AL-AMEEN OLYMPIAD 2024
CLASS-X

Full Marks: 100   Time: 3 hours

ENGLISH

Choose the correct option and fill the gap:

1. I_____ attend the meeting.

 (A) will   (B) will be   (C) shall   (D) shall be

2. It is time, we _____ to bed.

 (A) went   (B) sit   (C) go   (D) sleep

3. A 'story writing' should comprise of :

i. Title, Moral   ii. Title, Moral   iii. Body   iv. Title

 (A) i & ii   (B) ii & iii   (C) i & iii   (D) iii & iv

4. The Byline of a newspaper report comprises of:

 (A) Staff Reporter, Guwahati, December 4.

 (B) Guwahati, December 4. By Raj.

 (C) Staff Reporter, December 4, Guwahati.

 (D) December 4, Guwahati, By Raj.

5. Choose the correct use of "take heart":

 (A) Take heart, things will be good soon.

 (B) She slapped the boy, and he took heart.

 (C) Take heart, all your lessons.

 (D) I take heart when parents scold me.

6. Choose the correct meaning of "fall out":

 (A) Collapse   (B) Slip down   (C) Fight   (D) Kill

7. Choose the example of a Compound Sentence:-

 (A) The news report included various accounts from bystanders.

 (B) This house is too expensive, and that house is too small.

 (C) Terry was late for the bus.

 (D) After I finish my work, I will meet my friend.

8. The acronym 'FANBOYS' is used in Compound sentences because:

 (A) Compound sentences have multiple clauses.

(B) The independent clauses are joined by "Free And Not Beyond Other Yielding Systems" (FANBOYS)

(C) Coordinate conjunctions are required to join the independent clauses in compound sentences.

(D) None of the above.

9. The color of the curtains in my living room has_____.

(A) faded on   (B) faded in   (C) faded of   (D) faded away.

10. The horrible weather_____me_____

(A) Gets, down   (B) works, down   (C) puts, down   (D) breaks, down

11. In direct speech, when the reporting verb is in the past tense and the verb of the reported speech is in the past tense, then the verb in indirect speech will be:

       (A) In past tense.   (B) In past continuous tense.

       (C) In past perfect tense.   (D) In past perfect continuous tense.

12) While changing narration, which of the following is correct.

              (i) The form of sentences do not change

              (ii) The verb remains same

              (iii) Change in pronouns is impossible

(A) (i) and (ii) are true (iii) is false   (B) (ii) and (iii) are true (i) is false

(C) (i) and (iii) are true (ii) is false   (D) (i) , (ii) , and (iii) are false

13. I said to him, "Why are you working so hard?" (Choose correct Indirect Speech)

       (A) I asked him why he was working so hard.

       (B) I asked him why he working so hard.

       (C) I asked him why had he been working so hard.

       (D) I asked him why he had been working so hard.

14. The captain said to me, "Bravo! You have played well." (Choose correct Indirect Speech)

       (A) The captain said to me that I have played well.

       (B) The captain applauded me, saying that I have played well.

       (C) The captain instructed me that I had played well.

       (D) The captain exclaimed with delight that I had played well.

15. The teacher asked Ram where he was going. (Choose correct Direct Speech)

(A) The teacher asked Ram, "Where he was going?"

(B) The teacher said to Ram, "Where are you going?"

(C) The teacher told Ram, "Where is you going?"

(D) The teacher questioned Ram where he was going.

Determiners

16. Can you lend _____ money?

    (A) any   (B) little   (C) some   (D) the

17. 'That' is an example of-

    (A) Possessive determiners   (B) Quantifiers determiners

    (C) Distributive determiners   (D) Demonstrative determiners

Read the following text.

(1) Reduction in green areas has caused various environmental problems. People squeezed between concrete structures are looking for various ways to meet their longing for green. One of the ways to do so, is vertical gardens and green walls. Vertical gardening is a unique method of Gardening where plants are grown in a vertical position or upward, rather than in the traditional method of planting them on the ground.

(2) The purpose of vertical gardens and green walls, which arises from the studies of different disciplines (landscape architects, architects, engineers, etc.), is to close the cold image of concrete and increase the visual value. In these systems, nature and structures are integrated, and thus, urban areas and the desired environment have become intertwined.

(3) Vertical garden case studies often show that, though functionality should be in the foreground, when vertical gardens are planned, they are generally made as aesthetic elements in the city's underpasses and city squares, and decorative elements in residences, without seeking functionality.

(4) Experts support that the visual quality and evaluation of landscape architecture is determined based on the satisfaction of the users. Hence, a survey questionnaire was prepared for residents of varied age groups from of a metropolitan city. The given Table 1, displays these responses:

(5) The study acknowledged that vertical gardening has the potential to transform urban spaces into green, sustainable areas, and further research should explore the impact of vertical gardening on the environment and human well-being.

Answer the following questions, based on the passage above

18: Select the option that correctly displays what 'intertwined' signifies. (Reference-Paragraph 2)

(A) (i), (iv) and (v)
(B) Only (ii)
(C) Only (iii)
(D) (ii) and (v)
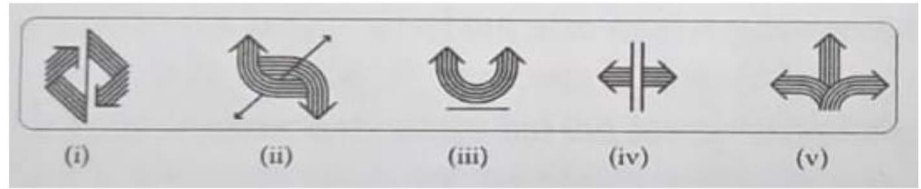
19. Vertical gardening is <u>a unique</u> method of gardening.

(A) an indefinite   (B) an exclusive   (C) a combined   (D) a standard

20. Which of the following is the main takeaway from the study mentioned in the passage?

(A) Vertical gardening has minimal impact on the environment or human well-being.

(B) Vertical gardening is a sustainable practice that can transform urban spaces into green areas

(C) The impact of vertical gardening on the environment and human well-being has already been thoroughly explored.

(D) The study needs to include experts from horticultural firms to offer any recommendations for further research.

Read the following text carefully and answer the questions that follow

i) As a high school student, studying poetry can be a rollercoaster ride. This journey is punctuated by moments of profound appreciation for simpler pieces and intermittent frustration with more complex works. Let's be real here - some poems are just plain confusing and no amount of re-reading seems to help decipher the intended meaning. The puzzlement that results from such instances can be both vexing and demotivating. If solving a riddle is what was intended, then playing Sudoku is a better option. One is led to ponder if obscurity was the goal.

ii) Conversely, some pieces resonate with the reader's soul. Stirring feelings of warmth, happiness and connection to the world. Often, these compositions centre on themes that are universally understood, such as love, nature, or faith. Being able to actually understand what the poet is trying to say can feel like a little victory and is a welcome relief after grappling with more perplexing poetry.

iii) Then there are poems that are emotionally charged; the ones that make the reader curl up in a ball and cry or jump up and down with joy. One is left in awe

of the poet's ability to convey emotion through words. Let's not forget the downright weird poems. These are the ones that defy categorization and leave the reader to their own devices in attempting to interpret meaning. The author's use of figurative language and unconventional imagery can create a sense of bewilderment that is either intriguing or off-putting. Regardless, the reader can appreciate the uniqueness of the work.

iv) Despite the wide range of emotions and reactions that come with studying poetry, it can be a rewarding pursuit. Not only does reading poetry allow one to appreciate the artistic beauty of the written word but also enables one to develop crucial critical thinking and analytical skills. The process of unlocking a poem's meaning can feel like cracking a code or solving a puzzle but the sense of accomplishment derived from mastering a challenging piece can be deeply gratifying. Finally, impressing an English teacher with a well-analysed poem can be a source of pride and validation.

v) Overall, studying poetry is like a box of mixed chocolates, you never know what you're going to get. But whether it's complex, emotional, simple, or just downright weird, there's always something to be gained from the experience. So, let's applaud all the poets out there, for making us laugh, cry, scratch our heads, and occasionally feel like a genius.

**21. Which of the following statements best describes the author's attitude towards studying poetry?**
 (A) Finds poetry to be a frustrating and meaningless endeavour.
 (B) Believes that the emotional rollercoaster of studying poetry is not worth the effort.
 (C) Recognizes the challenges of studying poetry but also acknowledges the rewards it offers.
 (D) Feels that poetry is too obscure and abstract for the average person to appreciate.

22. The author's use of vivid imagery in the paragraph (3), such as "curl up in a ball and cry" and "jump up and down with joy", greatly affects the reader because

(A) Emotionally challenging	(B) Physically challenging
(C) Mentally exhausting	(D) Mentally relaxing

23. The message conveyed by the writer regarding the experience of reading poetry is-

(A) Only those with natural talent for poetry should engage with it.

(B) Persistence makes studying poetry a rewarding pursuit.

(C) Study of poetry is guaranteed to impress others.

(D) The efforts of studying poetry is inversely proposal to the reward.

24. Find out the correct meaning of the underlined word.

(A) Heartfelt   (B) Dangerous   (C) Superficial   (D) Mild

25. Which of the following statements best describes the author's attitude towards studying poetry?

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SOCIAL SCIENCE

26. Regarding the environmental crisis of Sahara desert, which of the following conference was held

(A) Nairobi, 1977

(B) Montreal Protocol

(C) Earth Summit (Brazil)

(D)World Summit on Sustainable Development

27. The figure given below, shows the continents as one landmass approx 300 millions years ago. It was based on _____ and was proposed by_____.
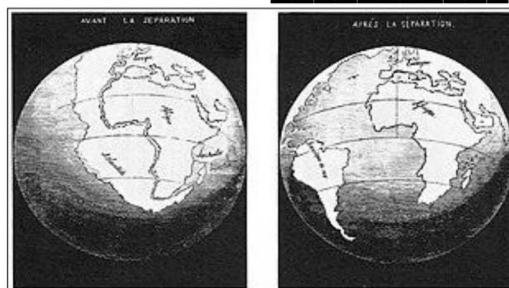
(A) Giant Impact Theory, Reginald Daly

(B) Continental Drift Theory, Alfred Wegener

(C) Big Bang Theory, Alexander Friedmann

(D) Nebular Theory, Immanuel Kant

28. According Geoffrey Crowther, anything that is generally acceptable as a medium of exchange is money. Based on this definition, select the option/options which is/are not a characteristics of money?

I. Money must have transferability.   II. Money must have liquidity.

III. Money must be heterogeneous.   IV. Money must have stability of value.

(A) Only I   (B) Only I & II   (C) Only I, II & III   (D) Only III

29. **The International Court of Justice(Netherlands) is one of the UN body responsible for maintaining international equality and justice. Who is the present President of ICJ ?**

     (A) Nawaf Salam, Lebanon   (B) Julia Sebutinde, Uganda

     (C) Peter Tomka, Slovakia   (D) XUE Hanquin, China

30. **Statement I-** Article 356 of the Indian Constitution complies with the Federal Structure of India.

   Statement II- Article 1 of the Indian Constitution mentions India as 'Union of States'.

   (A) Only I is correct   (B) Only II is correct

   (C) Both are correct   (D) Both are incorrect

31. **During Swadeshi movement, who quoted "Boycotting means patriotism and the essence of patriotism is the non-cooperation with the British in all respects?**

     (A) Surendranath Banerjee   (B) Rabindranath Tagore

     (C) Krishna Kumar Mitra   (D)Aurobindo Ghose

32. **On 12ᵗʰ December (1911), Bengal was reunited as per the Royal Proclamation of Delhi. Which of the option given below is one of the result of this proclamation?**

(A) The Government of India Act, 1919 was passed.

(B) The capital of India was shifted from Calcutta to Delhi.

(C) The title of Governor General of India was changed to the Viceroy of India.

(D) The Capital of Assam was shifted to Dhaka.

33. **Non- Cooperation movement was the result of culmination of various factors/causes. From the alternatives given below, select the appropriate option :-**

       I.   Jallianwala Bagh Massacre, 1919

       II.   Partition of Bengal,1905

       III.   Rowlatt Act, 1919

       IV.   Chauri –Chaura incident, 1922

  (A) I, II and II   (B) I and III only   (C) I and III only   (D) III and IV

34. **Assertion-** Rowlatt Act, was passed in 1919 under the chairmanship of Justice Sydney Rowlatt.

Reasoning- It was an extension of war time policies which provided that no Indians could be imprisoned by the government without trial & conviction in the Court of law.

    (A) Only Assertion is correct and Reasoning is not the correct explanation

    (B) Assertion is wrong but Reasoning is correct

    (C) Both are correct and Reasoning is the correct explanation.

    (D) Both are wrong.

35. **The slogan of Azad Hind Fauz led by Netaji Subhas Chandra Bose was?**

    (A) Delhi Chalo   (B) Jai Hind   (C) Inquilab Zindabad   (D) Vande Mataram

36. **From the options given below select the sculptures which were recovered from the Indus Valley Civilization:-**
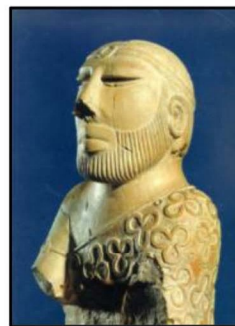
    Fig- I   Fig- II   Fig-III   Fig-IV

(A) Only I & IV   (B) Only II & IV   (C) I, II & III   (D) All of the above

37. **What is the traditional dance of Bodo community (Assam)?**

    (A) Pharkanti   (B) Bagurumba   (C) Bihu dance   (D) Tiwa dance

38. **_____ is the most important festival of Nagaland holding international importance.**

    (A) Bihu   (B) Hornbill   (C) Shirui Lily   (D) Chapchur Kut

39. **In Assam, art & paintings started flourishing during the 17th century including famous paintings like Geet Govinda, Hastibidyarnava, Kumor Haran etc. which were drawn on Sanchipat. What is Sanchipat?**

    (A) Rock wall   (B) Leaves of Sanchi tree

    (C) Bamboo paper   (D) Bark of Sanchi tree

40. **Match the following and choose the correct option:**

    I. Kathakali   i. Assam

    II. Satriya   ii. Kerala

    III. Bharatnatyam   iii. Odisha

    IV. Odissi   iv. Tamil Nadu

(A) I-ii, II-i, III-iv, IV-iii   (B) I-ii, II- iii, III- iv, IV-i

(C) I-iii, II-i,III- ii, IV-iv   (D) I-i, II-iv, III- ii, IV-iii

41. **Jonaki was the mouthpiece of which sabha?**

   (A) Jorhat Sabha   (B) Asomiya Bhasa Unnati Sadhini Sabha

   (C) Assam Chitra Sanmilan   (D) Ahom Sabha

42. **Who is the present Chairman of NITI Aayog?**

   (A) Nirmala Sitaraman   (B) Amit Shah

   (C) Suman Bery   (D) Narendra Modi

43. **Name the largest country of the world.**

   (A) China   (B) Canada   (C) Russia   (D) United States of America

44. **Assertion-** A large portion of lithosphere (90 %) is confined to Northern Hemisphere.

   Assertion- Due to the above fact, almost 90 % of the population lives in the Northern Hemisphere.

   (A) Assertion is correct but Reason is wrong

   (B) Assertion is wrong but Reason is correct

   (C) Both are correct and Reason is the correct explanation

   (D) Both are incorrect.

45. **According to 2011 census, the population of Assam was:-**

   (A) 3 Crore   (B) 3.12 Crore   (C) 312 Crore   (D) 31.2 Crore

46. **Select the appropriate option after carefully examining the statements:**

   I.   The first meeting of the Constituent Assembly was held on 9th December, 1946.

   II.   Alladi Krishnaswami Iyer was not a member of the Drafting Committee.

   III.   The Government of India Act, 1935 introduced limited parliamentary form of government in pre-independence India.

   Which of the following statement/statements is/are not correct?

   (A) Only I   (B) Only II   (C) Only III   (D) Only I & III

47. **The headquarters of International Federation of Football Association (FIFA) is located in:-**

   (A) Zurich   (B) Brussels   (C) London   (D) Geneva

48. **When was the first bank of Assam i.e Gauhati Bank set up?**

   (A) 1926   (B) 1935   (C) 1770   (D) 1947

49. **What is the rank of India in the Human Development Index Report 2023-24?**

   (A) 110   (B) 134   (C) 50   (D) 17

50. **On which day is the World Environment Day observed?**

   (A) 5th July   (B) 25th June   (C) 15th June   (D) 5th June

51. Let $[x]$= greatest integer less than or equal to x and $]x[$ = smallest integer greater than or equal to x, where x is any real number.

Let $[-7.4] = a$ and $]5[= b$. Then,

(A) $a + b = -2$ (B) $a + b = -3$

(C) $a - b = -14$ (D) $a - b = 2$

52. In a meeting of 45 people at Al-Ameen Academy, there are 40 people who know one another and the remaining know no-one. People who know one another only hug, whereas those who do not know each other, only shake hands. How many handshakes occur in the meeting?

(A) 225 (B) 200 (C) 210 (D) 220

53. If happening of $A \Rightarrow$ happening of B. Then, which of the following is correct?

(A) not happening of $A \Rightarrow$ Not happening of B

(B) not happening of $B \Rightarrow$ Not happening of A

(C) not happening of B dose not have any impact on the happening of A

(D) None of the above.

54. If $x = a\ sec\theta cos\theta, y = b\ sec\theta sin\theta$ and $\frac{1}{z} tan\theta = \frac{1}{c}$

Then $\frac{x^2}{a^2} + \frac{y^2}{b^2}$ $is\ equal\ to$,

(A) $\frac{z^2}{c^2}$ (B) $1 + \frac{z^2}{c^2}$ (C) $1 - \frac{z^2}{c^2}$ (D) $\frac{z^2}{c^2} - 1$

55. $\left| P\left(P\left(P(P(\emptyset)) \right) \right) \right| =?$

(A) 16 (B) 8 (C) 32 (D) 0

56. No. of digits in 2^{25} $is -$

(A) 5 (B) 6 (C) 7 (D) 8

57. Consider the two statements-

(i) If $a > 0$ and $a \neq 1, then$ $\log_a x_1 = \log_a x_2$ implies $x_1 = x_2$. The converse of it is not true.

(ii) If $0 < x < 1$ and $0 < a < 1, then$ $\log_a x > 0$

(A) both (i) and (ii) are true. (B) (i) is false but (ii) is true.

(C) (i) is true but (ii) is false. (D) Both (i) and (ii) are false.

58. If p divides a^2, *then p divides a*; where a is a positive integer. This statement is true if-

    (A) p is any number but prime.   (B) p must be prime

    (C) p can be any real number.   (D) $p > 0 \ but \ p \neq 10$

59. The 9th term of an AP is 449 and 449th term is 9. The term which is equal to 0 is-

    (A) 456th (B) 457th (C) 458th (D) 459th

60. Let $y = \sin x$. Then which of the following is true?

    (A) $y \geq 0 \ is \ \left[0, \frac{\pi}{2}\right]$

    (B) $y < 0 \ in \ \left(0, \frac{\pi}{2}\right)$

    (C) $y \ is \ constant \ in \ (0, \frac{3\pi}{2}]$

    (D) There exists a point c in $(0, \frac{\pi}{2})$ such that, y=0 at c.

61. Smallest even number is-

(A) 0   (B) 2   (C) It does not exist.   (D) None of the above.

62. If
$|x - \delta| < \epsilon \ where \ \delta \ and \ \epsilon \ are \ positive \ numbers \ less \ than \ 1, then -$

    (A) $\epsilon - \delta < x < \epsilon + \delta$ (B) $\delta - \epsilon < x < \epsilon + \delta$

    (C) $x > \epsilon + \delta$ (D) $x < \epsilon - \delta$

63. In an experiment of throwing a dice, the probabilities of getting a number less than 4, given that even number occurred already, is

    (A) $\frac{1}{3}$ (B) $\frac{2}{3}$ (C) $\frac{1}{6}$ (D) 1

64. Let a, b, c, d$\in R$. Let
$A = \{a, b, c\} \ and \ B = \{a, b, c, d\} \ be \ two \ arbitrary \ sets$. Then which of the following is correct?

 (A) maximum of $A >$ maximum of B   (B) maximum of $A \leq$ maximum of B

 (C) minimum of A< minimum of B   (D) None of the above

65. How many male are great?
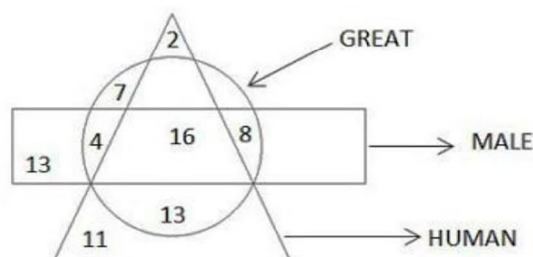
(A) 17   (B) 8   (C) 24   (D) 28

66. Choose the correct option.

$$\left(\left(Z - \{0\}\right) \cup N\right) \setminus Z) \cup N \quad is\ equal\ to -$$

(A) $\emptyset$ (B) N   (C) R   (D) $Z \setminus N$

67. The set of integers –

(A) is uncountable but finite.

(B) is countable and infinite

(C) is uncountable and finite

(D) Have the same cardinal number as that of any subset of natural numbers.

68. For any integer n, $Cosx = 0$ implies –

(A) $x = (2n + 1)\,{}^{\pi}/_{2}$

(B) $x = (2n - 1)\,{}^{\pi}/_{2}$

(C) $x = n\pi$

(D) $x = (n + 1)\,{}^{\pi}/_{2}$

69. Let $A = (a, b]$ and $B = [a, b]$, then-

(A) $A \subsetneqq B$ (B) $B \subseteq A$ (C) $B \subsetneqq A$ (D) $A \cap B = \{a, b\}$

70. Consider the statement given below-

A: If you live in Goa, then you have party clothes.

Now, consider the following two statements-

A_1:If you donot have party clothes, then you do not live in Goa.

A_2:If you have party clothes, then you live in Goa.

Now, choose the correct option-

(A) A_1 and A_2 are converse statements of A.

(B) A_1 and A_2 are contrapostive statements of A.

(C) A_1 and A_2 are converse and constrapostive statements of A, respectively.

(D) A_1 and A_2 are contrapostive and converse statements of A, respectively.

71. $\pi - \dfrac{22}{7}$ is equal to-

(A) 0

(B) 14

(C) A rational number

(D) An irrational number less than zero

72. A boy can escape through a window of size atleast 4 feet. The 28 windows of a house are of sizes 2, 3, 4 or 5 feet and their numbers are proportional to their sizes. The no. of windows available for the boy to escape through is-

(A) a divisor of 54   (B) 10   (C) 18   (D) a multiple of 7

73. The perimeter of ABCDE from the figure, where, BA and DE are perpendiculars to AE, is-
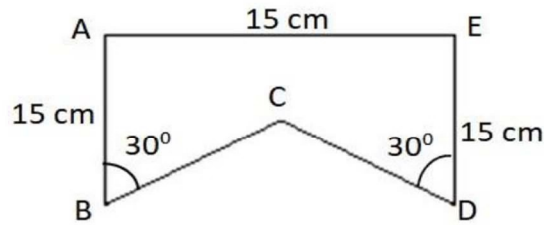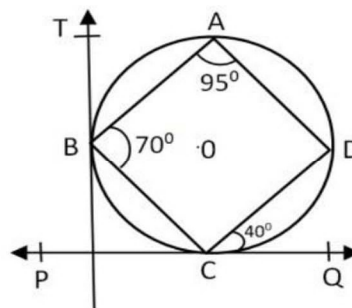

      (A) 70 cm   (B) 65 cm   (C) 75 cm   (D) 85 cm

74. For any prime number bigger than 3, $p^2 + 2$ is $a -$

      (A) Prime number   (B) Composite number

      (C) $\gcd(p, p^2 + 2) > 2$ (D) None of the above

75. In the figure TBM and PCQ are two tangents to the circle.

Let $\angle ADB = x, \angle ABC = 70^0, \angle DCQ = 40^0, \angle BAD = 95^0$

Then $\angle TBA =?$

  (A) 55^0 (B) 65^0 (C) 35^0 (D) 75^0

<div align="center">

GENERAL SCIENCE

</div>

76. Arrange the following reflex action in order of occurrence.

A) Sensory neuron activation   B) Response by effector muscles

C) Signal reaches spinal cord.   D) Relay to motor neuron

a) i> iii > iv > ii   b) iv > iii > ii >l   c) iii > ii >i> iv   d) i> iv > iii > ii

77. Time taken by sunlight to pass through a glass slab of thickness 5 mm and refractive index 1.5 is

   a)$\left(\frac{5}{3}\right) \times 10^{-8}s$ b) $\left(\frac{5}{2}\right) \times 10^{11}s$ c)$\left(\frac{5}{3}\right) \times 10^{-11}s$ d) $\left(\frac{5}{2}\right) \times 10^{-8}s$
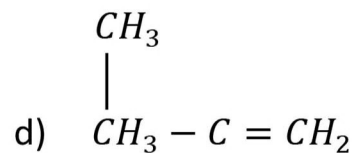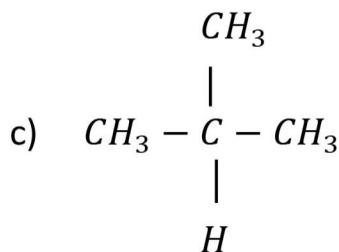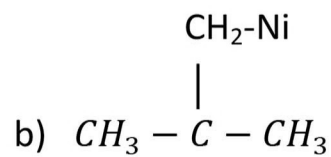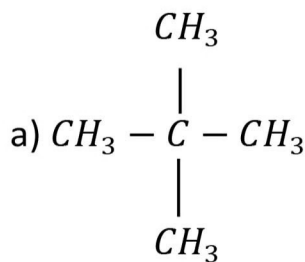
78. Match the column 1 with column 2. Here m= magnification

Column 1	Column 2
A. m= −2	i. convex mirror
B. m = -$\frac{1}{2}$	ii. concave mirror
C. m = +2	iii. real image
D. m= +$\frac{1}{2}$	iv. virtual image

79. What is the correct structure of 2, 6 - Dimethyl-dee-4 ene?

(a) (b) (c) (d)
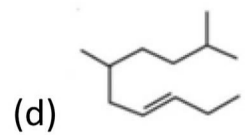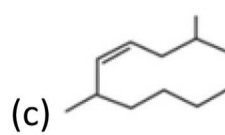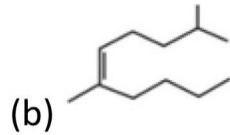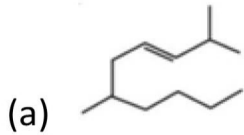
80. The reaction of H_2/N_i with

$$CH_3-\overset{\overset{\displaystyle CH_3}{|}}{C}=CH_2$$

a) $CH_3-\overset{\overset{\displaystyle CH_3}{|}}{\underset{\underset{\displaystyle CH_3}{|}}{C}}-CH_3$

b) $CH_3-\overset{\overset{\displaystyle CH_2\text{-Ni}}{|}}{C}-CH_3$

c) $CH_3-\overset{\overset{\displaystyle CH_3}{|}}{\underset{\underset{\displaystyle H}{|}}{C}}-CH_3$

d) $CH_3-\overset{\overset{\displaystyle CH_3}{|}}{C}=CH_2$

81. The enzyme enterokinasehelp in the conversion of

 a) trypsinogen into trypsin   b) Caseinogen into casein

 c) pepsinogen into pepsin   d) Protein into polypeptides

82. A person with unknown blood group under ABO system, has suffered much blood loss in an accident and needs immediate blood transfusion. His one friend who has a valid certificate of his own blood type, offers for blood donation without delay. What would have been the type of blood group of the donor friend?

a) Type AB   b) Type O   c) Type A   d) Type B

83. Match Column i with column ii

Column -i	Column –ii
A) hepatic portal vein	p) Hearts blood system
B) Pulmonary trunk	q) returns blood to the heart from lower limits
C) coronary circulation	r) carries blood to the liver
D) inferior vena cava	s) heads to lungs

a) A – (r), B-(s) , C- (p), D- (q)   b) A- (r) , B-(q), C-(s) , D - (p)

c) A- (s) , B- (p) , C(r), D- (q)   d) A-(s), B- (q), C(p) , D-(r)

84. The hepatic portal _____ carries blood from _____ to liver before it is delivered to the _____.

	A	B	C	D
a)	i& iii	i& iv	i& ii	iii & iv
b)	i& iv	ii & iii	ii & iv	ii & iii
c)	iii & iv	ii & iv	ii & iii	i& iv
d)	ii & iii	ii & iii	ii & iv	i& iv

a) vein, pancreas, pulmonary   b) artery, intestine, systemic

c) vein, intestine, systemic   d) artery, panacreas, pulmonary

85. Our excretory system has

a) 2 million nephrons   b) 1 million nephrons

c) 3 million nephrons   d) 1.5 million nephrons

86. Given below are two statements:

Statement 1: The cerebral hemisphere are connected by nerve tract known as corpus callosum

Statement 2: The brain steam consists of the medulla oblongata pons and cerebrum.

a) Both statement 1 and statement 2 are incorrect.

b) Statement 1 is correct but statement 2 is incorrect.

c) Statement 1 is incorrect but statement 2 is correct.

d) Both statement 1 and statement 2 are correct.

87. Which part of the brain is responsible for thermoregulation?

a) medulla oblongata   b) cerebrum   c) Hypothalmus   d) corpus callosum

88. Which of the following hormones is responsible for both the milk ejection reflex and the foetal ejection reflex?
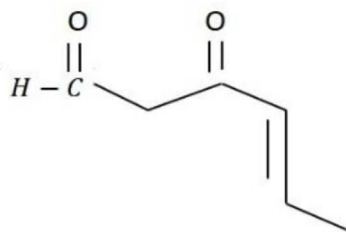
a) Estrogen   b) prolactin   c) oxytocin   d) Relaxin

89. Write the IUPAC name:

a) 3- ket -2 methylhex-4-enal   b) 5- formylhex -2-ene-3-one

c) 5- methyl – 4- oxohex-2-ene-5-al   d) 3-keto-2-methyl hex-4-enal

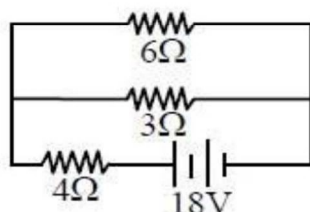## 90. If there are two bulbs of (40 w, 200 v) and (100 w, 200 v), then the correct relation for their resistance is

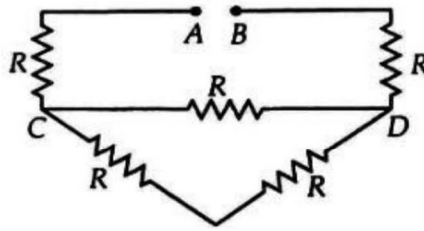a) $R_{40} < R_{100}$ b) $R_{40} > R_{100}$ c) $R_{40} = R_{100}$ d) no relation can be predicted.

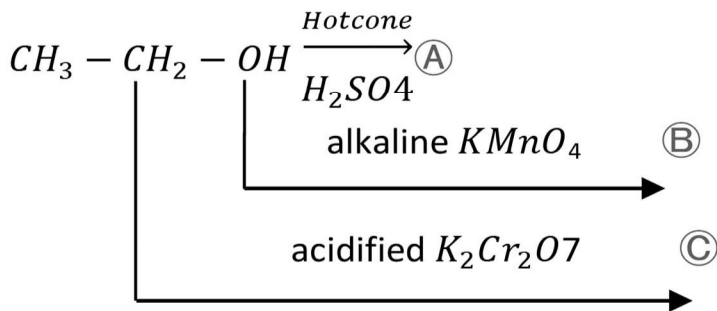## 91. The total power dissipated in watts in the circuit shown below is

(A) 16 W   (B) 40 W   (C) 54 W   (D) 4W

**92. What is the equivalent resistance between A and B in the figure below. If R=3Ω**

a)9 Ω   b) 12 Ω   c)15 Ω   d) None of these

93. Complete the reaction

$$CH_3 - CH_2 - OH \xrightarrow[H_2SO4]{Hotcone} \text{Ⓐ}$$

alkaline $KMnO_4$ Ⓑ

acidified K_2Cr_2O7 Ⓒ

a) A = $CH_3 - CH_2 - COOH$,   B= $CH_2 = CH_2$,   C= $CH_3 - COOH$

b) A= $CH_2 = CH_2$,   B= $CH_3 - COOH$,   C=$CH_3 - COOH$

c) A= $CH_2 = CH_2$ B= $CH_3 - CH_2 - COOH$ C= $CH_3 - CH_2 - COOH$

d) $CH_2 - COOH$,   B= $CH_3 - COOH$,   C = $CH_3 - COOH$

94. Complete the reaction:

$$CH_3 - CH_2 - OH \xrightarrow{coneH_2SO_4} (A) \xrightarrow{H_2/Ni} (B) \xrightarrow[1eqv]{Cl_2/hu} (C)$$
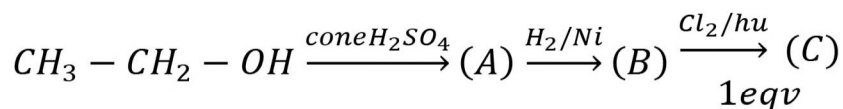
a) A = $CH_3 - CH_3$ B= $CH_3 - CH_2 - CH_3$ C= $CH_3 - CH_2 - Cl$

b) A = $CH_2 = CH_2$ B = $CH_3 - CH_2 - CH_3$ C= $CH_3 - CH_2 - Cl$

c) A= $CH_2 = CH_2$ B = $CH_3 - CH_3$ C= $CH_3 - CH_2 - Cl$

d) A = $CH_3 - CH_2 - CH_3$ B = $CH_3 - CH_2 - Ni$ C= $CH_3 - CH_2 - Cl$

95. A factory is releasing untreated water containing harmful chemicals into a ueasby river. What is the most likely impact on the ecosystem.

    i) increase in oxygen levels.

    ii) Death of aquatic organism.

    iii) Increase Biochemical oxygen demand

    iv) Increased fish population.

    a) (i) and (iv) are correct   b) (i) ,(ii), (iii) are correct.

    c) (ii) and (iii) are correct.   d) (iii) and (iv) are correct.

96. identify the correct statements regading soil erosion.

    i) Deforestation increases soil erosion.

    ii) Roots of plants prevent soil erosion.

iii) overgrazing by animals helps in soil conservation..

iv) terrace farming reduces soil erosion.

(A) i, ii and iv (B) i and ii (C) ii and iii (D) i, ii and iii

97. A 45 year old man experiences constant fatique weight gain, sensitivity to cold and puffiness in his face, blood tests reveal elevated TSH & low T_3 & T_4 levels.

What is the significance of elevated TSH in this case?

 a) The pituitary gland is compensating for low thyroid hormone levels.

 b) TSH is being overpoduced due to an overactive thyroid.

 c) TSH levels rise to suppress thyroid hormone secretion.

 d) It indications damage to the hypothalmus.

98. In a laboratory test, a persons urine conatins high levels of albumin. What could be the reason?
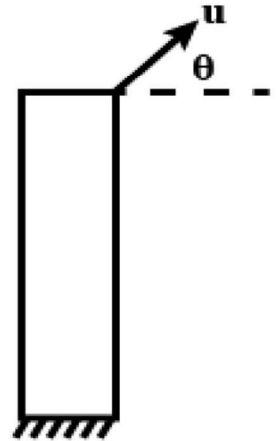
 a) Dehydration   b) Damage to the glomerulus.

 c) Blockage of the ureter   d) Excess reabsorption in the loop of Henle

99. A ball is projected from top of the table with initial speed u at an angle of inclination θ, motion of the image of ball with respect to ball is?
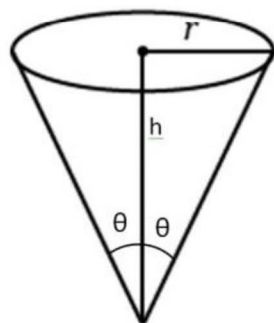

a) Must be projectile

b) Must be a straight line & vertical

c) Must be a straight line & horizontal

d) Must be straight line, depends upon the value of θ

100. A fish looking up through the water sees outside world continued in a circular horizon. if the refractive index of water is $\frac{4}{3}$ and the fish is 12 cm below the surface. The radius (r) of the circle is

 $(A)\ \dfrac{16}{\sqrt{7}}$ $(B)\ \dfrac{26}{\sqrt{7}}$ $(C)\ \dfrac{36}{\sqrt{7}}$ $(D)\ \dfrac{46}{7}$

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