Vivekananda World School
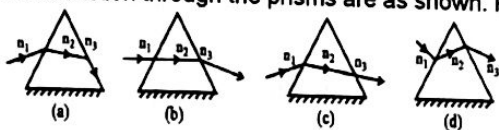## Bright Future Scholarship Program
Academic Session (2023-24)

Grade - 8th

General Instructions:
- There are 3 Sections
- Section –A Contains 15 questions in Science, Section – B contains 20 questions in English , Section –C contains 15 questions in Maths.
- All questions are Compulsory
- There will be no negative marking

SECTION A (Science)

1. An object is allowed to fall from a height of 200 m. If time taken for first half of fall is t_1 and for remaining half is t_2. The ratio of t_1 and t_2.
   (a) $1/\sqrt{2}-1$
   (b) $\sqrt{2}-1$
   (c) 1
   (d) 5/2

2. A body is moving with a velocity of 36 km/hr on a rough horizontal surface of coefficient of friction 0.6. If the acceleration due to gravity is $10 m/s^2$, Find the minimum distance within which it can be stopped.
   (a) 20/3 m
   (b) 40/3 m
   (c) 10/3 m
   (d) 25/3 m

3. With decrease of area of contact of the body, the frictional force acting between two surfaces
   (a) Increases
   (b) remains the same
   (c) decreases
   (d) becomes zero

4. Food cans are coated with tin and not with zinc because:
   (a) Zinc is costlier than tin
   (b) Zinc has a higher melting point than tin
   (c) Zinc is more reactive than tin
   (d) Zinc is less reactive than tin

5. Which of the following property is generally not shown by metals?
   (a) Electrical conduction
   (b) Sonorous in nature
   (c) Dullness
   (d) Ductility

6. The color of pH paper strip at the pH valued of 1, 7, 14 will be
   (a) Green, red and blue
   (b) Red, green and blue
   (c) Blue, green and red
   (d) Green, blue and red

7. Animals exhibiting external fertilization produce a large number of gametes. Justify with a reason from one's given below
   (a) The animals are small and want to produce more offspring.
   b) Food is available in plenty of water.
   c) To ensure a better chance of fertilization.
   d) Water promotes production of numerous gametes.

8. The common weedicide :
   (a) 2, 4-D ethyl ester
   (b) Diquat
   (c) Maneb
   (d) Triadimefon

9. Which is responsible for ripening of fruits ?
   (a) Ethylene gas
   (b) Nitrous oxide
   (c) Propylene
   (d) Sulphur oxide

10. The refraction through the prisms are as shown. Pick out the WRONG statement from the following. Path of the light ray in
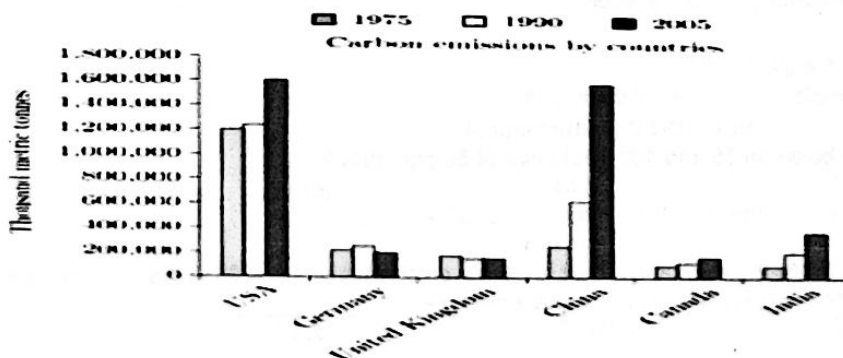

   (a) is correct if $n_2 > n_1$ and $n_2 > n_3$
   (b) is correct if $n_1 = n_2$ and $n_2 > n_3$
   (c) is correct if $n_2 < n_1$ and $n_2 = n_3$
   (d) is correct if $n_1 > n_2$ and $n_2 < n_3$

11. Which of the following gives the correct increasing order to acidic strengths?
    (a) Water < Acetic acid <Hydrochloric acid
    (b) Water < Hydrochloric acid <Acetic acid
    (c) Acetic acid < Water <Hydrochloric acid
    (d) Hydrochloric acid < Water <Acetic acid

12. The Government Agency responsible for purchasing grains from the farmer's safe storage and distribution is:
    (a) CBI
    (b) FBI
    (c) FCI
    (d) FDI

13. Project Tiger was launched on
    (a) 1 April 1973
    (b) 23 May 1973
    (c) 21 September 1973
    (d) 25 December 1973

14. Which of the following contains oxalic acid?
    (a) Sour milk
    (b) Tomato
    (c) Orange
    (d) Tamarind

15. A sound wave travels from east to west, in which direction do the particles of air move?
    (a) East-west
    (b) North-south
    (c) Up and down
    (d) None of these

SECTION B (English)

Read the passage and answer the questions that follow.

1. The chart given below provides information about the amount of carbon emissions in different countries during three different years (1975, 1990, and 2005).

2. The bar chart compares the emission of carbon dioxide into the atmosphere of six countries, including two of them coming from emerging nations, for three decades starting from 1975 until 2005.

3. As an overall assessment, it can clearly be seen that only Germany and United Kingdom managed to reduce the carbon emissions compared to the other countries.

4. USA, being the umber one polluter of all, emitted 1,200,000 thousand metric tonnes in 1975 and this count increased to 1,300,000 and 1,600,000 thousand metric tonnes in 1990 and 2005 respectively. In contrast, the carbon emissions of China was nearly 300,000 thousand metric tonnes in 1975 and it rose by nearly 100% in 1990 and surged dramatically to just below 1,600,000 thousand metric tonnes in 2005. In terms of the percentage increase. China was the largest contributor in carbon emissions of all.

5. The figures for Germany and the United Kingdom remained relatively stable throughout the period of time, and so were for Canada until 1990. The carbon dioxide emissions in India increased exponentially from around 100,000 in 1975 to just below 400,000 thousand metric tonnes in 2005.

Based on your understanding of the passage, answer the questions given below.

16. The data given in the graph compares the amount of emission of
(a) nitrogen   (b) carbon dioxide   (c) oxygen   (d) none of these

17. According to the passage, which country is the most polluter country?
(a) India   (b) China   (c) USA   (d) Germany

18. Which country has the lowest emission of CO2 in the graph?
(a) Germany   (b) United Kingdom   (c) Canada   (d) India

19. Which country has observed a dramatic rise over the years in CO2 emission?
(a) India   (b) China   (c) USA   (d) Germany

20. Which of the following countries reported gradual growth in reduction of global CO2 emission?
(a) Germany and India   (b) USA and China   (c) The United Kingdom and USA   (d) Germany and The United Kingdom

Directions: (Q, No. 21-22) Choose the correct meaning of the following idioms.

21. An apple of discord
a) Cause of wealth   b) Cause of illness   c) Cause of happiness   d) Cause of quarrel

22. At sixes and sevens
a) In perfect order   b) Very happy   c) In disorder   d) Very sad

Direction: (Q23-24) Identify the kind of the Adverb in Bold.

23. Sarah drove **cautiously** as the road was steep.
a) Adverb of Time   b) Adverb of Manner   c) Adverb of Reason   d) Adverb of Degree

24. The lady wore traditional clothes **occasionally**.
a) Adverb of Time   b) Adverb of Manner   c) Adverb of Frequency   d) Adverb of Degree

Direction: (Q25-27) Choose the correct option for the following questions.

25. My friend stood _____ me during my misfortune.
a) In   b) To   c) By   d) With

26. He took off his coat _____ he entered the house.
a) As well as   b) As soon as   c) Even   d) But also

27. Ahmad is failing three of his courses. _____ , people consider him one of the most gifted student in the school.
a) Because of this   b) In spite of this   c) because of which   d) To Conclude

Direction: (Q:28-29) What are the types of the bold clauses in the sentence?

28. Do not accept rides from strangers **who look suspicious** no matter **what they say** to convince you.
a) Adjective clause, Noun clause   b) Adjective clause, Adverb clause
c) Noun clause, Adjective clause   d) Adverb clause, Noun clause

29. Yesterday, when I _____ to see my friend, I _____ his locket.
(a) gone, found   (b) went, found   (c) went, finding   (d) had gone, had find

Direction: What are the types of the bold clauses in the sentence?

30Q. La Toya, **who is the sister of a famous singer**, refused to interact with the media **because she was not dressed in her best clothes**.
A. Noun clause, Adverb clause   B. Relative clause, Adjective clause
C. Adjective clause, Relative clause   D. Relative clause, Adverb clause

31. Antonym of ' Bogus'
a) Friendly   b) Actual   c) Regular   d) Practical

32. Synonym of 'Anticipate'
a) Gamble   b) Expect   c) Horrific   d) Mediate

33. Antonym of Plunge
A. Dive   B. Duck   C. Rise   D. Fall

34. Synonym of Lacuna
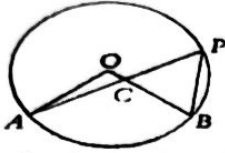A. Hiatus   B. Apathy   C. Misfortune   D. Languor

Direction: (35-36) Identify the kind of sentence.

35. When uncle Samuel comes to town, we all have a good time.
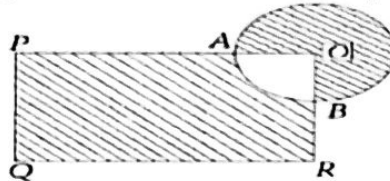a) Complex   b) Compound   c) Simple   d) All of the above

SECTION C (Mathematics)

36. How many composite numbers are there in between 50 and 100 (inclusive of 50 and 100) ?
(a) 39   (b) 40   (c) 41   (d) 42

37. If the median a, b, c, d and e (a < b < c < d < e) is k, then find the median of b/2, c/2 and d/2.
(a) 5k/3   (b) k   (c) k/2   (d) 3k/5

38. In a company, the average salary of male employees is Rs. 8200 and that of female employees is Rs. 7200. If the average salary per employees is Rs. 7900, then the percentage of female employees out of the total employees is _____.
(a) 30   (b) 40   (c) 20   (d) 25

39. The sum of five consecutive odd natural numbers is 65. Find the sum of the extreme numbers.
      (a) 26   (b) 30   (c) 24   (d) 32

40. Find the difference between the product of the smallest three-digit prime number with the greatest one-digit prime number and the product of the greatest two-digit prime number with the smallest one-digit prime number.
      (a) 513   (b) 619   (c) 82   (d) None of these

41. $(x^2 + 4)(x^2 - 4)(x^4 + 16) =$
      (a) $X^8 - 16$ (b) $x^4 - 16^2$ (c) $x^8 - 128$ (d) $x^8 - 256$

42. If $N = 9^9$, the N is divisible by how many positive perfect cubes?
      (a) 6   (b) 7   (c) 4   (d) 5

43. Twenty-two men can complete a piece of work in 17 days. They work for 2 days. How many more men should now be employed to complete the work in another 10 days?
      (a) 6   (b) 11   (c) 22   (d) 33

44. In the figure (not to scale), O is the center of the circle.

AP and BP are two chords. C is the point of intersection of AP and OB. If OAC = 30° and ∠PBC = 80°, then ∠AOB = _____.
      (a) 110°   (b) 100°   (c) 130°   (d) 120°

45. A, R, S and V together produce 392 pieces of an item in 6 hours. S is four times as efficient as A and is one third less efficient than V. R is half efficient as V. How many pieces would R produce if worked for 8 hours?
      (a) 88   (b) 96   (c) 104   (d) 112

46. In the figure given below, O is the centre of the circle and OPQR is a rectangle. A is a point on PO such that AO = 1/3 PO and B is the midpoint of OR. Find the area of the shaded region if PA = 8 cm and BR = 4 cm (use $\pi = 3.14$)

      (a) $132.68 \ cm^2$ (b) $121.12 \ cm^2$ (c) $108.56 \ cm$ (d) $116.44 \ cm^2$

47. The value of

$$1/7^2 - 3^2 + 1/13^2 - 3^2 + 1/19^2 - 3^2 + \ldots\ldots\ldots\ldots\ldots + 1/49^2 - 3^2 = ?$$

      (a) 1/16   (b) 3/52   (c) 1/26   (d) 3/26

48. The value of $(x - y)(x + y) + (y - z)(y + z) + (z - x)(z + x)$ is:

      (a) $x + y + z$ (b) $x^2 + y^2 + z^2$ (c) $xy + yz + zx$ (d) 0