galvanometer shows a momentary defection upward.

b) The needle of the galvanometer shows a momentary deflection towards left.

c) The needle of the galvanometer shows no deflection.

d) The needle of the galvanometer shows a momentary defection towards right.

30. Who said that current can cause magnetic field? **[1]**

a) Maxwell

b) Fleming

c) Michael Faraday

d) Oersted

31. A circular loop placed in a plane perpendicular to the plane of paper carries a current when the key is ON. The current as seen from points A and B (in the plane of the paper and on the axis of the coil) is anti-clockwise and clockwise respectively. The magnetic field lines point **[1]**

from B to A. The N-pole of the resultant magnet is on the face close to
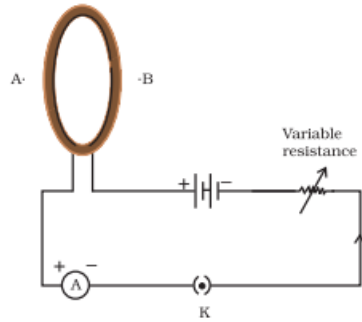
a) B

b) B if the current is small and A if the current is large

c) A

d) A if the current is small, and B if the current is large

32. Match the following with correct response. **[1]**

1. S.I unit of magnetic field
2. Magnetic field inside the solenoid
3. Compass needle
4. Solenoid

A. Small bar magnet capable of rotating freely
B. Tesla
C. Temporary magnet
D. Uniform

a) 1-A, 2-C, 3-B, 4-D

b) 1-C, 2-B, 3-D, 4-A

c) 1-B, 2-D, 3-A, 4-C

d) 1-D, 2-A, 3-C, 4-B

33. The strength of the magnetic field inside a long current carrying straight solenoid is **[1]**

a) more at the ends than at the centre

b) found to increase from one end to the other

c) the minimum in the middle

d) same at all points

34. Permanent magnets are made of **[1]**
A. Steel
B. Alnico
C. Nipermag
D. Tungsten

a) A and B

b) A, B and D

c) A, B and C

d) A and D

35. When a coil carries current in an anti clockwise direction what pole does it create? **[1]**

a) South pole

b) Zero pole

c) North pole

d) both South pole and North pole

36. In the arrangement shown in figure there are two coils wound on a non-conducting cylindrical rod. Initially, the key is not inserted. Then the key is inserted and later removed. **[1]**

Then
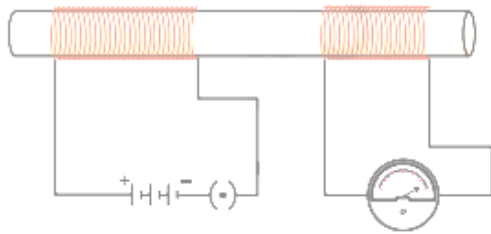
a) there is a momentary deflection in the galvanometer but it dies out shortly and there is no effect when the key is removed

b) the deflection in the galvanometer remains zero throughout

c) there are momentary galvanometer deflections that die out shortly; the deflections are in opposite directions

d) there are momentary galvanometer deflections that die out shortly; the deflections are in the same direction

37. The magnetic field at a point due to current carrying conductor is directly proportional to **[1]**

A. Current flowing through the conductor.

B. Distance of the conductor.

C. Resistance of the conductor.

a) A and C

b) A and B

c) Only B

d) Only A

38. A uniform magnetic field exists in the plane of paper pointing from left to right as shown in figure In the field an electron and a proton move as shown. The electron and the proton experience **[1]**
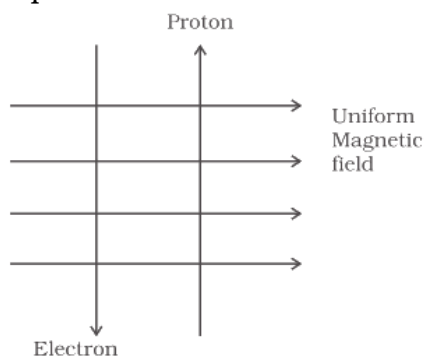
a) forces pointing into the plane of the paper and out of the plane of the paper, respectively

b) forces both pointing into the plane of the paper

c) forces both pointing out of the plane of the paper

d) force pointing opposite and along the direction of the uniform magnetic field respectively

39. **Assertion:** Photosynthesis is considered as an endothermic reaction. **[1]**
Reason: Energy gets released in the process of photosynthesis.

a) Both assertion and reason are CORRECT and reason is the

b) Both assertion and reason are CORRECT but, reason is NOT THE

CORRECT explanation of the assertion.

CORRECT explanation of the assertion.

c) Assertion is CORRECT but, reason is INCORRECT.

d) Assertion is INCORRECT but, reason is CORRECT.

40. **Assertion:** $Fe_2O_3 + 2\,Al \rightarrow Al_2O_3 + 2\,Fe$ **[1]**

The above chemical equation is an example of a displacement reaction.
Reason: Aluminium is more reactive than iron, displaces Fe from its oxide.

a) Both assertion and reason are CORRECT and reason is the CORRECT explanation of the assertion.

b) Both assertion and reason are CORRECT but, reason is NOT THE CORRECT explanation of the assertion.

c) Assertion is CORRECT but, reason is INCORRECT.

d) Assertion is INCORRECT but, reason is CORRECT.

ATOMIC ENERGY CENTRAL SCHOOL NO.4 RAWATBHATA

MCQ Examination September (2020-2021)

CLASS 10 - SOCIAL SCIENCE
Social Science

Time Allowed: 30 minutes   **Maximum Marks: 40**

1. Which of the following statement best describes Satyagraha as an idea?   **[1]**

   a) Practising civil disobedience   b) Boycott of schools and colleges

   c) Appealing to the conscience of the   d) Resignation from official posts
   adversary without physical force

2. 'Forced recruitment' means a process by which   **[1]**

   a) the people forced the state to join the   b) indians were forced by the British
   struggle   rulers to finance the British army

   c) the colonial state forced people in   d) the Indian princes had to supply
   rural areas to join the army   soldiers to fight for the British

3. People began discovering their _____ in the process of their struggle with colonialism.   **[1]**

   a) unity   b) simplicity

   c) ethnicity   d) diversity

4. The leader of the peasants in the Gudem Hills of Andhra was: **[1]**

   a) Alluri Sitaram Raju   b) Venkata Raju

   c) Jawahar Lal Nehru   d) Baba Ramchandra

5. What did the term **picket** refer to?   **[1]**

   a) Boycott of clothes and goods   b) Protest by blocking shop entrances

   c) Stealing from shops   d) Import of goods

6. Which of the following was the cause for business classes to participate in the Civil   **[1]**
   Disobedience Movement?

   a) Protection against the import of   b) To import their goods
   foreign goods

   c) To buy foreign goods without any   d) To sell Indian goods without any
   restrictions   restrictions

7. Which of the following statements is not true about the Jallianwalla Bagh incident?   **[1]**

   a) Crowds took to the streets in many   b) General Dyer blocked all exit points,
   Indian towns, attacking the police   and stop the opened fire on the
   and government buildings.   peaceful crowd.

   c) Dyer's aim was to produce a moral   d) Gandhiji went on indefinite fast to
   effect of great terror and awe in the   repression by the British.

minds of the satyagrahis.

8. What did Mahatma Gandhi in his book, Hind Swaraj, declare? **[1]**

a) British ruled India because the latter was militarily weak

b) British ruled India because they got international support

c) British ruled India because Indians cooperated with them

d) None of these

9. Which of the following was a cause for the withdrawal of the Non-Cooperation Movement? **[1]**

a) Outbreak of violence at Chauri Chaura

b) Lack of coordination among the satyagrahi

c) Gandhiji wanted to start Civil Disobedience

d) Other nationalists persuaded Gandhiji

10. Arrange the following freedom movements in decreasing order: **[1]**

i. Poona Pact between Gandhi and Ambedkar.

ii. Rashtriya Swayamsevak Sangh was founded.

iii. Bhagat Singh killed a senior British police officer in Lahore.

iv. All congress ministries resigned.

a) i, iv, iii, ii

b) iv, ii, iii, i

c) ii, iv, iii,i

d) iv, i, iii, ii

11. Which among the following is the second largest staple cereal crop of India? **[1]**

a) Paddy

b) Maize

c) Wheat

d) Bajra

12. _____, _____ and _____ are the major millets cultivated in India. **[1]**

a) Sugarcane, Tobacco, Jute

b) Jowar, Bajra, Ragi

c) Cotton, Groundnut, Sunflower

d) Wheat, Rice, Paddy

13. _____ state first among the Jowar producing states. **[1]**

a) Madhya Pradesh.

b) Karnataka

c) Maharashtra

d) Andhra Pradesh

14. Groundnut is a _____ crop and accounts for about half of the major oilseeds produced in the country. **[1]**

a) kharif

b) winter

c) zaid

d) rabi

15. Slash and burn, shifting farming is referred to as _____ in north-eastern states like Assam, Meghalaya, Mizoram, and Nagaland. **[1]**

a) primitive

b) tribal

c) jhumming

d) pamlou

16. Being leguminous crops, all these crops except arhar help in restoring soil fertility by fixing **[1]**

_____ from the air.

    a) carbon dioxide   b) hydrogen

    c) oxygen   d) nitrogen

17. Some of the important rabi crops are- **[1]**

    a) watermelon, muskmelon, cucumber   b) urad, cotton, jute, groundnut, and soyabean.

    c) wheat, barley, peas, gram, and mustard.   d) paddy, maize, jowar, bajra, tur (arhar), moong

18. _____ is a tropical as well as a subtropical crop. It grows well in a hot and humid climate. **[1]**

    a) Cotton   b) Paddy

    c) Wheat   d) Sugar cane

19. India is the largest producer as well as consumer of _____ in the world. **[1]**

    a) millets   b) food crops

    c) oil seeds   d) pulses

20. Which one of the following is a leguminous crop? **[1]**

    a) Millets   b) Pulses

    c) Sesamum   d) Jawar

21. A few gram panchayats grouped together are termed in various ways. Identify the incorrect one. **[1]**

    a) Gram   b) Block

    c) Panchayat Samiti   d) Mandal

22. The Zila Panchayat or District Council or Zilla Parishad or District Panchayat is the _____ tier of the Panchayati Raj system. **[1]**

    a) 2nd tier   b) none of these

    c) 1st tier   d) 3rd tier

23. A government formed by the coming together of at least two political parties refers to: **[1]**

    a) cooperative government   b) coalition government

    c) federation government   d) opposition government

24. All the panchayat Samitis or Mandals in a district together constitute the: **[1]**

    a) Village Cluster   b) Zilla Parishad

    c) Block   d) Gram Panchayat

25. Consider the following points regarding any change to the sharing of power between the Union Government and the State government. Which of the following is incorrect? **[1]**

    a) Any change to it has to be first passed by both the Houses of   b) It also includes the ratification by the third tier of the government

Parliament with at least one-third majority

c) It is not easy to make changes to this power-sharing arrangement

d) It has to be ratified by the legislatures of at least half of the total States

26. The distinguishing feature of a federal government is: **[1]**

a) National government gives some powers to the provincial governments.

b) Governmental power is divided between different levels of government.

c) Elected officials exercise supreme power in the government.

d) Power is distributed among the legislature, executive and judiciary

27. In India, the third tier of the government is called: **[1]**

a) Union or Central

b) Provincial or State

c) Panchayat or Municipality

d) Official or Public

28. Why Union List includes subjects of national importance such as the defence of the country, foreign affairs, banking, communications, and currency? **[1]**

a) Because we need a uniform policy on these matters throughout the country

b) Because the state feels over-burdened to handle them

c) Because the government in the states is not capable

d) Because these matters are of no importance to the state

29. When power is taken away from Central and State governments and given to Local government, it is called: **[1]**

a) conflict resolution

b) mutual understanding

c) separation

d) decentralisation

30. Panch, a president or sarpanch are _____ elected by all the adult population living in that ward. **[1]**

a) indirectly

b) hierarchy

c) directly

d) forcefully

31. In rural areas, farmers usually take crop loans: **[1]**

a) in the case of a calamity

b) at the end of the season

c) at the beginning of the season

d) in case of crop failure

32. Demonetisation was done with a motive of controlling: **[1]**

a) Increase in prices of goods

b) Inflation

c) Stagflation

d) Corruption

33. Along with the principal, the borrower has to pay the interest to: **[1]**

a) Friend

b) Lender

	c) Business partner	d) Relative

34. The credit helps to meet: **[1]**

a) Household needs	b) Working capital needs of production
c) Day to day expenses	d) The borrower and the lender

35. Identify the incorrect option as given below: **[1]**

a) The RBI monitors the banks in actually maintaining cash balance.	b) Banks have to submit information to the RBI on income tax returns.
c) The RBI sees that the banks give loans not just to profit-making businesses and traders but also to small cultivators	d) The RBI supervises the functioning of formal sources of loans.

36. Formal sector is different from informal credit sector because of **[1]**

a) The education	b) Their office
c) Popularity	d) Supervision by RBI

37. Find the incorrect option: **[1]**

a) Banks charge a lower rate of interest on loans than what they offer on deposits.	b) The difference between what is charged from borrowers and what is paid to the depositors is the main source of income for the banks.
c) Banks use a major portion of deposits to extend loans.	d) Banks keep only a small proportion of their deposits as cash with themselves.

38. Demonetisation encouraged people for: **[1]**

a) Barter system	b) Digital transaction
c) Gold exchange	d) Closure of bank accounts

39. Identify the incorrect option **[1]**

a) Commercial Banks make use of the deposits to meet the loan requirements of the people.	b) People's money is safe with the banks and it earns an amount of interest.
c) The Reserve Bank of India supervises the functioning of formal sources of loans.	d) The Central government issues currency notes on behalf of the Reserve Bank of India.

40. Why is it necessary for banks and cooperatives to increase their lending particularly in rural areas? **[1]**

a) To increase their profits	b) Rural areas are a good option for lending
c) To reduce the dependence on informal sources of credit	d) Rural areas require more loans

Solution

Class 10 - English

ENGLISH

1. **(c)** Teachers
   Explanation: According to her, Teachers are the most unpredictable creatures on the earth as it is very difficult for a student to predict the actions and nature of a teacher.

2. **(b)** Her Father
   Explanation: Otto Frank, her father gifted the diary to her. He gifted her this priceless gift on her thirteenth birthday.

3. **(a)** Her Mother
   Explanation: In her First Essay, she articulated that, " My mother talked as much as I did if not more, and there's not much you can do about inherited traits. She blamed her mother for her talking habit.

4. **(c)** Mrs. Kuperus
   Explanation: Until the age of six, Anne studied in the Montessori Nursery School and the head mistress of that school was Mrs. Kuperus. They both were very close to each other.

5. **(d)** As her Friend
   Explanation: Anne Frank treated her diary as her friend as she has too many family members but she was in a search of a friend with whom she can share each and everything. She got her friend in the form of a diary.

6. **(c)** Nine
   Explanation: Anne Frank had nine teachers in all. Amongst them, seven were male teachers and two were female teachers.

7. **(a)** On her thirteenth birthday
   Explanation: The Diary was given to Anne Frank for her thirteenth birthday by her father, Otto Frank. She needed it desperately as she was in search of a friend with whom she can share everything. She got a diary as her friend and the best gift of her life.

8. **(a)** Death of her Grandmother
   Explanation: In 1942, Anne lost her Grandmother. It was very painful for her as she was too close to her. This made a deep painful impression on her life.

9. **(a)** Thirty Six
   Explanation: Anne's Father Otto Frank married Anne's Mother Edith Frank when he was thirty six years old. They got married in 1925.

10. **(c)** Eleven Years
    Explanation: Anne's Father and her mother had an age gap of eleven years as at the time of their marriage, her Father was thirty six years old while her mother was Twenty five years old.

11. **(b)** A letter from Wanda's father
    Explanation: As Wanda was leaving the school forever, her father had written a letter to bring the matter to the notice of the school.

12. **(a)** Restless
    Explanation: The feeling of being unfair to Wanda aroused a feeling of guilt in Maddie's heart. She could not forgive her self for being a coward.

13. **(a)** To ponder about what they did unknowingly
    Explanation: As a responsible teacher, she made her students realize their mistakes and asked them to rectify it by not indulging in any such act of teasing someone.

14. **(a)** She could now send her the medal.
    Explanation: Miss Mason was glad as now she knew where Wanda was living so she could finally send her the medal she won in the drawing contest.

15. **(a)** Shabby but clean
Explanation: It revealed their poor financial condition. Though shabby the house was clean similar to Wanda's blue dress.

16. **(a)** She could not protect Wanda from all the bullying and stand there silently.
Explanation: Maddie could always relate more to Wanda's plight as both belonged to humble backgrounds. But she could never stop Peggy and others to tease Wanda and chose to be a silent spectator.

17. **(a)** Maddie
Explanation: Maddie could relate to Wanda's plight as she too came from a poor family. She could always understand her pain and agony.

18. **(a)** Sad
Explanation: When she spoke to the children her voice was very low. She felt bad for Wanda.

19. **(a)** Miss Mason
Explanation: Wanda wrote a letter to Miss Mason so that she could communicate with the entire Room, especially Maddie and Peggy.

20. **(b)** By politely inquiring about their well being and gifting them her drawing.
Explanation: Wanda humbly gifted Maddie and Peggy drawings reflecting their own faces respectively. Thus ending the rift which existed among them.

21. **(b)** It was her own face
Explanation: Maddie noticed that Wanda had really drawn it for her. It was a gift from Wanda. A drawing that reflected her face.

22. **(b)** Wanda's letter
Explanation: Miss Mason received a letter from Wanda and she read it to the students.

23. **(c)** The boy stands rigid with grief.
Explanation: The boy is very upset at the loss of his ball. He stands rigid and is trembling due to extreme grief.

24. **(b)** All the persons and things that we love.
Explanation: A Ball is a metaphor for all the people and things that we love and are irreplaceable. The ball stands for all the losses, one may endure in life.

25. **(d)** A ten cent coin
Explanation: A dime is a ten cent coin.

26. **(a)** John Berryman
Explanation: The Ball Poem was written by the American Poet John Berryman.

27. **(c)** The ball fell into the water.
Explanation: The ball bounced, went down the street and fell into the water, out of the reach of the child.

28. **(a)** Both are correct.
Explanation: Money is external as it cannot replace everything. It cannot buy back the ball the young boy has lost nor can it buy back the precious memories associated with the ball. Money cannot compensate for the sense of loss one has suffered.

29. **(b)** to cope with loss.
Explanation: Losing his ball makes the boy understand what it means to lose something precious. This loss is teaching him how to bear the loss and cope with grief as the loss is inevitable.

30. **(a)** To face loss and cope with it bravely.
Explanation: The phrase how to stand up, emphasises the need to face loss bravely and to cope with it. It also implies that life does not stop with each loss one bears in life. Man must learn to overcome loss and forge ahead.

31. **(d)** On a pile of quilts
Explanation: Griffin slipped into a big London store where he settled down to sleep on a pile of quilts.

32. **(b)** Mr Griffin
Explanation: Griffin was short of money, so he decided to steal money from a clergyman to pay his bills.

33. **(a)** On the steps of a house in London
Explanation: The boys were astonished by the fresh muddy imprints of a pair of bare feet coming out of nowhere on the streets of London. They spotted the footprints on the steps of a house and followed them.

34. **(b)** To find clothes and material for hiding his invisibility.
Explanation: Griffin was wandering naked, so he wanted clothes to provide him warmth in the winter season and he wanted some stuff that could hide the empty spaces above his shoulders. So he found a suitable shop and looted the required stuff.

35. **(c)** By train
Explanation: Griffin had robbed a shopkeeper and then he got eager to leave London and hide in the village of Iping. So he took a train to Iping to save himself from being caught.

36. **(b)** By swallowing certain rare drugs
Explanation: Griffin carried out a lot of experiments and finally, he invented drugs that had the potential of turning the human body invisible.

37. **(c)** To avenge his landlord
Explanation: Griffin was an eccentric. His landlord had tried to evict him out of the house, so out of rage, he set the house on fire.

38. **(a)** An eccentric scientist
Explanation: Griffin was a brilliant scientist but at the same time, he was lawless and eccentric.

39. **(a)** A dutiful cop
Explanation: Mr Jaffers was a dutiful policeman in the village of Iping. Unfortunately, he was not able to get hold of Griffin.

40. **(b)** All of these
Explanation: Griffin was a gifted scientist but at the same time, he was eccentric, short-tempered and lawless.

HINDI

1. **(b)** क्रिया
   Explanation: सरल वाक्य में एक कर्ता और एक क्रिया का होना आवश्यक होता है। इनमें से किसी भी एक के अभाव में वाक्य पूरा नहीं होता।

2. **(a)** मिश्र वाक्य
   Explanation: यहाँ एक प्रधान उपवाक्य है और एक आश्रित उपवाक्य है इसलिए यह मिश्र वाक्य है।

3. **(d)** संयुक्त वाक्य
   Explanation: यह मिश्र वाक्य का उदाहरण है क्योंकि इसमें एक प्रधान और दूसरा आश्रित उपवाक्य है।

4. **(d)** सरल वाक्य
   Explanation: एक कर्ता और क्रिया होने के कारण यह सरल वाक्य है।

5. **(d)** संज्ञा उपवाक्य
   Explanation: यहाँ 'वह दिल्ली जा रहा है' उपवाक्य प्रधान वाक्य 'उसने कहा' के कर्म के रूप में प्रयुक्त हुआ है इसलिए यह संज्ञा उपवाक्य है।

6. **(b)** संज्ञा उपवाक्य
   Explanation: यहाँ 'सत्य की विजय होती है' वाक्य का प्रयोग महात्मा गाँधी के कर्म के रूप में हुआ है इसलिए यह संज्ञा उपवाक्य है।

7. **(b)** मैंने एक बहुत कमज़ोर व्यक्ति को देखा।
   Explanation: दो अलग - अलग सरल वाक्यों को मिलाकर उसमें एक कर्ता और एक क्रिया करने के कारण यही उपयुक्त उदाहरण होगा।

8. **(a)** उसने कहा कि वह कल जयपुर जाएगा।
   Explanation: कि वह कल जयपुर जाएगा - संज्ञा उपवाक्य होने के कारण मिश्र वाक्य है।

9. **(c)** मेरी गाय काली है और खेत में चर रही है।
   Explanation: इस वाक्य में 'मेरी गाय काली है' और 'खेत में चर रही है' ये दोनों ही पूर्ण अर्थ लिए हुए हैं इसलिए यही संयुक्त वाक्य का उचित रूप है।

10. **(b)** तीन
    Explanation: रचना की दृष्टि से वाक्य के तीन भेद होते हैं - सरल वाक्य, संयुक्त वाक्य और मिश्रित वाक्य।

11. **(d)** रास्ते में कोहरा था इसलिए मैं जा न सका।
    Explanation: 'रास्ते में कोहरा था' और 'मैं जा न सका' ये दोनों ही वाक्य स्वतंत्र हैं इसलिए उपयुक्त वाक्य यही होगा।

12. **(b)** संयुक्त वाक्य
    Explanation: 'यहाँ पहले जंगल था' तथा 'अब घनी बस्ती है' ये दोनों ही पूर्ण वाक्य हैं इसलिए ये संयुक्त वाक्य हैं।

13. **(d)** उसको अपने परिश्रम का लाभ नहीं मिलता।
    Explanation: इस वाक्य में एक कर्ता और एक क्रिया है इसलिए सरल वाक्य का उचित विकल्प यही है।

14. **(a)** विशेषण उपवाक्य
    Explanation: इस वाक्य में ' जो आपने वहाँ रखी थी ' उपवाक्य 'वह किताब' की विशेषता प्रकट कर रहा है इसलिए यह विशेषण उपवाक्य है।

15. **(a)** चौकीदार आया तो था परन्तु वह आवाज़ लगाकर चला गया।
    Explanation: एक प्रधान और एक आश्रित उपवाक्य होने के कारण यही उपयुक्त वाक्य होगा।

16. **(d)** प्रेमचंद के द्वारा गोदान लिखा गया।
    Explanation: कर्ता 'प्रेमचंद' के साथ 'के द्वारा' लगाकर क्रिया को 'गोदान' के अनुसार परिवर्तित कर दिया गया है इसलिए यही उचित वाक्य है।

17. **(a)** कर्ता की
    Explanation: कर्तृवाच्य में कर्ता की प्रधानता होती है और क्रिया कर्ता के अनुसार परिवर्तित होती है।

18. **(d)** भाववाच्य
    Explanation: असमर्थता या विवशता के लिए प्रायः भाववाच्य का ही प्रयोग होता है।

19. **(d)** बच्चों द्वारा खेला जाएगा।
    Explanation: यही उचित भाववाच्य होगा क्योंकि भाववाच्य में वाक्य को परिवर्तित करते समय कर्ता के साथ 'से', 'द्वारा' या 'के द्वारा' लगाया जाता है और क्रिया अन्य पुरुष एकवचन की हो जाती है।

20. **(a)** तीन
    Explanation: वाच्य के तीन भेद होते हैं -
    कर्तृवाच्य, कर्मवाच्य और भाववाच्य

21. **(c)** भाववाच्य
    Explanation: यह भाववाच्य है क्योंकि यहाँ कर्ता 'पक्षियों' के साथ 'से' लगा हुआ है और क्रिया 'उड़ा जाता है'।

22. **(b)** कर्तृवाच्य का
    Explanation: यहाँ क्रिया कर्ता के अनुसार होने के कारण यह कर्तृवाच्य का उदाहरण है।

23. **(a)** कर्तृवाच्य
    Explanation: यह कर्तृवाच्य का उदाहरण है क्योंकि यहाँ 'गांधी जी' कर्ता के अनुसार ही वाक्य की क्रिया है।

24. **(d)** बच्चे से गिलास टूट गया।
    Explanation: कर्मवाच्य का उचित उदाहरण यही है क्योंकि यहाँ कर्ता के साथ 'से' लगा हुआ है और क्रिया 'गिलास' कर्म के अनुसार है।

25. **(a)** बालक के द्वारा पत्र लिखा जाता है।
    Explanation: कर्तृवाच्य को कर्मवाच्य में बदलते समय कर्ता के साथ 'से' या 'के द्वारा' लगाया जाता है।

26. **(a)** मुझसे चला नहीं जाता।
    Explanation: भाववाच्य का उचित उदाहरण यही है क्योंकि यहाँ कर्ता के साथ 'से' लगा हुआ है और क्रिया अन्यपुरुष एकवचन की है।

27. **(d)** कर्मवाच्य
    Explanation: कर्मवाच्य की क्रिया कर्म के अनुसार परिवर्तित होती है इसलिए कर्मवाच्य में कर्म की प्रधानता होती है।

28. **(a)** कर्मवाच्य का
    Explanation: यह कर्मवाच्य का उदाहरण है क्योंकि यहाँ कर्ता 'नेताजी' के साथ 'द्वारा' लगा हुआ है और क्रिया कर्म 'उद्घाटन' के अनुसार है।

29. **(d)** मजदूरों ने नहर खोदी।
    Explanation: कर्मवाच्य को कर्तृवाच्य में बदलते समय कर्ता के साथ 'ने' कारक चिह्न लगाकर क्रिया को कर्ता के अनुसार परिवर्तित किया जाता है इसलिए यही उचित कर्तृवाच्य है।

30. **(b)** बच्चे से रोया जाता है।
    Explanation: भाववाच्य का उचित उदाहरण यही होगा क्योंकि यहाँ क्रिया 'रोया जाता है' अन्यपुरुष एकवचन की है और कर्ता 'बच्चे' के साथ 'से' लगा हुआ है।

31. **(c)** काला घोड़ा <u>तेज़</u> भागता है।
    Explanation: घोड़े के भागने की रीति बताने के कारण यही रीतिवाचक क्रियाविशेषण का उपयुक्त उदाहरण है।

32. **(d)** व्यक्तिवाचक संज्ञा
    Explanation: 'रचना' व्यक्ति का नाम होने के कारण व्यक्तिवाचक संज्ञा है।

33. **(a)** विस्मयादिबोधक
    Explanation: यह विस्मयादिबोधक अव्यय है क्योंकि हर्ष के कारण यहाँ विस्मय उत्पन्न हो रहा है।

34. **(b)** संख्यावाचक विशेषण
    Explanation: 'सातवीं' संख्या होने के कारण संख्यावाचक विशेषण है।

35. **(d)** पद परिचय
    Explanation: व्याकरण के नियमों के अनुसार ही वाक्य के लिंग, वचन, क्रिया आदि बताना ही पद परिचय कहलाता है।

36. **(b)** विशेषण
    Explanation: गीत की विशेषता बताने के कारण यह विशेषण है।

37. **(d)** भाववाचक संज्ञा
    Explanation: 'दुःख' भाव होने के कारण भाववाचक संज्ञा है।

38. **(b)** समुच्चयबोधक
    Explanation: यह समुच्चयबोधक अव्यय है और विभाजक का कार्य कर रहा है।

39. **(d)** <u>वे</u> लोग दिल्ली जाएँगे।
    Explanation: यहाँ 'वे' सार्वनामिक विशेषण है क्योंकि ये 'लोगों' की विशेषता बता रहा है।

40. **(a)** सकर्मक क्रिया
    Explanation: 'फूल' कर्म होने के कारण यहाँ सकर्मक क्रिया है।

Solution

Class 10 - Mathematics

Mathematics

1. **(d)** $(-6, 7)$

   Explanation: Let the coordinates of the other end be $B(x_2, y_2)$.

   One end of the diameter is A (2, 3) and the centre is $O(-2, 5)$.

   Since the centre is midpoint of the diameter of the circle.

   $\therefore x = \frac{x_1 + x_2}{2}$

   $\Rightarrow -2 = \frac{2 + x_2}{2}$

   $\Rightarrow x_2 = -6$

   And $y = \frac{y_1 + y_2}{2}$

   $\Rightarrow 5 = \frac{3 + y_2}{2}$

   $\Rightarrow y_2 = 7$

   Therefore, the coordinates of other ends of the diameter are $(-6, 7)$.

2. **(a)** 3

   Explanation: We know that,

   x, y is any point on the Cartesian plane in first quadrant.

   Then,

   x = Perpendicular distance from Y - axis and

   y = Perpendicular distance from X - axis
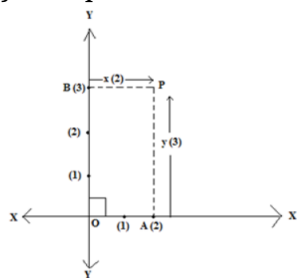
   So, the distance of the point P (2, 3) from the X - axis = 3

3. **(d)** IV quadrant

   Explanation: Let A and B be the joining point and P is the dividing point;

   Let's assume the co - ordinates of point P = x and y

   By using Section formula;

   x coordinate of point P will be -

   x = $\frac{mx_2 + nx_1}{m+n}$ and

   y co - ordinate of point P will be -

   $y = \frac{my_2 + ny_1}{m+n}$

   $\therefore$ x = $\frac{1(3) + 2(7)}{1+2}$

   y = $\frac{1(4) + 2(-6)}{1+2}$

   Given that,

   x_1 = 7, y_1 = - 6,

   x_2 = 3, y_2 = 4

   m = 1 and n = 2

   x = $\frac{3 + 14}{3} = \frac{17}{3}$

   y = $\frac{4 - 12)}{3} = -\frac{8}{3}$

   So, (x, y) = $\frac{17}{3}, -\frac{8}{3}$ lies in IV quadrant.

   [Since, in IV quadrant, x - coordinate is positive and y - coordinate is negative]

4. **(d)** ± 4

   Explanation: Distance between (4, p) and (1, 0) = 5

   $$\Rightarrow \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} = 5$$
   $$\Rightarrow \sqrt{(1-4)^2 + (0-p)^2} = 5$$
   $$\sqrt{(-3)^2 + (-p)^2} = 5$$

   Squaring, both sides

   $(-3)^2 + (-p)^2 = (5)^2 \Rightarrow 9 + p^2 = 25$

   $\Rightarrow p^2 = 25 - 9 = 16$

   $\therefore p = \pm\sqrt{16} = \pm 4$

5. **(c)** $\sqrt{85}$

   Explanation: Let mid point of A(2, 2), B(-4, -4) be whose coordinates will be

   $$= \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right) = \left(\frac{2-4}{2}, \frac{2-4}{2}\right)$$
   $$\text{or} \left(\frac{-2}{2}, \frac{-2}{2}\right) = (-1, -1)$$

   $\therefore$ Length of median CD

   $$= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$
   $$= \sqrt{(5+1)^2 + (-8+1)^2}$$
   $$= \sqrt{(6)^2 + (-7)^2} = \sqrt{36 + 49}$$
   $$= \sqrt{85} \text{ units}$$

6. **(d)** 12 units

   Explanation: Given: the vertices of a triangle ABC, A(0, 4), B (0, 0) and C (3, 0).

   $\therefore$ Perimeter of triangle ABC = AB + BC + AC

   $= \sqrt{(0-0)^2 + (0-4)^2} + \sqrt{0-3)^2 + (0-0)^2} + \sqrt{0-3)^2 + (4-0)^2}$

   $= \sqrt{0+16} + \sqrt{9+0} + \sqrt{9+16}$

   $= \sqrt{16} + \sqrt{9} + \sqrt{25}$

   = 4 + 3 + 5 = 12 units

7. **(a)** 7

   Explanation: Given that R is the mid-point of the line segment AB.

   Th y-coordinate of R = $\frac{5+y}{2}$

   $\Rightarrow$ y = 7

8. **(d)** 3, -9

   Explanation: Let the ordinate of other end = y

   then distance between (2, -3) and (10, y) = 10 units

   $$\Rightarrow \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} = 10$$
   $$\Rightarrow \sqrt{(10-2)^2 + (y+3)^2} = 10$$
   $$\Rightarrow \sqrt{(8)^2 + (y+3)^2} = 10$$

   Squaring both sides

   $(8)^2 + (y+3)^2 = (10)^2 \Rightarrow 64 + (y+3)^2 = 100$

   $\Rightarrow (y+3)^2 = 100 - 64 = 36 = (6)^2$

   $\Rightarrow (y+3)^2 - (6)^2 = 0 \Rightarrow (y+3+6)(y+3-6)$

   = 0 $\{\because a^2 - b^2 = (a+b)(a-b)\}$

   $\Rightarrow (y+9)(y-3) = 0$

   Either y + 9 = 0, then y = -9

   or y - 3 = 0, then y = 3

   $\therefore$ y = 3, -9

9. **(a)** x is +ve, y is -ve

   Explanation: In the fourth quadrant, x is positive, y is negative.

i.e the value of x is called abscissa which is positive and the value of y is called coordinate which is negative in the 4th quadrant

10. **(b)** (3, 5)

    Explanation: Point P divides the line segment joining the points A(1, 3) and B(4, 6) in the ratio 2: 1
    Let coordinates of P be (x, y), then
    $x = \frac{m_1 x_2 + m_2 x_1}{m_1 + m_2} = \frac{2 \times 4 + 1 \times 1}{2 + 1} = \frac{8 + 1}{3} = \frac{9}{3} = 3$
    $y = \frac{m_1 y_2 + m_2 y_1}{m_1 + m_2} = \frac{2 \times 6 + 1 \times 3}{2 + 1} = \frac{12 + 3}{3} = \frac{15}{3} = 5$
    ∴ Coordinates of P are (3, 5)

11. **(b)** 6, -8

    Explanation: Let the coordinates of midpoint O(2, -3) is equidistance from the points A(a, b - 2) and B(-2, 4).
    ∴ 2 = $\frac{a-2}{2}$
    ⇒ a - 2 = 4
    ⇒ a = 6
    Also -3 = $\frac{b-2+4}{2}$
    ⇒ b + 2 = -6
    ⇒ b = -8
    Therefore, a = 6 and b = -8

12. **(d)** IV

    Explanation: The point p is given by P $\left(\frac{2 \times 5 + 3 \times 2}{2 + 3}, \frac{2 \times 2 - 3 \times 5}{2 + 3} \right) = P\left(3, \frac{-11}{5} \right)$
    so, p lies in IV quadrant.

13. **(a)** 0

    Explanation: Since coordinates of any point on $y-$axis is $(0, y)$.
    Therefore, abscissa is 0.

14. **(d)** ordinate

    Explanation: The distance of a point from the x-axis is the y (vertical) coordinate of the point and is called ordinate.

15. **(a)** 2 : 1

    Explanation: The centroid of a triangle is the centre of the triangle which is the point of intersection of all the three medians of the triangle and divides the median in the ratio 2 : 1
    The median is a line drawn from the mid-point of a side to the opposite vertex.

16. **(d)** $\left(-6, \frac{5}{2} \right)$

    Explanation: Distance between (0, 0) and $\left(-6, \frac{5}{2} \right)$
    d = $\sqrt{(-6-0)^2 + \left(\frac{5}{2} - 0 \right)^2}$
    = $\sqrt{36 + \frac{25}{4}}$
    = $\sqrt{\frac{144+25}{4}}$
    = $\sqrt{\frac{169}{4}} = \frac{13}{2}$ = 6.5
    So, the point $\left(-6, \frac{5}{2} \right)$ does not lie in the circle.

17. **(a)** $5\sqrt{10}$ units

    Explanation: Since P is equidistant from A, B and C.

Therefore, P is centre of circumcircle of triangle ABC.

Hence, AP = Radius of circumcircle = $5\sqrt{10}$ units

18. **(b)** $\sqrt{2}$

Explanation: Distance between $(\cos\theta, \sin\theta)$ and $(\sin\theta, -\cos\theta)$

$= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

$= \sqrt{(-\cos\theta - \sin\theta)^2 + (\sin\theta - \cos\theta)^2}$

$= \sqrt{1+1} = \sqrt{2} \ \{\because \sin^2\theta + \cos^2\theta = 1\}$

19. **(a)** 5

Explanation: Three vertices of a rectangle ABCD are B (4,0), C (4, 3) and D (0, 3) length of one of its diagonals

$BD = \sqrt{(4-0)^2 + (0-3)^2} = \sqrt{4^2 + 3^2}$

$= \sqrt{16+9} = \sqrt{25}$ = 5

20. **(a)** (3, 6)

Explanation: Since, the point, where the perpendicular bisector of a line segment joining the points A(2, 5) and B(4, 7) cuts, is the mid-point of that line segment.

$\therefore$ Coordinates of Mid-point of line segment AB = $\left(\frac{2+4}{2}, \frac{5+7}{2}\right)$ = (3, 6)

21. **(d)** 2

Explanation: $\sin^2 30^0 \cos^2 45^0 + 4\tan^2 30^0 + \frac{1}{2}\sin^2 90^0 + \frac{1}{8}\cot^2 60^0$

$= \frac{1}{2^2} \times \frac{1}{(\sqrt{2})^2} + 4 \times \frac{1}{(\sqrt{3})^2} + \frac{1}{2} \times 1^2 + \frac{1}{8} \times \frac{1}{(\sqrt{3})^2}$

$[\because \sin 30^0 = \frac{1}{2}$ and $\cos 45^0 = \frac{1}{\sqrt{2}}$ and $\tan 30^0 = \frac{1}{\sqrt{3}}$ and $\cot 60^0 = \frac{1}{\sqrt{3}}]$

$= \frac{1}{4} \times \frac{1}{2} + 4 \times \frac{1}{3} + \frac{1}{2} + \frac{1}{24}$

$= \frac{1}{8} + \frac{4}{3} + \frac{1}{2} + \frac{1}{24}$

$= \frac{3+32+12+1}{24} = \frac{48}{24} = 2$

22. **(a)** $90°$

Explanation: Given: $\sin\alpha = \frac{1}{\sqrt{2}}$

$\Rightarrow \sin\alpha = \sin 45°$

$\Rightarrow \alpha = 45°$

And $\cos\beta = \frac{1}{\sqrt{2}}$

$\Rightarrow \cos\beta = \cos 45°$

$\Rightarrow \beta = 45°$

$\therefore \alpha + \beta = 45° + 45° = 90°$

23. **(c)** 1

Explanation: Given: x cosA = 1

$\Rightarrow$ x = $\frac{1}{\cos A}$ = sec A

And tan A = y

$\therefore$ x^2 - y^2 = sec^{2}A - tan^{2}A = 1

$[\because \sec^2\theta - \tan^2\theta = 1]$

24. **(c)** $sec\,\theta + tan\,\theta$

Explanation: Given: $\sqrt{\frac{1+\sin\theta}{1-\sin\theta}}$

$= \sqrt{\frac{1+\sin\theta}{1-\sin\theta}} \times \sqrt{\frac{1+\sin\theta}{1+\sin\theta}}$

$= \sqrt{\frac{(1+\sin\theta)^2}{1-\sin^2\theta}}$

$= \sqrt{\frac{(1+\sin\theta)^2}{\cos^2\theta}}$

$= \frac{1+\sin\theta}{\cos\theta}$

$= \frac{1}{\cos\theta} + \frac{\sin\theta}{\cos\theta}$

$= \sec\theta + \tan\theta$

25. **(c)** $\frac{83}{8}$

Explanation: $\cos^2 30° \cos^2 45° + 4\sec^2 60° + \frac{1}{2}\cos^2 90° - 2\tan^2 60°$

$= \left(\frac{\sqrt{3}}{2}\right)^2 \cdot \left(\frac{1}{\sqrt{2}}\right)^2 + \left(4 \times 2^2\right) + \left(\frac{1}{2} \times 0^2\right) - 2 \times (\sqrt{3})^2$

$= \left(\frac{3}{4} \times \frac{1}{2}\right) + 16 + 0 - 6 = \frac{3}{8} + 10 = \frac{83}{8}$

26. **(d)** $sin60°$

Explanation: Given: $\frac{2\tan 30°}{1+\tan^2 30°}$

$= \frac{2 \times \frac{1}{\sqrt{3}}}{1+\left(\frac{1}{\sqrt{3}}\right)^2}$

$= \frac{2}{\sqrt{3}\left(\frac{3+1}{3}\right)}$

$= \frac{6}{4\sqrt{3}} = \frac{3}{2\sqrt{3}}$

$= \frac{\sqrt{3}}{2}$

$= \sin 60°$

27. **(d)** 0

Explanation: Given: $\sin\alpha = \frac{1}{\sqrt{2}}$

$\Rightarrow \sin\alpha = \sin 45°$

$\Rightarrow \alpha = 45°$

And $\tan\beta = 1$

$\Rightarrow \tan\beta = \tan 45°$

$\Rightarrow \beta = 45°$

$\therefore \cos(\alpha + \beta) = \cos(45° + 45°) = \cos 90° = 0$

28. **(a)** $30°$

Explanation: $\sqrt{3}\tan 2\theta - 3 = 0$

$\Rightarrow \sqrt{3}\tan 2\theta = 3$

$\Rightarrow \tan 2\theta = \frac{3}{\sqrt{3}}$

$\Rightarrow \tan 2\theta = \sqrt{3}$

$\Rightarrow \tan 2\theta = \tan 60°$

$\Rightarrow 2\theta = 60°$

$\Rightarrow \theta = 30°$

29. **(b)** 2

Explanation: Since $\sec\theta = \sqrt{1 + \tan^2\theta}$

$\therefore \sec\theta = \sqrt{1 + \left(\sqrt{3}\right)^2}$

$= \sqrt{1 + 3} = \sqrt{4} = 2$

30. **(a)** $\frac{3}{4}$

Explanation: $\cos\theta = \frac{4}{5} = \frac{AB}{AC}$

$\therefore \quad BC^2 = AC^2 - AB^2 = 25 - 16 = 9$

$\Rightarrow BC = 3$

$$\therefore \tan\theta = \frac{BC}{AB} = \frac{3}{4}$$
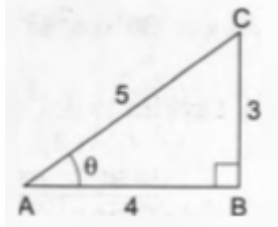
31. **(d)** a^2b^2

    Explanation: $x = a \cos\theta$, $y = b \sin\theta$

    $bx = ab \cos\theta$ ...(i)

    $ay = ab \sin\theta$ ...(ii)

    Squaring and adding (i) and (ii) we get,

    $b^2x^2 + a^2y^2 = a^2b^2 \cos^2\theta + a^2b^2 \sin^2\theta$

    $= a^2b^2 (\cos^2\theta + \sin^2\theta)$

    $= a^2b^2 \times 1$

    $= a^2b^2$

32. **(a)** 0

    Explanation: Given: $\frac{\tan 45°}{\cos ec 30°} + \frac{\sec 60°}{\cot 45°} - \frac{5\sin 90°}{2\cos 0°}$

    $= \frac{1}{2} + \frac{2}{1} - \frac{5 \times 1}{2 \times 1}$

    $= \frac{1}{2} + \frac{2}{1} - \frac{5}{2}$

    $= \frac{1+4-5}{2} = \frac{5-5}{2}$

    $= \frac{0}{2} = 0$

33. **(a)** $\frac{7}{25}$

    Explanation: $\tan\theta = \frac{3}{4} = \frac{\text{Perpendicular}}{\text{Base}}$

    By Pythagoras Theorem,

    $(\text{Hyp.})^2 = (\text{Base})^2 + (\text{Perp.})^2$

    $= (4)^2 + (3)^2 = 16 + 9 = 25$

    $\therefore Hyp. = \sqrt{25} = 5$

    Now, $\sin\theta = \frac{\text{Perpendicular}}{\text{Hypotenuse}} = \frac{3}{5}$

    and $\cos\theta = \frac{\text{Base}}{\text{Hypotenuse}} = \frac{4}{5}$

    $\cos^2\theta - \sin^2\theta = \left(\frac{4}{5}\right)^2 - \left(\frac{3}{5}\right)^2$

    $= \frac{16}{25} - \frac{9}{25} = \frac{16-9}{25} = \frac{7}{25}$

34. **(a)** $\tan\theta$

    Explanation: Here $\sqrt{(1 - \cos^2\theta)\sec^2\theta}$

    $= \sqrt{\sin^2\theta \times \frac{1}{\cos^2\theta}}$

    $[\because 1 - \cos^2\theta = \sin^2\theta \text{ and } \sec^2\theta = \frac{1}{cos^2\theta}$

    $= \sqrt{\frac{\sin^2\theta}{\cos^2\theta}}$

    $= \sqrt{\tan^2\theta}$

    $= \tan\theta$

35. **(d)** $\tan 60^0$

    Explanation: $\frac{2\tan 30^0}{1 - \tan^2 30^0}$

    $= \frac{2 \times \frac{1}{\sqrt{3}}}{1 - (\frac{1}{\sqrt{3}})^2} = \frac{\frac{2}{\sqrt{3}}}{1 - \frac{1}{3}}$

$$= \frac{\frac{2}{\sqrt{3}}}{\frac{2}{3}} = \frac{2}{\sqrt{3}} \times \frac{3}{2}$$
$$= \sqrt{3}$$
$$= \tan 60^0$$

36. **(b)** 0

Explanation: Given: $\frac{1-\tan^2 45°}{1+\tan^2 45°}$

$= \frac{1-(1)^2}{1+(1)^2} = \frac{1-1}{1+1} = 0/2$

$= 0$

37. **(b)** $\frac{12}{5}$

Explanation: $BA = \sqrt{(AD)^2 + (BD)^2}$
$= \sqrt{(4)^2 + (3)^2}$
$= \sqrt{25} = 5$
$\therefore AC = \sqrt{(BC)^2 + (AB)^2}$
$= \sqrt{(12)^2 + (5)^2}$
$= \sqrt{144 + 25}$
$= \sqrt{169} = 13$
Hence,
$$\cos\theta = 12/13$$
$$and \sin\theta = 5/13$$
$$\Rightarrow \cot\theta = 12/5$$

38. **(c)** 0

Explanation:
Given,
$\cos\theta = \frac{2}{3} = \frac{b}{h}$ = k
$2\sec^2\theta + 2\tan^2\theta - 7$
b = 2k, h = 3k
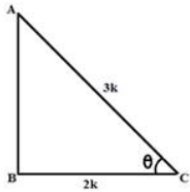
In $\triangle ABC$,
$h^2 = p^2 + b^2$
$\Rightarrow (3k)^2 = p^2 + (2k)^2$
$\Rightarrow 9k^2 = p^2 + 4k^2$
$\Rightarrow p^2 = 9k^2 - 4k^2$
$\Rightarrow p^2 = 5k^2$
$\Rightarrow p = \sqrt{5}k$
Then,
$\sec\theta = \frac{3k}{2k} = \frac{3}{2}$ and $\tan\theta = \frac{\sqrt{5}k}{2k} = \frac{\sqrt{5}}{2}$
$\Rightarrow 2\sec^2\theta + 2\tan^2\theta - 7$
$\Rightarrow 2\left(\frac{3}{2}\right)^2 + 2\left(\frac{\sqrt{5}}{2}\right)^2 - 7$
$\Rightarrow 2 \times \frac{9}{4} + 2 \times \frac{5}{4} - 7$
$\Rightarrow \frac{9}{2} + \frac{5}{2} - 7$
$\Rightarrow \frac{9+5-14}{2} = 0$

39. **(c)** $0°$

   Explanation: sin 2A = 2 sin A is true when A $=0°$

   $\because \sin 2A = 2 \sin A$

   $\Rightarrow \sin(2 \times 0°) = \sin 0°$

   $\Rightarrow \sin 0° = \sin 0°$

40. **(c)** $\frac{1}{4}$

   Explanation: We have $\sin^2 30° + 4\cot^2 45° - \sec^2 60°$

   $= \left(\frac{1}{2}\right)^2 + 4 \times (1)^2 - 2^2$

   $= \frac{1}{4} + 4 - 4$

   $= \frac{1}{4}$

1. **(c)** $3BaCl_2 + Al_2(SO_4)_3 \rightarrow 2AlCl_3 + 3BaSO_4$

   Explanation: The number of atoms of all elements is equal on the reactants and products side.
   So, $3BaCl_2 + Al_2(SO_4)_3 \rightarrow 2AlCl_3 + 3BaSO_4$ is balanced chemical reaction.

2. **(d)** (ii) and (iii)
   Explanation: When Solid calcium oxide reacts vigorously with water to form calcium hydroxide accompanied by the liberation of heat. It proves the reaction is exothermic. The pH of the solution will be more than 7 because oxides and hydroxides of metals are alkaline.

3. **(a)** displacement reaction
   Explanation: This is an example of displacement reaction because Fe in Fe_2O_3 has been displaced by Al.

   Hence correct answer is displacement reaction.

4. **(b)** IV
   Explanation:
   $ZnSO_4$ solution is colourless. It is contained in IV.

5. **(c)** Chemical equation
   Explanation: The representation of a chemical reaction with the help of symbols of reactants and products is known as a chemical equation.

6. **(d)** $FeSO_4$

   Explanation: Copper Sulphate Solution ($CuSO_4$) is blue in colour. When an iron nail is placed in it, we can observe the following:

   i. reddish-brown deposits on iron (these are of Copper)
   ii. colour of the solution turns from blue to light green.

   The formula for this reaction is: $Fe + CuSO_4 \rightarrow FeSO_4 + Cu$

   Here, Fe is more reactive than Cu. So Fe displaces Cu to form Iron Sulfate and Copper.

7. **(d)** Heating copper wire in presence of air at high temperature
   Explanation: In the other given options here, there is no involvement of chemical reaction. When copper is heated in presence of air at high-temperature copper undergoes an oxidation reaction to give out copper oxide.

8. **(b)** Silver chloride turns grey
   Explanation: When silver chloride is exposed to sunlight, photolytic decomposition reaction takes place i.e. the decomposition reaction carried out by sunlight. AgCl is broken down into Ag and Cl. This is a reaction used in black and white photography.
   $2AgCl$ SilverChloride(White). $\rightarrow 2Ag$ Silver(Gray) $+ Cl$ (Chlorine)

9. **(a)** NO_2, O_2

   Explanation: A decomposition reaction takes place on heating $Pb(NO_3)_2$ to form PbO, NO_2, and O_2.
   Lead (II) nitrate $\rightarrow$ Lead (II) oxide + Nitrogen dioxide + Oxygen
   $2 Pb(NO_3)_2$ (s) $\rightarrow 2$ PbO (s) $+ 4 NO_2$ (g) $+ O_2$ (g)

10. **(c)** SO_2
    Explanation: On heating anhydrous ferrous sulphate decomposes to form ferric oxide (Fe_2O_3), sulphur

dioxide (SO_2) and sulphur trioxide (SO_3).

SO_2 gas turns lime water milky and acidified potassium dichromate paper green.

11. **(a)** Reddish-brown
Explanation: Ferrous sulphate (FeSO4) is green in colour, it forms a reddish-brown coloured ferric oxide, sulphur oxide, and sulphur trioxide, the reaction is called decomposition.

12. **(c)** Double displacement
Explanation: The reactions which involve the exchange of ions (cations and anions) between the reactants are called double displacement reactions.
AB + CD $\rightarrow$ AC + BD
In a double displacement reaction exchange of ions takes place. No substance is oxidized or reduced.
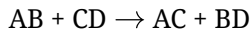
13. **(b)** Mechanical method
Explanation: Mechanical Barrier methods include the diaphragm, cervical cap, male and female condom, spermicidal foam, sponges, and film. Unlike other methods of birth control, barrier methods are used only when you have sexual intercourse.

14. **(b)** (i) - (b), (ii) - (d), (iii) - (a), (iv) - (c)
Explanation:
   - A flower is a plant's reproductive structure. One major part is the carpel, the female reproductive structure that includes the ovary. Inside the ovary is an ovule that, when fertilized, will develop into a seed. A seed contains an embryo (baby plant), the endosperm (food for the embryo), and a seed coat.
   - Vasectomy is a surgical procedure for male sterilization or permanent contraception. During the procedure, the male vas deferens are severed and then tied or sealed in a manner so as to prevent sperm from entering into the urethra and thereby prevent fertilization.
   - Tubal ligation or tubectomy (also known as having one's "tubes tied") is a surgical procedure for sterilization in which a woman's fallopian tubes are clamped and blocked or severed and sealed, either of which prevents eggs from reaching the uterus for implantation.
   - Hermaphrodite is an animal having both male and female sex organs or other sexual characteristics, either abnormally or (in the case of some organisms) as the natural condition.

15. **(d)** testis $\rightarrow$ vasdeferens $\rightarrow$ urethra
Explanation: Sperms are produced in the testis and then carried away by the vas deferens to the urethra.

16. **(d)** Both are false
Explanation: Estrogen is the primary female sex hormone. It is responsible for the development and regulation of the female reproductive system and secondary sex characteristics.
Plasmodium reproduces by binary fission and not by regeneration.

17. **(c)** species
Explanation: A **species** is often defined as the largest group of organisms in which two individuals can produce fertile offspring, typically by sexual reproduction.

18. **(a)** Regeneration
Explanation: In this type of reproduction, all the parts regenerate into an individual.

19. **(a)** gametes, zygote, embryo, seedling
Explanation: The sequence of reproductive stages seen in flowering plants is as follows:
Gametes $\longrightarrow$ Zygote $\longrightarrow$ Embryo $\longrightarrow$ Seedling

20. **(c)** Similar
Explanation: Similar because It follows the principle of cloning.

21. **(d)** Only ovary
Explanation: After fertilization through the act of pollination, the flower's ovary becomes swollen and turns into a fruit. The flower's ovules, found inside the ovary, harden and become the seeds inside the fruit. The ovary becomes a fruit. The wall of the ovary becomes the wall of the fruit called the pericarp. The fruit protects the developing seeds and plays an important role in seed dispersal. This process is controlled by

auxins produced by the seeds. Once the fruit forms the rest of the flower parts die and fall away.
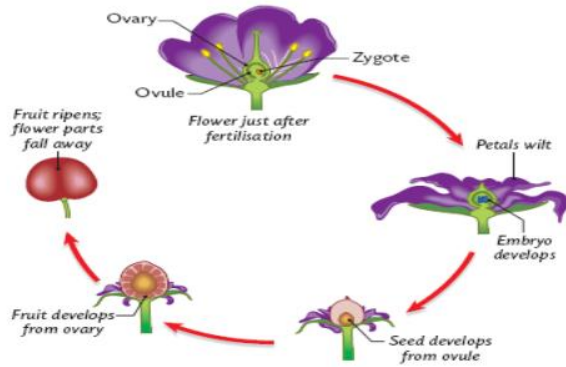
22. **(d)** Bacteria
Explanation: Syphilis is a sexually transmitted infection caused by the bacterium Treponema pallidum subspecies pallidum. The signs and symptoms of syphilis vary depending on which of the four stages it presents (primary, secondary, latent, and tertiary.

23. **(d)** Uterus
Explanation: The fertilized embryo gets attached to the uterus and all the developmental process of the embryo takes place in the uterus.

24. **(a)** B, D, A, C
Explanation: The correct sequence is B, D, A, C.
Amoeba is a unicellular organism. They reproduce by fission asexually, different from the human's method. It has a porous cell membrane that encloses the cell organelles and cytoplasm. After replicating its genetic material through mitotic (equal) division, the cell divides into two equal-sized daughter cells. The genetic material is also equally partitioned; therefore the daughter cells are genetically identical to each other and the parent cell. In this process, the nucleus of the Amoeba first divides to form two daughter nuclei by the process of Karyokinesis (a division of cell nucleus). After the nucleus has divided into two, the process of Cytokinesis(a division of the cytoplasm) takes place in which the cytoplasm in the mother cell divides into two daughter cells. This leads to the formation of the two daughter Amoebae cell having a nucleus and its own cell organelles.

25. **(d)** plumule, cotyledon and radicle
Explanation:
   - A represents the plumule which forms the shoot.
   - B represents the cotyledon, and
   - C represents the radicle that forms the roots.

26. **(d)** The relative motion between a magnet and a coil produces an electric current.
Explanation: When a straight coil and a magnet are moved relative to each other, a current is induced in the coil. This phenomenon is known as electromagnetic induction.

27. **(a)** Induced current will start flowing
Explanation: According to Lenz's law, when a closed coil is linked with a varying magnetic flux, then some current is induced in the coil.
So, when a magnet is taken towards a circular coil, then a varying magnetic flux is linked with the coil so that current is induced in the coil. This phenomenon is said to be electromagnetic induction.

28. **(a)** Straight
Explanation: The magnetic field lines inside the solenoid are in the form of parallel straight lines. The field lines inside the solenoid are in the form of straight lines which indicates that the magnetic field is the same at all points inside the solenoid.

29. **(b)** The needle of the galvanometer shows a momentary deflection towards left.
Explanation: When a bar magnet is pushed into the coil of insulated copper wire connected to a galvanometer, an induced current is set-up in the coil due to the change of the magnetic field through it. As a result, the galvanometer gives a deflection (say towards left).

30. **(d)** Oersted
    Explanation: Hans Christian Oersted was a Danish Physicist who discovered that electric current can create magnetic fields which were the first connection between electricity and magnetism.

31. **(c)** A
    Explanation: On applying the Right-hand thumb rule, the magnetic field lines will be from point B to point A. As we know that magnetic field lines move from North pole to South pole outside the magnet. So, A will represent North and B will represent the south pole. So, The N-pole of the resultant magnet is on the face close to point A.

32. **(c)** 1-B, 2-D, 3-A, 4-C
    Explanation: (1) The tesla (symbolized T) is the standard unit of magnetic flux density.
    (2) A solenoid is a tightly wound helical coil of wire whose diameter is small compared to its length. The magnetic field generated in the centre, or core, of a current carrying solenoid is essentially uniform, and is directed along the axis of the solenoid.
    (3) The needle of a magnetic compass is 'just' a small bar magnet that is balanced carefully so it can rotate freely.
    (4) Solenoid is temporary strong magnet, when connected through external source like battery or when electricity passed through it. It is also known as electromagnet.

33. **(d)** same at all points
    Explanation: Inside the solenoid magnetic field lines are straight. This indicates a strong magnetic field. Hence the magnetic field is uniform at all points inside the solenoid.

34. **(c)** A, B and C
    Explanation: Magnets are made from magnetic metals – iron, nickel and cobalt. These are the only pure metals that can be turned into a **permanent magnet**. **Steel** is an alloy of iron and so can also be **made** into a **magnet**. **Alnico** and Nipermag alloys are ferromagnetic, with a high coercivity (resistance to loss of magnetism) and are **used to make permanent magnets**.

35. **(c)** North pole
    Explanation: According to clock rule if we look at the face of the coil which carries current in the clockwise direction then the face is called as south pole looking from the other side of coil we find that anti-clockwise current flows that is called as the north pole.

36. **(c)** there are momentary galvanometer deflections that die out shortly; the deflections are in opposite directions
    Explanation: When the key is plugged, the galvanometer shows momentary deflection in one direction. When the key is removed, the galvanometer shows momentary deflection in the opposite direction.

37. **(d)** Only A
    Explanation: The magnitude of the magnetic field produced at a given point is directly proportional to the magnitude of the current passing through the conductor. The strength of the field at any point is inversely proportional to the distance of the point from the wire. ($B \propto I$ and $B \propto \frac{1}{r}$).

38. **(b)** forces both pointing into the plane of the paper
    Explanation: The direction of the current is opposite to the direction of the movement of electron. So, the current will move upwards. If the index finger is showing the direction of the magnetic field, the ring finger is showing the direction of the current, then the direction of thumb is into the paper.

39. **(b)** Both assertion and reason are CORRECT but, reason is NOT THE CORRECT explanation of the assertion.
    Explanation: Both assertion and reason are CORRECT but, reason is NOT THE CORRECT explanation of the assertion.

40. **(a)** Both assertion and reason are CORRECT and reason is the CORRECT explanation of the assertion.
    Explanation: Both assertion and reason are CORRECT and reason is the CORRECT explanation of the assertion.

Social Science

1. **(c)** Appealing to the conscience of the adversary without physical force
Explanation: 'Satyagraha is not physical force. A satyagrahi does not inflict pain on the adversary; he does not seek his destruction. In the use of satyagraha, there is no ill-will whatever

2. **(c)** the colonial state forced people in rural areas to join the army
Explanation: Villages were called upon to supply soldiers, and the forced recruitment in rural areas caused widespread anger. Forced recruitment – A process by which the colonial state forced people to join the army.

3. **(a)** unity
Explanation: People began discovering their unity in the process of their struggle with colonialism. The sense of being oppressed under colonialism provided a shared bond that tied many different groups together.

4. **(a)** Alluri Sitaram Raju
Explanation: In the Gudem Hills of Andhra Pradesh, the colonial government had closed large forest areas, preventing people from entering the forests to graze their cattle, or to collect fuelwood and fruits. This enraged the hill people. Not only were their livelihoods affected but they felt that their traditional rights were being denied. When the government began forcing them to contribute begar for road building, the hill people revolted. Alluri Sitaram Raju came to lead them.

5. **(b)** Protest by blocking shop entrances
Explanation: Picket refers to a form of demonstration or protest by which people block the entrance to a shop, factory, or office.

6. **(a)** Protection against the import of foreign goods
Explanation: During the First World War, Indian merchants and industrialists had made huge profits and become powerful. Keen on expanding their business, they now reacted against colonial policies that restricted business activities. They wanted protection against imports of foreign goods, and a rupee-sterling foreign exchange ratio that would discourage imports.

7. **(d)** Gandhiji went on indefinite fast to repression by the British.
Explanation: On 13 April the infamous Jallianwalla Bagh incident took place. On that day a large crowd gathered in the enclosed ground of Jallianwalla Bagh. Dyer entered the area, blocked the exit points, and opened fire on the crowd, killing hundreds. As the news of Jallianwalla Bagh spread, crowds took to the streets in many north Indian towns. There were strikes, clashes with the police, and attacks on government buildings.

8. **(c)** British ruled India because Indians cooperated with them
Explanation: In his famous book Hind Swaraj (1909) Mahatma Gandhi declared that British rule was established in India with the cooperation of Indians and had survived only because of this cooperation. If Indians refused to cooperate, British rule in India would collapse within a year, and swaraj would come.

9. **(a)** Outbreak of violence at Chauri Chaura
Explanation: At Chauri Chaura(1922) in Gorakhpur, a peaceful demonstration in a bazaar turned into a violent clash with the police. Hearing of the incident, Mahatma Gandhi called a halt to the Non-Cooperation Movement.

10. **(d)** iv, i, iii, ii
Explanation: All congress ministries resigned in 1939. Poona Pact between Gandhi and Ambedkar in 1932. Bhagat Singh killed a senior British police officer in Lahore in 1928. Rashtriya Swayamsevak Sangh was founded in 1925.

11. **(c)** Wheat
Explanation: This is the second most important cereal crop. It is the main food crop, in the north and

north-western part of the country. This rabi crop requires a cool growing season and bright sunshine at the time of ripening. It requires 50 cm to 75 cm of annual rainfall evenly distributed over the growing season.

12. **(b)** Jowar, Bajra, Ragi
    Explanation: Jowar, bajra, and ragi are the important millets grown in India. Though these are known as coarse grains, they have very high nutritional value.

13. **(c)** Maharashtra
    Explanation: Major Jowar producing States were Maharashtra, Karnataka, Andhra Pradesh and Madhya Pradesh in 2011-12.

14. **(a)** kharif
    Explanation: Groundnut is a kharif crop and accounts for about half of the major oilseeds produced in the country. Gujarat was the largest producer of groundnut followed by Andhra Pradesh and Tamil Nadu in 2011-12.

15. **(c)** jhumming
    Explanation: It is Jhumming in north-eastern states like Assam, Meghalaya, Mizoram, and Nagaland; Pamlou in Manipur, Dipa in Bastar district of Chhattishgarh, and in Andaman and Nicobar Islands.

16. **(d)** nitrogen
    Explanation: Being leguminous crops, all these crops except arhar help in restoring soil fertility by fixing nitrogen from the air. Therefore, these are mostly grown in rotation with other crops. Major pulse producing states in India are Madhya Pradesh, Uttar Pradesh, Rajasthan, Maharashtra, and Karnataka.

17. **(c)** wheat, barley, peas, gram, and mustard.
    Explanation: Rabi crops are sown in winter from October to December and harvested in summer from April to June. Some of the important rabi crops are wheat, barley, peas, gram, and mustard.

18. **(d)** Sugar cane
    Explanation: Sugarcane is a tropical as well as a subtropical crop. It grows well in a hot and humid climate with a temperature of 21^oC to 27^oC and an annual rainfall between 75cm and 100cm.

19. **(d)** pulses
    Explanation: India is the largest producer as well as the consumer of pulses in the world. These are the major source of protein in a vegetarian diet.

20. **(b)** Pulses
    Explanation: Pulses is a leguminous crop

21. **(a)** Gram
    Explanation: The local government structure goes right up to the district level. A few gram panchayats are grouped together to form what is usually called a panchayat Samiti or block or Mandal.

22. **(d)** 3rd tier
    Explanation: The Zila Panchayat or District Council or Zilla Parishad or District Panchayat is the third tier of the Panchayati Raj system. Zila Parishad is an elected body.

23. **(b)** coalition government
    Explanation: A government formed by the coming together of at least two political parties. Usually, partners in a coalition form a political alliance and adopt a common programme.

24. **(b)** Zilla Parishad
    Explanation: All the panchayat Samitis or Mandals in a district together constitute the Zilla (district) Parishad. Most members of the Zilla Parishad are elected.

25. **(b)** It also includes the ratification by the third tier of the government
    Explanation: This sharing of power between the Union Government and the State governments is basic to the structure of the Constitution. It is not easy to make changes to this power-sharing arrangement. The Parliament cannot on its own change this arrangement. Any change to it has to be first passed by both the Houses of Parliament with at least two-thirds majority. Then it has to be ratified by the legislatures of at least half of the total States.

26. **(b)** Governmental power is divided between different levels of government.
    Explanation: Federalism is a system of government in which the power is divided between a central

authority and various constituent units of the country. Usually, a federation has two levels of government. One is the government for the entire country that is usually responsible for a few subjects of common national interest. The others are governments at the level of provinces or states that look after much of the day-to-day administering of their state. Both these levels of governments enjoy their power independent of the other.

27. **(c)** Panchayat or Municipality
    Explanation: In India, we have a three-tier government. Union level, State level, and Local level (Panchayati Raj).

28. **(a)** Because we need a uniform policy on these matters throughout the country
    Explanation: Union List includes subjects of national importance such as the defence of the country, foreign affairs, banking, communications, and currency. They are included in this list because we need a uniform policy on these matters throughout the country.

29. **(d)** decentralisation
    Explanation: When power is taken away from Central and State governments and given to Local government, it is called decentralisation. The basic idea behind decentralisation is that there are a large number of problems and issues which are best settled at the local level.

30. **(c)** directly
    Explanation: This is a council consisting of several ward members, often called panch, and a president or sarpanch. They are directly elected by all the adult population living in that ward.

31. **(c)** at the beginning of the season
    Explanation: Farmers usually take crop loans at the beginning of the season in order to meet their requirements, then they repay it after the harvest.

32. **(d)** Corruption
    Explanation: Demonetisation was done to promote digital transactions and control corruption. It was also done to ambush black market.

33. **(b)** Lender
    Explanation: A lender is an individual, a public or private group, or a financial institution that makes funds or loans available to another with the expectation that the funds will be repaid. However, every loan agreement specifies an interest rate which the borrower must pay to the lender along with the repayment of the principal.

34. **(b)** Working capital needs of production
    Explanation: The credit helps to meet the working capital needs of production, ongoing expenses of production, complete the production on time, and thereby increase one's earnings. Credit is best used to meet short-term working capital needs that exist for less than 12 months.

35. **(b)** Banks have to submit information to the RBI on income tax returns.
    Explanation: Banks have to submit information to the RBI on how much they are lending, to whom, at what interest rate, etc.

36. **(d)** Supervision by RBI
    Explanation: RBI supervises the functioning of formal sources of loan and sees that banks gives loans not just to profit making businesses and traders. Informal sector is not under the supervision of any body, as a result of which there is always a higher rate of interest as compared to the formal sector.

37. **(a)** Banks charge a lower rate of interest on loans than what they offer on deposits.
    Explanation: Banks charge a higher rate of interest on loans than what they offer on deposits.

38. **(b)** Digital transaction
    Explanation: Demonetisation refers to the withdrawal of currency from circulation. It encourages people for digital transactions. Digital transactions were promoted to reduce the requirement of cash for transactions. Digital transactions started by using the bank to bank transfer through the internet or mobile phones, cheques, ATM cards, credit cards, and point of sale (POS) swipe machines at shops.

39. **(d)**
    The Central government issues currency notes on behalf of the Reserve Bank of India.

Explanation: The Reserve Bank of India issues currency notes on behalf of the central government.

40. **(c)** To reduce the dependence on informal sources of credit
    Explanation: Most loans from informal lenders carry a very high interest rate and often cheat the borrowers and a little to increase their income. This also leads to the situation of the debt trap. In order to help the people of rural areas it necessary for banks and cooperatives to increase their lending particularly in rural areas.