INSTRUCTIONS:

1. Do not write anything on this test booklet.

2. Write your answers in the answer sheets provided to you.

3. There are six types of tests in this booklet. Instructions are given and explained by means of examples as to how to answer the questions. Read these instructions carefully and then answer accordingly.

4. Try to answer all the questions.

5. Answer each question as quickly as possible.

6. There is time limit for each test.

7. If you do not know the answer to a question, do not waste time on it, but proceed to the next question. If there is time in the end, try to answer the left out questions.

8. Do not skip over pages. Start answering the questions from the first page.

9. If you finish answering all the questions in a test within the given time limit, do not start answering the next test till the examiner asks you to start.
INSTRUCTIONS:

Each item in this test contains one word. Against each item are given five words in the brackets denoted by the letters A, B, C, D and E. Select the word from the five words and mark down your answer in the answer booklet.

EXAMPLE:

A B C D E

Large — (fat, tall, long, big, heavy)

In the above example which is the word that gives the same meaning as "large"? It is "big". The letter that denotes this word is D. So, the letter D is crossed as shown in the table below.

A B C Δ E

In a similar way, cross mark the letter D in question number 1 in your answer sheet.

EXAMPLE 2.

A B C D E

Sorrow — (talk, weep, misfortune, tears, agony)

Now, the word that is very near in meaning to "sorrow" is "agony". The letter that denotes this word is E. Therefore in your answer sheet, cross mark the letter E in question number 2:

Follow the same procedure for the other questions also while marking the answers in the sheet:

A B C D E

3. Hole — (crack, split, slit, aperture, gap)

4. Pure — (white, sacred, fate, God, clean)
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5. Stop —
   A B C D E
   (catch, impede, order, halt, disturb)

6. Relative —
   A B C D E
   (kith, friend, companion, neighbour, wellwisher)

7. Sign —
   A B C D E
   (stain, dot, symbol, line, mark)

8. Heaven —
   A B C D E
   (stir, defeat, scarcity, dark, deride)

9. Enmity —
   A B C D E
   (quarrel, kill, jealousy, hatred, opposite)

10. Search —
    A B C D E
    (wander, follow, investigate, discord, unworthy)

11. Row —
    A B C D E
    (long, straight, line, simple, batch)

12. Useless —
    A B C D E
    (unwanted, unserviceable, discard, unworthy, waste)

13. Help —
    A B C D E
    (support, generosity, gift, assistance, cooperation)

14. Joke —
    A B C D E
    (fun, grin, smile, insult, irony)

15. Cooperation —
    A B C D E
    (tolerance, association, unity, mutual help, mutual suggest)

16. Prepare —
    A B C D E
    (correct, get ready, straighten up, arrange, decorate)

17. Offer —
    A B C D E
    (give, serve, deliver, custom, reach)

18. Group —
    A B C D E
    (many, plenty, crowd, tradition, income)

19. Innumerable —
    A B C D E
    (all, many, too many, varied, long)

20. Short —
    A B C D E
    (small, stout, dwarf, undeveloped, brief)

21. Pair —
    A B C D E
    (partner, addition, two, twin, together)

22. Listen —
    A B C D E
    (hear, sound, be attentive, mark, shout)
25. Debate — (fight, criticize, argue, analyse, reason)

24. Saying — (speech, talk, open the mouth, inform, tell)

25. Put — (protect, save, safeguard, hide, keep)

26. Baby — (pet, infant, tiny, tender, small)

27. Quickly — (fast, hurry, immediate, soon, suddenly)

28. Knowledge — (understanding, intelligence, memory, wisdom, experience)

29. Lap — (powder, fold-together, wrap, hairdo, pinch)

30. Teach — (tell, propagate, recite, inform, make learn)

31. Anxiety — (haste, boredom, doubt, fear, restlessness)

32. Example — (request, instance, meeting, showing, exhibition)

(STOP HERE. DO NOT TURN THE PAGE. WAIT FOR FURTHER INSTRUCTIONS.)

BEST ANSWER TEST

INSTRUCTIONS: TIME: 8 Minutes

There are a few incomplete statements in this test (section). Each statement has four answers indicated by A, B, C, and D. Among the four answers given one is the best answer. You must find out which is the best answer.

EXAMPLE 1.

We use a knife because

A. it is hard,

B. it is easy to hold it.

C. it cuts things.

D. it is cheap (inexpensive).
In the above, what is the best reason for using a knife? It is because the knife cuts things. This is indicated by "C". Therefore mark 'X' in the row on the letter 'C' in the example 1 as shown.

A B X D

So cross mark the letter C in question no.1 in your answer sheet.

EXAMPLE 2.

Brass bangle is better than a bare wrist because

A. bangle is an ornament to wrist.
B. it is better to have nothing.
C. it is better to have something than nothing.
D. it is better to have plenty than little.

There are four answers to why a brass bangle is better than a bare wrist. Among them the best answer is 'it is better to have something than nothing'. This is indicated by the letter 'B'. So in your answer sheet against item "C" mark 'X' on 'B'.

Similarly answer the remaining questions.

The item or question number is printed in the answer sheet. While answering you must make sure to mark on the letters under that very question, and on the letter which you think indicates the best answer.

5. What should we do when we are ill?

A. We must stay on bed.
B. We must get the right treatment.
C. We must take some medicine.
D. We must run to a medical practitioner (doctor).
4. We send children to school, because
   A. they are to be prepared for future (life).
   B. they are too young for any employment.
   C. they love to study.
   D. they become mischievous if they stay at home.

5. The ball, if thrown up, falls down, because
   A. the air pushes it down.
   B. it has no resistance.
   C. the earth attracts all things.
   D. We can catch it easily.

6. Gold is costlier than silver, because
   A. it is heavier.
   B. it is harder.
   C. it is yellower.
   D. it is rarer.

7. Charcoal should not advice black colour, because
   A. Charcoal should not advice anyone.
   B. One who has black marks (blemishes) should not advice others.
   C. One who has blemishes must advice others.
   D. Black colour must not advice charcoal.

8. Little drops of water make a mighty ocean because
   A. collection of tiny drops of water will result in a pit.
   B. the raining of drops of water results in a pit.
   C. little things (affairs) result in a great success
   D. water goes into a pit in tiny drops.
9. If you find signs of an on-coming rain when you are about to start for the school, you
   A. stay at home.
   B. must go to the school and soon apply for leave and return.
   C. must start earlier to the school.
   D. must take an umbrella and go to the school.

10. Adding insult to injury means
   A. getting trouble after trouble.
   B. as if salt is put upon fire.
   C. putting out the burning flame.
   D. applying salt to the wound to heal it.

11. Children play, because
   A. they love to play.
   B. they need not earn any wages.
   C. play is their natural activity.
   D. they want to escape from the studies.

12. A stone sinks in water because
   A. it is hard.
   B. it is a heavy thing.
   C. it does not melt in water.
   D. it is heavier than water.

13. To avoid the railway accidents
   A. we must reduce the railway travel.
   B. railway officials must take precautionary measures.
   C. we must not run the trains fast.
   D. there must be more than one engine driver.
14. Carrying coal to Newcastle means
   A. doing a useless work.
   B. carrying rocks to the mountain (hill).
   C. doing useful work.
   D. that there is no need of rocks to the hill.

15. Keeping a dog in the house means that
   A. all children love dogs.
   B. dogs eat the same food that man eats.
   C. dogs love the company of man.
   D. dog is a lovely animal.

16. The railway lines are made of steel because
   A. it is a hard metal.
   B. it is heavy.
   C. it is a bright (shining) metal.
   D. it is easily available.

17. Alert your feet means
   A. take care of your feet from pain.
   B. to run away.
   C. to preach your feet.
   D. to move about leisurely (slowly).

18. Plague spreads because
   A. Plague is a demon.
   B. of the bite of the rats.
   C. it is a contagious (communicable) disease.
   D. of the biting of the infectious fleas.
19. Do not count chicken before the eggs hatch means
   A. haste saves time.
   B. counting will result in a waste.
   C. not to rely too much in the future.
   D. not to keep away from counting the chicken.

20. Distance lends enchantment to the eyes means that
   A. the hill looks beautiful from the distance.
   B. all things look beautiful from the distance.
   C. one must see things from a distance.
   D. If you see a hill from a close distance it looks beautiful.

21. Make hay while the sun shines means
   A. One should make heaps of hay when the sun shines.
   B. One should achieve ones objectives even if the fortune is not in favour.
   C. One should be making heaps of hay always.
   D. One should make use of the opportunity.

22. We use woolen clothes in winter, because
   A. woolen clothes are beautiful.
   B. cold wind does not pass through woolen clothes.
   C. wool is a bad conductor of heat.
   D. woolen clothes are thick.

(Stop here. DO NOT turn the page - wait for further instructions)
NUMBER SERIES

INSTRUCTIONS:

Study the following example:

EXAMPLE 1.

1, 5, 5, 7, 9, 11 ... (12, 15, 15, 14, 17)

In the above example six numbers are given on the left hand side. These numbers are related to each other in some order. Find out that order. After that, find out the next number which has that order. This number is one of the five numbers which are given in the bracket.

Now, in the above example each number is more by two than its preceding number. According to this rule, what number will follow next?

It will be "13".

The letter that denotes this number is "B". Therefore the letter "B" from among the letters A, B, C, D, E is crossed as shown below.

A X C D E

In a similar way, cross the letter 'B' from among the letters A, B, C, D, E against question 1 in your answer booklet.

EXAMPLE 2.

9/5, 8/5, 7/5, 6/5, 5/5, 4/5 ... (2/5, 1/5, 4/5, 6/5, 3/5)

Consider how the above six numbers are related to each other. Each number is "1/5" less than its previous number.
According to this rule, what number should follow next?

It is "3/5".

The letter that denotes this number is 'E'. Cross mark the letter "E" from among the letters A, B, C, D, E given in your answer booklet.

Similarly answer the other questions. While answering note the number of the question and cross mark only that letter which denotes the correct answer from among the letters given against the same number in your answer booklet.

Remember that the numbers in all the questions cannot be related in the same way.

A B C D E
3) 2, 4, 8, 16, 32, 64 - (128, 80, 120, 100, 96)

A B C D E
4) 100, 80, 70, 50, 40, 20 - (30, 60, 90, 10, 50)

A B C D E
5) 12.4, 12.2, 12.0, 11.8, 11.6, 11.4 - (11.0, 10.8, 10.6, 11.2, 9.8)

A B C D E
6) 1.9, 3.8, 5.7, 7.6, 9.5, 11.4 - (155, 1.35, 15.5, 15.2, 17.1)

A B C D E
7) 256, 128, 64, 32, 16, 8 - (2, 4, 6, 10, 12)

A B C D E
8) 0.5, 1.0, 1.5, 2.0, 2.5, 3.0 - (5.5, 5.0, 4.5, 4.0, 3.5)

A B C D E
9) 4/7, 5/7, 6/7, 1, 3/7, 9/7 - (3/7, 7/7, 11/7, 19/7, 6/7)

A B C D E
10) 13/12, 12/11, 11/10, 10/9, 9/8, 8/7 - (7/6, 7/3, 9/2, 5/4, 6/5)

A B C D E
11) 46, 42, 38, 34, 30, 26 - (24, 20, 30, 22, 28)
ANALOGIES

INSTRUCTIONS: TIME: 6 Minutes

Study the following example:

EXAMPLE 1.

In the above example find the relationship between 3 and 6.

The relationship between 3 and 6 is in the ratio 1:2. Now look at the pairs of numbers given in the bracket. Find out which of these pairs has the same ratio as 1:2.

It is 2:4.

This is the answer to this question.

The letter that denotes this pair of numbers is D. Therefore from among the letters A, B, C, D and E, the letter D is crossed as shown in the table below.

Similarly you also cross mark the letter D from among the letters against question number 1 in your answer sheet.
EXAMPLE 2.

One day : 24 hours ::

A     B     C     D

(Month: 32 days, Hour: 30 minutes, Day: Sunday, Fortnight: 14 days,
Week: 7 days)

Now, One day means 24 hours. Find out which of the pairs in the bracket has a similar relationship.

It is "Week: 7 days"

This is the answer to the question.

The letter that denotes this answer is E. Therefore in your answer sheet (booklet) cross mark the letter E against question number 2.

Similarly answer the other questions. While answering be careful to note the number of question you are answering and cross mark the letter that denotes the correct answer to that question.

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<td>7) 35\frac{1}{3} : 66\frac{2}{5} ::</td>
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9) 5 : 2 :: A B C D E
   (20:17, 50:25, 15:12), 50:20, 5:4)

10) 60 : 5 :: A B C D E
    (30:5, 12:1, 60:10, 6:1, 10:1)

11) 3 : 12 :: A B C D E
    (2:11, 4:12, 12:3, 5:20, 20:5)

12) 1½ : 2½ :: A B C D E
    (3:7, 3:5, 3:12, 1:2, 5:3)

13) 3½ : 1½ :: A B C D E
    (7:3, 7:2, 7:4, 3:7, 3:1)

(STOP HERE AND WAIT FURTHER INSTRUCTIONS)

CLASSIFICATION TEST

INSTRUCTIONS:  Time: 8 Minutes

Study the following example:

EXAMPLE 1.

A B C D E
2, 4, 6, 7, 9

Five numbers associated with the letters A, B, C, D, E are given above.

Of these, four numbers are related to each other in some way. Only one number has no such relation. What is that number?

It is the number "7", because, "7" is an odd number. The remaining numbers are all even.
Hence, '7' is the answer to this question. The letter that is associated with this number is "D". Therefore, from among the letters A, B, C, D, E, letter 'D' is crossed as shown below.

\[
\begin{array}{ccccc}
A & B & C & X & E \\
\end{array}
\]

Similarly, cross mark letter 'D' from among the letters given against question no.1 in your answer sheet.

**EXAMPLE 2.**

\[
\begin{array}{ccccc}
A & B & C & D & E \\
1.2, & 2.4, & 3.0, & 3.6, & 4.8 \\
\end{array}
\]

In the above group of numbers also, one number does not belong to the group. What is that number?

It is the number '3.0', because all the other numbers are exactly divisible by 1.2.

Therefore "3.0" is the answer to this question. The letter that is associated with this number is "C". Therefore cross mark the letter "C" from among the letters A, B, C, D, E given against "2" in your answer booklet.

Similarly answer the remaining questions. While answering take care to note the number of question and cross mark only the letter that denotes the correct answer from among the letters given against the same number.
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(Stop here and await further instructions)
READING COMPREHENSION TEST

INSTRUCTIONS: Read the following passage silently, and understand its meaning. Then you will have to answer a few questions. Each question has five answers which are indicated by the letters A, B, C, D and E. Only one among them is the correct answer to that question.

EXAMPLE 1.

"Winning is not the main purpose of play. Development of a sportive attitude is of great importance. The quality of a sportsman is that he is not overwhelmed by victory or defeat but he takes the result with equanimity (an evenness of mind)."

QUESTIONS: We play games with the purpose to

A. defeat the opponent
B. gain victory
C. develop the sportive attitude
D. uplift the nation
E. acquire skills in games

What is the correct answer that we find in the passage?

It is "development of a sportive attitude". This answer is indicated by the letter "C". Therefore mark 'X' on "C" in the box.
Make sure that you mark in the Answer Sheet only and against the correct question numbers.

II. Manjanna was a servant in our home. He was an old man. He was aged about 60 years. We all loved Manjanna very dearly (much), because he told us tales every evenings as soon as darkness was setting in. Manjanna was really an "ocean of tales". We never knew whether all the tales were his own or he learnt them from others. We never felt that there was any distinction between tales made by self and made by others. He was really a mine of tales. (Perpetual supplier of tales).

No sooner did we say "Manjanna, please, tell us tales", then the floods of tales would pour forth from his toothless mouth. All of us would be completely lost listening to his tales.

On one such evening, it was getting darker. It was continuously raining outside. Kittoo and I were sitting and warming ourselves in front of an oven (fire). The fire was very bright. We had sent Vasu and Sitha to bring a few seeds of a Jack Fruit. The seeds arrived. All of us bit and kept the seeds on the floor, for, if we did not make wounds on the seeds before putting them into the fire, we were afraid they would explode. It was our firm belief. Just as we were about to put them into the fire, we heard our father and uncle approaching. At once we hid the seeds and pretended as if we did not know anything. All of them arrived. Sidda and Putta, who had gone to work on the field came and said, "Give us some room to sit, we are drenched in the rain, we will warm ourselves a little and then go". Then all of us said in Chorus "There is no room, go away!" Just then Manjanna arrived.
He started narrating stories. We all turned towards him, and while listening to him, without our knowledge we gave him place to warm himself.

2. The reason why the children gave room to Manjanna only was that
   A. Manjanna got drenched in the rain
   B. he would narrate stories
   C. he had no blanket
   D. he would repair the fire
   E. he would roast a few seeds of a Jack fruit.

3. As soon as the children heard their father and uncle approaching
   A. they stopped talking
   B. they gave room to their father and uncle
   C. they started studying the lessons
   D. they ate the seeds of the Jack fruit
   E. they pretended to be innocent.

4. Putting the seeds into the fire after biting and wounding them
   A. they roast well
   B. they do not get over roasted
   C. they do not explode
   D. they do not smell
   E. they become more tasty

III. Basavaraja was a famous scholar of Karnataka Music. He very much believed in the greatness of music. On one morning in his house, he was singing "Todi Raga" in a strange emotional strain. Just then his mother who had gone to milk the cow, was astonished to find the cow, stood as if in a trance of magic, giving as much as she milked. The cow that normally
gave one potful of milk, that day, was yielding milk even after the second pot was filled. When he learnt about this miracle from his mother, Basavaraja believed that it was the effect of 'Thodi Raga' which he was singing. But will his mother believe it? Basavaraja was determined to examine it.

Two days later once again he sang 'Thodi Raga' in the same emotional strain. Again the same strange thing happened. His mother had to accept it now. What was said to be a blind belief about the "Effect (greatness) of Music" is not thought so. Many scholars and scientists have established through scientific experiments the effect of music on animals and plants. In foreign countries too, it has been scientifically established that music has a very good effect on the milk yield of cattle.

QUESTIONS:

5. The evidence that music has effect on animals is
   A. the belief of musicians
   B. the faith of the people
   C. the scientific experiments
   D. the blind belief
   E. the greatness of 'Thodi Raga'

6. The miracle that happened while the mother was milking the cow was that
   A. the cow stood as if in a trance of magic
   B. the mother stopped the work that she was doing
   C. the cow stopped yielding milk
   D. the mother too started singing
   E. the cow did not stop yielding milk.
The title that suits this passage is

A. Musician Basavaraja
B. Thodi Raga
C. the greatness of cow
D. the miracle of Basavaraja
E. the mother of Basavaraja
ACADEMIC ACHIEVEMENT TESTS

INSTRUCTIONS

1. This is a Comprehensive Achievement Test to test your understanding of school subjects.

2. You will be provided three separate booklets, one containing test items in General Mathematics, another in General Science and another in Social Studies.

3. Time limit for each subject is indicated in the booklets.

4. DO NOT WRITE ANYTHING ON THE BOOKLETS.

5. You will be supplied with an ANSWER SHEET.

6. You will also be provided with a plain sheet of paper for rough work.

7. Use ONLY black-lead pencil.

8. If you do not know the answer to a question, do not waste time on it, but proceed to the next question. If there is time in the end, try to answer the omitted questions.

9. Study the following example:

EXAMPLE: The first President of India after Independence was -

(A) Zakir Hussain
(B) Jawaharlal Nehru
(C) Rajendra Prasad
(D) Radhakrishnan

In the above example, the correct answer is 'Rajendra Prasad'. Therefore the letter -C- is to be crossed in the ANSWER SHEET as below:

SOCIAL STUDIES

1. A B C D
1. The figure formed by joining the ends of two unequal parallel chords towards the same side is
   a. Rectangle
   b. Parallelogram
   c. Rhombus
   d. Isosceles Trapezium

2. Intersection of sets is denoted by
   a. $\subset$
   b. $\cap$
   c. $\cup$
   d. $\_\_\_$

3. A boy solves an equation $\frac{x}{5} - \frac{2x}{3} + 3 = \frac{2}{3}$ in the following manner.
   Indicate the step in which he went wrong.
   a. $\frac{x}{5} + 5 = \frac{2x}{3} + \frac{2}{3}$
   b. $\frac{x}{5} + 3 = \frac{4x}{6}$
   c. $6x + 90 = 20x$
   d. $90 = 14x$

4. By presenting which ONE of the following will a bank make immediate payment of cash without insisting upon proper identification?
   a. Order cheque
   b. Crossed cheque
   c. Bearer cheque
   d. Demand Draft
5. The strength of a school during a year was 750. If it increased by 14% next year the strength will be.

a. \(750 + \frac{100}{14 \times 750}\)

b. \(750 + \frac{14 \times 750}{100}\)

c. \(750 + 14\)

d. \(750 - 14\)

6. An iron chain enclosing a circular flower bed of diameter 14 metres is taken out and used to enclose exactly a square field with a gate 2 metres wide on one side. Then each side of the field in metres is. (Take \(\pi = \frac{22}{7}\))

a. 11.0

b. 11.5

c. 20

d. 22

7. Suresh earns Rs.350/- per month. He spends Rs.75/- toward house-rent; Rs.100/- toward food; Rs.75/- toward clothing; Rs.50/- toward education; Rs.25/- for miscellaneous expenses and saves the remaining amount.

Which of the following graphs would you use to represent this?

a. Bar diagram

b. Frequency Polygon

c. Pie chart

d. Histogram
The two triangles PQR and LMN are congruent when
a. They are similar in appearance
b. P, Q, R and L, M, N lie in the same plane
c. When two sides and the included angle of each triangle are equal mutually
d. The points P and L are joined.

9. The area of a triangle is calculated by the formula
a. \( \frac{\text{Base} \times \text{altitude}}{2} \)
b. \( \text{Base} \times \text{altitude} \)
c. \( \frac{\text{Base} \times \text{altitude}}{4} \)
d. \( (\text{Base} \times \text{altitude})^2 \)

10. The formula for simple interest is \( I = \frac{\text{P} \times \text{R} \times \text{T}}{100} \) where
P = Principal
R = Rate
T = Time
I = Interest

If P is taken 3 times, R doubled and T halved, I will become equal to
a. 3 times
b. 6 times
c. 12 times
d. \( \frac{3}{2} \) times
11. If your transactions with a bank are very frequent you must
   invariably keep a
   a. Cumulative Deposit Account
   b. Current Account
   c. Savings Bank Account
   d. Fixed Deposit Account

12. A man purchases 'm' tables at 'n' rupees each. He finds his purse
   short of 'p' rupees to pay the cost of furniture. Then he must
   have possessed rupees -
   a. \( m + n + p \)
   b. \( m - n - p \)
   c. \( m \times n + p \)
   d. \( m \times n - p \)

13. Area of the four walls of a room is calculated by the formula,
   a. Length \times breadth \times height
   b. Length + breadth \times height
   c. \( 2(\text{Length} + \text{breadth}) \times \text{height} \)
   d. Length + breadth + height

14. If \( 10^2 = 100 \) then \( 10^0 \) is
   a. Zero (0)
   b. 10
   c. 1/10
   d. 1
15. The intersection of the two planes I and II will be in the form of

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I
```

```
II
```

a. Two straight lines  
b. Two parallelograms  
c. A straight line  
d. A disjointed figure

16. We can find out the perimeter of a circle if we know ...... of the circle.

a. Radius  
b. Tangent  
c. Chord  
d. Segment

17. One of the following would use the Gunter's chain

a. Goldsmith  
b. Carpenter  
c. Surveyor  
d. Teacher

18. A man borrowed Rs.100/- from a friend on simple interest for two years at the rate of 6% per annum. What is the total amount he has to pay back?

a. Rs.102/-  
b. Rs.108/-  
c. Rs.112/-  
d. Rs.106/-
19. Which one of the following statements IS NOT true of a graph sheet?
   a. In a graph sheet small squares are found.
   b. It has vertical and horizontal lines at right angles.
   c. Every time a co-ordinate has to be drawn, perpendicul ars must be drawn.
   d. The general form of the coordinate of a point P is P (x,y).

20. There are sixty pupils in a class. The teacher conducts a test in mathematics and finds the marks ranging from 20 to 80. If the teacher were to employ statistical methods, which one of the following would he use as the WIDTH of the class interval?
   a. 3
   b. 20
   c. 5
   d. 10

21. If Rs.24/- is the interest earned on Rs.200/- in three years, the rate of interest percent is -
   a. \( \frac{200 \times 24}{100 \times 3} \)
   b. \( \frac{100 \times 24}{200 \times 3} \)
   c. \( \frac{100 \times 3}{200 \times 24} \)
   d. \( \frac{100 \times 200}{3 \times 24} \)

22. The curved surface area of a cylinder of height 7 cms, radius 5 cms is
   a. 440 Sq. cms.
   b. 508 Sq. cms.
   c. 132 Sq. cms.
   d. 924 Sq. cms.
23. Which one of the quadrilaterals PQRS, having the following sets of angles is cyclic?
   a. \( \angle P = 110^\circ, \angle Q = 97^\circ, \angle R = 91^\circ, \angle S = 72^\circ \)
   b. \( \angle P = 95^\circ, \angle Q = 89^\circ, \angle R = 85^\circ, \angle S = 115^\circ \)
   c. \( \angle P = 100^\circ, \angle Q = 96^\circ, \angle R = 80^\circ, \angle S = 84^\circ \)
   d. \( \angle P = 92^\circ, \angle Q = 106^\circ, \angle R = 88^\circ, \angle S = 77^\circ \)

24. Sunil took Rs.3,000/- from Prakash and paid Rs.500/- for keeping the money with him for 5 years. The amount of Rs.500/- represents.
   a. Principal
   b. Bonus
   c. Interest
   d. Rate of interest

25. In a right angled triangle ABC if B is the right angle and
   \( AB = 1.2 \text{ cms., } BC = 1.6 \text{ cms.} \) then AC will be
   a. \( (1.6)^2 - (1.2)^2 \)
   b. \( (1.6 + 1.2) \)
   c. \( (1.6)^2 + (1.2)^2 \)
   d. \( (1.6 - 1.2) \)

26. \( \frac{1}{8} \) may be written as
   a. \( \frac{1}{8} \times 3 \)
   b. \( \frac{1}{8 + 3} \)
   c. \( \frac{1}{8 \times 3 \times 3} \)
   d. \( \frac{1}{8 - 3} \)
27. In the figure below $CMN = MNR$, because they are
a. Supplementary angles
b. Alternate angles
c. Corresponding angles
d. Vertically opposite angles

28. In the equation $Y = mx + C$, $m$ stands for
a. Intercept
b. Variable
c. Slope
d. Term

29. In a mixture of 100 litres, milk and water are in the ratio of 7:3. How much milk should be added to bring the ratio to 5:1?
   a. 10 litres
   b. 20 litres
   c. 5 litres
   d. 15 litres

30. The number 2 is equal to
   a. A rational fraction
   b. A finite decimal
   c. 1.41421
   d. An infinite repeating decimal
1. A stone is let fall from the edge of a wall. It takes one second to hit the floor. What is the approximate height of the wall?
   A. 5 metres
   B. 10 metres
   C. 32 metres
   D. none of the above

2. To prepare bleaching powder, chlorine is passed into
   A. Ammonium hydroxide
   B. Sulphuric acid
   C. Calcium carbonate
   D. Calcium hydroxide

3. Which one of the following is responsible for conducting water in the plants?
   A. Phloem
   B. Parenchyma
   C. Xylem
   D. Sclerenchyma

4. Air exerts pressure. Which of the following instruments does not work on this principle?
   A. Ink filler
   B. Syringe
   C. Common Pump
   D. Thermometer
5. When concentrated nitric acid is poured over hot saw-dust, sparks are seen and carbon is left behind. This shows that nitric acid
   A. is an oxidising agent
   B. is a reducing agent
   C. is highly combustible
   D. readily reacts with metals

6. Which one of the following structures in a cell helps to release energy?
   A. Golgi apparatus
   B. Mitochondria
   C. Cell Membrane
   D. Ribosomes

7. When a body is acted upon by two equal parallel forces in opposite directions, their effect will be
   A. Nil on the body
   B. To move the body along a straight line
   C. To rotate the body
   D. To divide the body into two pieces.

8. To prepare ammonia in the laboratory, ammonium chloride is mixed with
   A. Sodium chloride
   B. Potassium nitrate
   C. Potassium chlorate
   D. Calcium hydroxide

9. Which of the following helps to recognise a moth from a butterfly?
   A. Stout body and coloured wings
   B. Slender body and spreads wings horizontally
C. Stout body and spreads wings horizontally
D. Thick hairs on feelers and spreads wings horizontally

10. A suspended body will be in stable equilibrium if
A. The centre of gravity is coinciding with the point of suspension
B. The centre of gravity is above the point of suspension
C. The centre of gravity is below the point of suspension
D. The centre of gravity is outside the body

11. When nitric acid decomposes after heating the products formed are
A. Water and nitrogen
B. Nitric oxide and oxygen
C. Water, nitrogen dioxide and oxygen
D. Nitrogen, oxygen and hydrogen

12. Vaccines help in acquiring the immunity. They contain
A. Red blood corpuscles
B. White blood corpuscles
C. Weakened germs
D. Antitoxins

13. In the case of a wheel and axle, the mechanical advantage can be increased by
A. Increasing the radii of both the wheel and the axle.
B. Decreasing the radii of both the wheel and the axle
C. Decreasing the radius of the wheel and increasing the radius of the axle
D. Increasing the radius of the wheel and decreasing the radius of the axle.
14. Which one of the following methods do you use to get scientifically pure water?
   A. Decantation
   B. Filtration
   C. Chlorination
   D. Distillation

15. In mitotic cell-division, the two cells formed will share
   A. the protoplasm equally
   B. all the contents equally
   C. hereditary materials equally
   D. the cell contents equally

16. There are four identical tanks kept on a level ground. Each tank has a small hole of the same size on its side. The depth of water in each tank and the height of the hole from the ground are given below. Which tank will have the minimum leakage?

<table>
<thead>
<tr>
<th>Tank</th>
<th>Depth of water in feet</th>
<th>Height of hole in ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. 1</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>B. 2</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>C. 3</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>D. 4</td>
<td>5</td>
<td>2</td>
</tr>
</tbody>
</table>

17. When sulphur is boiled in a testtube and then poured into cold water in a beaker, the product formed is
   A. Sulphur-dioxide
   B. Sulphuric acid
   C. Plastic sulphur
   D. Rhombic Sulphur
18. The green plant can prepare starch in the presence of light, carbon-
oxide and water. The name given to this process is
   A. Transpiration
   B. Respiration
   C. Photosynthesis
   D. Digestion

19. The unit of force in the CGS system is called the
   A. erg
   B. dyne
   C. newton
   D. poundal

20. What will happen when a burning candle is introduced in a jar of Chlorine?
   A. The candle will burn with a bright green flame
   B. Chlorine will catch fire and burn at the mouth of the jar with green flame.
   C. The candle will burn with a dull red flame.
   D. Neither the candle nor the chlorine will burn.

21. A student observed a slide of unknown tissue and identified it as a plant cell. Which of the following structures present in the cell would have helped him to identify the plant cell?
   A. Nucleus
   B. Cytoplasm
   C. Cell wall
   D. Cell Membrane

22. The mass of the Earth is
   A. greater than the mass of the Moon, but less than that of Jupiter.
   B. greater than the mass of either Jupiter or the Moon.
C. less than the mass of the Moon but greater than the mass of Jupiter.
D. less than the mass of either Jupiter or the Moon.

23. You are given in separate test-tubes hydrochloric acid, sodium hydroxide and water. You will have to identify the test-tube which contains hydrochloric acid. Which of the following would you use for that purpose?
A. Red litmus
B. Blue litmus
C. Methyl orange
D. Ammonium hydroxide

24. Which one of the following is supporting in function?
A. Collenchyma
B. Parenchyma
C. Phloem
D. Xylem

25. A bus should not be driven continuously for long periods mainly because
A. The driver gets exhausted
B. The engine and the tyres become very hot
C. The passengers become restless due to continuous jolting.
D. The parts of the machine may get worn out.

26. Metals in unknown substances are detected by using
A. Hydrogen sulphide
B. Hydrogen chloride
C. Hydrochloric acid
D. Ammonium hydroxide
27. Some bacteria do not require air because
   A. they do not respire
   B. they can live without energy
   C. they are non-living
   D. they can breakdown glucose and obtain energy without air

28. If the pressure of a gas (at constant temperature) is doubled, its volume
   A. remains constant
   B. is reduced
   C. is halved
   D. is doubled

29. Chlorine kills bacteria. Therefore chlorine can be used
   A. as a disinfectant
   B. as an oxidising agent
   C. as an anaesthetic
   D. as a bleaching agent

30. Which one of the following is the most important function of the villi?
   A. Digestive proteins
   B. Absorb the water
   C. Absorb the digested food
   D. Produce enzymes
1. The biggest of all the continents is
A. Europe
B. North America
C. Asia
D. South America

2. The founder of Bramhasamaja was
A. Keshavachandra Sen
B. Raja Ram Mohan Roy
C. Dayanand Saraswathi
D. Swami Vivekananda

3. The Vice-President of the Indian Union is the Chairman of the
A. Lok Sabha
B. Vidhana Sabha
C. Vidhana Parishad
D. Rajya Sabha

4. Ship-building industry of India is located in
A. Madras
B. Bombay
C. Vishagapatnam
D. Cochin
5. Akbar is called the greatest of the Mughal rulers because 
   A. He had a vast empire 
   B. He was a friend of Abul Fazal 
   C. He showed toleration towards other religions, especially Hinduism. 
   D. He built a number of mosques. 

6. In the First Five-year Plan priority was given to the improvement of 
   A. Industry 
   B. Agriculture 
   C. Housing 
   D. Railways 

7. The Industrial Revolution was the result of 
   A. Scientific inventions 
   B. Availability of natural resources 
   C. Skill-ed labour 
   D. Unemployment 

8. A person in your locality is accused of murder and sentenced to death. You want to send a mercy petition. The petition should be addressed to — 
   A. The Prime Minister 
   B. The Cabinet at the centre 
   C. The President of the Indian Republic 
   D. The Chief Justice of the Supreme Court of India.
9. Which of the following is the capital of New Zealand?
   A. Canberra
   B. Dunedin
   C. Wellington
   D. Auckland

10. A passer-by happened to listen to the following portion of a speech made by a certain religious leader.

"There are not many gods and goddesses. There is only one God who is omnipresent and omniscient. He cannot and does not incarnate himself in human form. I hold that the authority of Vedas should never be challenged. Anything that does not conform to the Vedas is untrue."

   The Speaker belonged to:
   A. The Theosophical Society
   B. The Bremha Samaj
   C. The Arya Samaj
   D. Radha Swami Satsang

11. India became a Sovereign Democratic Republic as a result of
   A. The transfer of power by the Britishers to the Indians.
   B. India's enrolment as a member of the U.N.O.
   C. The merger of all the princely states.
   D. The adoption of the Constitution.

12. Which one of the following countries produces more than 50 percent of the coffee produced in the world?
   A. New Zealand
   B. Australia
13. Tajmahal is a fine specimen of
   A. Indo-Greek Art
   B. Indo-Persian Art
   C. Hoysala Art
   D. Chalukyan Art

14. The President of the Indian Union is elected by
   A. Parliament
   B. State Legislatures
   C. The Cabinet
   D. Electoral College

15. The river which is called the boon of Egypt is
   A. Congo
   B. Nile
   C. Zambisi
   D. Niger

16. The Governor-general who put an end to "Sathi" was
   A. Warren Hastings
   B. Dalhousie
   C. Well-sailey
   D. William Bentinck

17. Sri Mohan Kumar wants to contest for a seat in the State
    Legislative Assembly. The minimum qualification essential
for contesting the election is that
A. He must be a member of a recognized political party
B. He must have passed at least the Matriculation Examination
C. He must be a good orator
D. He must be at least 25 years of age.

18. The temperate grassland in South America is known as
A. Pampas
B. Prairies
C. Savannas
D. Downs

19. The traces of Indus-Valley civilization were found at
A. Delhi and Kurukshetra
B. Bagalkot and Bijapur
C. Mohenjodaro and Harappa
D. Hospet and Molakalmuru

20. A Municipal Committee collects
A. Income Tax
B. Sales Tax
C. House Tax
D. Super Tax

21. The first woman of Karnataka who fought against the British
A. Rani Lakshmi Bai
B. Kittur Chennamma
C. Gangamma of Bidanur
D. Gangambike
22. The Executive Head of a State Government is
   A. The Governor
   B. The Prime Minister
   C. The Chief Minister
   D. The Home Minister

23. Nationals from one of the following countries are freely admitted to settle in Australia
   A. India
   B. Africa
   C. Italy
   D. Britain

24. The 'Gandhara Art' flourished during the reign of
   A. Harsha
   B. Ashoka
   C. Kanishka
   D. Akbar

25. Irrigation projects have been constructed in our country to
   A. Supply drinking water in cities
   B. Provide work to the intelligent engineers
   C. Grow more food and attain self-sufficiency
   D. Create more parks and gardens

26. The largest Republic of South America is
   A. Argentina
   B. Chile
   C. Brazil
   D. Columbia
27. To check the movement of population from the rural to the urban areas while at the same time working for industrial revolution in the country, India should
   A. Take suitable legislative measures
   B. Provide employment opportunities in rural areas
   C. Curtail the development of rail and road transport
   D. Provide cinema theatres in rural areas.

28. The founder of Arya Samaj was
   A. Dayananda Saraswathi
   B. Rajaram Mohan Roy
   C. Ramakrishna Paramahansa
   D. Gopal Krishna Gokhale

29. A municipal committee can be dissolved by the orders of the
   A. Governor
   B. Deputy Commissioner
   C. Tahsildar
   D. Chairman of the municipal committee

30. The leader of the Reformation Movement in Europe was
   A. John Wycliff
   B. John Huss
   C. Martin Luther
   D. H.G. Wells
1. Volume of a cone of height \( h \) cms and radius of the base \( r \) cms is:
   a) \( 2\pi r^2 h \) cubic cms.
   b) \( 3\pi r^2 h \) cubic cms.
   c) \( \frac{1}{3}\pi r^2 h \) cubic cms.
   d) \( \pi r^2 h \) cubic cms.

2. The side of a square base of a pyramid is 12 cms. and the vertical height is 8 cms. Hence the slant height is:
   a) 20 cms.
   b) 10 cms.
   c) 8 cms.
   d) 4 cms.

3. The L.I.C. pays the full insured amount when the insured person:
   a) commits suicide
   b) becomes a bankrupt
   c) is unable to pay further instalments
   d) dies a natural death

4. The formula for finding the lateral surface area of a square pyramid of side \( 'a' \) cms. and slant height \( 'l' \) cms. is:
   a) \( al \)
   b) \( 2al \)
   c) \( 1/3 \) \( al \)
   d) \( 3 \) \( al \)
5. \( r(r+1) \) is the total surface area of a:
   a) Sphere
   b) Square pyramid
   c) Prism
   d) Cone

6. The volume of a hemispherical solid is:
   a) \( \frac{4}{3} \pi r^3 \)
   b) \( 4 \pi r^3 \)
   c) \( \frac{2}{3} \pi r^3 \)
   d) \( \frac{3}{2} \pi r^3 \)

7. 

<table>
<thead>
<tr>
<th>Students</th>
<th>X</th>
<th>Y</th>
<th>Z</th>
<th>P</th>
<th>Q</th>
<th>R</th>
<th>S</th>
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<tbody>
<tr>
<td>Marks in Maths</td>
<td>55</td>
<td>36</td>
<td>55</td>
<td>36</td>
<td>55</td>
<td>45</td>
<td>36</td>
</tr>
</tbody>
</table>

According to the above table the rank of 'R' is:
   a) 6
   b) 5
   c) 4
   d) 3

8. The volume of a prism is 210 cu. cms. The area of the base is 20 sq. cms.
   Then the height of the prism is:
   a) 10.5 cms.
   b) 10.5 cms.
   c) 51.5 cms.
   d) 21 cms.
9. The area of an equilateral triangle is got by using the formula:
   - a) \( \frac{1}{2} \) base \( \times \) altitude
   - b) \( \frac{\sqrt{3}}{4} a^2 \)
   - c) \( \frac{\sqrt{3}}{2} a^2 \)
   - d) \( \frac{\sqrt{3}}{4} a^2 \)

10. The radii of two spheres are 4 cms. and 6 cms. Hence the ratio of their volume is:
   - a) 2 : 3
   - b) 4 : 9
   - c) 8 : 15
   - d) 8 : 27

11. If \((a+b)=4\) and \(ab=5\) then \(a^{3}+12ab+b^{3}=\)
   - a) 64
   - b) 27
   - c) 12
   - d) 1

12. Expanding \((x+y-2z)\) and simplifying it we get:
   - a) \(2(x+y-2z)\)
   - b) \((2x+2y-2z)\)
   - c) 0
   - d) \((x+y-2z)\)

15. The roots of the equation \(4x^2-20x+25=0\) are:
   - a) 2 and 5
   - b) 2 and -5
c) $\frac{5}{2}$ and $-\frac{5}{2}$
d) $\frac{5}{2}$ and $\frac{5}{2}$

14. The 4th proportional of 1, 2 and 3 is:
   a) 4
   b) 6
   c) 8
   d) 12

15. $(a^0)^3 =
   a) a^3
   b) \frac{1}{3}
   c) 1
   d) 0

16. In the expansion of $(0.2x+5)^3$ the coefficient of $x$ is:
   a) 1
   b) 1.5
   c) 10
   d) 15

17. The straight line graph $2x+y=20$ cuts the 'x' axis at 'p'. Then the coordinates of 'p' are:
   a) $(18,0)$
   b) $(10,0)$
   c) $(20,0)$
   d) $(22,0)$
18. The mean proportional of $4xy$ and $1/4xy$ is:
   a) $4x^2y^2$
   b) $x^2y^2$
   c) 16
   d) $xy$

19. If $x \propto \frac{1}{y^2}$ then:
   a) $y$ varies directly as $x$
   b) $y$ varies inversely as $\sqrt{x}$
   c) $y$ varies inversely as $x^2$
   d) $y$ varies directly as $x^2$

20. The simplified form of $\frac{\frac{5}{3} - \frac{3}{2}}{a - a}$ is:
   a) $a(a-1)$
   b) $a(a+1)$
   c) $a(1-a)$
   d) $a(a^2-1)$

21. Angle in a semicircle is:
   a) $45^\circ$
   b) $60^\circ$
   c) $90^\circ$
   d) $120^\circ$

22. A regular hexagon is inscribed in a circle. A side
   is 6 cms. Then the diameter of the circle is:
   a) 2 cms.
   b) 6 cms.
   c) 18 cms.
   d) 12 cms.
23. The angle between the two tangents drawn to a circle is 45°. If the points of contacts are joined to the centre the angle formed at the centre is:—
   a) 45°
   b) 135°
   c) 120°
   d) 90°

24. The orthocentre of a triangle is the point of concurrence of:—
   a) The medians
   b) the bisectors of the sides
   c) the bisectors of the angles
   d) the altitudes

25. In a right angled triangle ABC, AB=6 cms. BC=8 cms. and AC is the hypotenuse. Hence the distance between the orthocentre and the circum-centre is:—
   a) 3 cms.
   b) 5 cms.
   c) 4 cms.
   d) 14 cms.

26. The opposite angles of a cyclic quadrilateral are:—
   a) complementary
   b) equal
   c) supplementary
   d) adjacent

27. A triangle is bisected by:—
   a) A bisector of an angle
   b) a median
c) an altitude  
d) \( \perp \) bisector of a side

In the triangle \( \triangle ABC \) the bisectors of the angles \( B \) and \( C \) meet at \( O \).  
Then \( \angle DOC \) is

a) \( 90^\circ + \frac{A^\circ}{2} \)  
b) \( 90^\circ - \frac{A^\circ}{2} \)  
c) \( 180^\circ + \frac{A^\circ}{2} \)  
d) \( 180^\circ - \frac{A^\circ}{2} \)

In a circle having 6.5 cms. radius a chord of length 10.4 cms is drawn.
Then the distance between the chord and the centre is

a) 6.5 cms.  
b) 5.2 cms.  
c) 4.5 cms.  
d) 3.9 cms.

In a circle with centre \( O \), \( \angle ACB \) is an arc. \( P \) is a point on the remaining part of the circumference. If \( \angle AOB = 100^\circ \), \( \angle APB \) is

a) \( 80^\circ \)  
b) \( 50^\circ \)  
c) \( 100^\circ \)  
d) \( 120^\circ \)
1. Shadows are cast because light is:
   a) is reflected
   b) is refracted
   c) travels in straight lines
   d) is dispersed

2. To get an image in a camera the object is placed:
   a) at F
   b) between F and 2F
   c) between F and the lens
   d) beyond 2F

3. The number of images of an object placed between two plane mirrors inclined at an angle of 30° is:
   a) 10
   b) 11
   c) 12
   d) 13

4. Light is refracted when it enters from one medium into another medium of a different density because there is change in:
   a) direction
   b) density
   c) velocity
   d) transparence
5. A mirage is formed when there is:
   a) refraction of light
   b) dispersion of light
   c) reflection of light
   d) total internal reflection of light.

6. An echo can be heard clearly if the reflecting surface is at a distance of more than:
   a) 350 meters
   b) 16.5 meters
   c) 50.5 meters
   d) 52.5 meters

7. A piece of iron behaves as a magnet when the particles are arranged in it in:
   a) a haphazard manner
   b) ring-like formations
   c) domains
   d) straight lines

8. The combined E.M.F. of 4 dry cells each of 1.5 volts connected in parallel is:
   a) 6 volts
   b) 1.5 volts
   c) 3 volts
   d) 4 volts

9. The principle of the dynamo was discovered by:
   a) Oersted
   b) Ohm
c) Volta

d) Faraday

10. A student wants to find out if a used up dry cell can still give some electricity. The best way to know it is to connect the cell to a-
a) bulb
b) electric bell
c) galvanometer
d) voltmeter

11. Which of the following is called the laughing gas?
a) Nitric oxide
b) Nitrous oxide
c) Nitrogen peroxide
d) Nitrogen trioxide

12. In the laboratory nitrogen is prepared by heating a mixture of-
a) ammonium chloride and calcium nitrate
b) ammonium chloride and sodium nitrate
c) ammonium chloride and sodium nitrite
d) ammonium chloride and Barium Nitrite

13. Ammonia can be used for the fountain experiment because it is:
a) lighter than air
b) highly soluble in water
c) a colourless gas
d) alkaline to litmus

14. Which of the following does not exhibit allotropy?
a) phosphorus
b) iodine
c) carbon
d) sulphur

15. When phosphorus pentoxide is dissolved in cold water the chemical
    formed is:
    a) pyrophosphoric acid
    b) orthophosphoric acid
    c) meta phosphoric acid
    d) phosphenes

16. Which of the following properties of carbon is not important for its
    capacity to form almost limitless number of compounds?
    a) it has four valency bonds
    b) it is a non-metal
    c) its atoms get linked in chains
    d) it easily combines with hydrogen, oxygen and nitrogen.

17. Which of the following is an unsaturated hydrocarbon?
    a) methane
    b) butane
    c) propane
    d) ethylene

18. The scientist connected with the discovery of the ring structure
    of benzene is:
    a) Dalton
    b) Krebs
    c) Kekule
    d) Wholer
19. Chemical particles carrying an electric charge are called:—
   a) monomers
   b) isomers
   c) isotopes
   d) ions

20. Which of the following is not a polymer?
   a) Rayon
   b) starch
   c) glucose
   d) rubber

21. We yawn when:—
   a) we feel sleepy
   b) our brain lacks oxygen
   c) we are tired
   d) we are bored

22. It is dangerous to laugh when we have food in the mouth because:—
   a) it may not be chewed properly
   b) it may fall out
   c) it may get into the food pipe
   d) it may get into the wind pipe

23. An athlete awaiting the start of a race feels the sensation to pass urine frequently. The most probable reason may be:—
   a) confidence
   b) bad weather
   c) anxiety
   d) diabetes
24. The nature of a nerve impulse is:—
   a) chemical
   b) electro-chemical
   c) electrical
   d) mechanical

25. Lack of vitamin 'A' in our diet causes:—
   a) short sight
   b) long sight
   c) colour blindness
   d) night blindness

26. A visitor to a paper factory or a soap-nut powder factory feels upset by the smell but a worker in the factory seems unmindful of the smell because
   a) he is uneducated
   b) he is indifferent to it
   c) his olfactory nerves are tired
   d) he has no sense of smell

27. When a person is very angry his eyes are blood shot and he tightens his fists and the hairs on the body stand erect because:—
   a) he wants to quarrel
   b) he wants to run away
   c) he is fearless
   d) his circulatory system is flooded with adrenalin

28. Which of the following is not a quality of pteridophytes:
   a) seeds
   b) roots
c) stem

d) leaves

29. Which of the following is not classified as an insect?

a) housefly

b) butterfly

c) cockroach

d) spider

30. One characteristic that is hereditary is:

a) laziness

b) fear of snakes

c) curly hair

d) love of country
POST-TEST - X STANDARD

HISTORY, CIVICS AND GEOGRAPHY

(Social Studies) Time: 20 mins

1. The sphinx is a famous example for Egyptian:—
   a) literature
   b) architecture
   c) painting
   d) sculpture

2. "An eye for an eye and a tooth for a tooth" was the principle of:—
   a) Hindu code
   b) Hammurabi code
   c) Christian law
   d) Muslim law

3. Confucius was a great philosopher-teacher of ancient:—
   a) Egypt
   b) Mesopotamia
   c) China
   d) Babylon

4. "Forgive them, for they know not what they do". This was the last prayer offered by:—
   a) Gandhiji
   b) Jesus Christ
   c) Buddha
   d) Mohamad
5. The spirit of enquiry was a characteristic feature of:
   a) Colonial expansion
   b) Reformation
   c) Renaissance
   d) Revolution

6. Florence was the centre of Renaissance because:
   a) many great men lived there
   b) it was the centre of Europe
   c) the ruler was a great scholar
   d) the ruler was a patron of art and literature

7. The form of government that respects the individual in society is:
   a) Monarchy
   b) Democracy
   c) Aristocracy
   d) Dictatorship

8. The first president of U.S.A. was:
   a) Lincoln
   b) Jefferson
   c) George Washington
   d) Kennedy

9. Industrial Revolution in England was a result of:
   a) The factory system
   b) The power loom
   c) The spinning jenny
   d) The application of steam power
10. The idea of communism was first explained by:-
   a) Tolstoy
   b) Karl Marx
   c) Lenin
   d) Stalin

11. Gandhiji wanted to get freedom only through non-violent means because:-
   a) India had no weapons
   b) The common people had no military training
   c) Of his faith in the purity of means for right ends
   d) It was an easy method to preach

12. Democracy can succeed only when:-
   a) there are powerful political parties
   b) all the people are literate
   c) there is adult franchise
   d) the people have cultivated civilized behaviour

13. The biggest wealth of India is:-
   a) the minerals
   b) the rivers
   c) the people
   d) the forests

14. Secularism in India is based on:-
   a) giving up faith in God
   b) equal respect for all religions
   c) removal of caste feelings
   d) establishing a common religion
15. In our society problems such as corruption and adultery are a result of:
   a) poverty
   b) laziness
   c) want of character
   d) illiteracy

16. Frequent border agitations indicate that we have not yet achieved:
   a) economic progress
   b) political freedom
   c) technological development
   d) national integration

17. The quick success in the battle field in the recent war with Pakistan was a result of:
   a) sacrifices of the soldiers
   b) industrial progress
   c) statesmanship
   d) coordinated action of the three wings of Defence

18. The first woman president of the U.N.O. was:
   a) Sarojini Naidu
   b) Vijayalakshmi Pandit
   c) Indira Gandhi
   d) Sarojini Mahishi

19. North America is separated from Asia by:
   a) Palk Strait
   b) Bering Strait
20. Which of the following has no sea coast?
   a) Switzerland
   b) Italy
   c) Norway
   d) Holland

21. The temperate grassland in North America is called:
   a) steppes
   b) pampas
   c) prairies
   d) downs

22. The capital of Canada is:
   a) Quebec
   b) Ottawa
   c) Montreal
   d) Winnipeg

23. Lumbering is a major occupation in:
   a) equatorial forests
   b) deciduous forests
   c) coniferous forests
   d) monsoon forests
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From the data given above it is possible to infer that it represents the conditions of:

a) Oceanic climate  
   b) continental type of climate  
   c) equatorial climate  
   d) mediterranean climate

25. Which of the following is famous for oil?:

a) Stockholm  
   b) Baku  
   c) Manchester  
   d) Liverpool

26. The Volga river flows into:

a) the Black sea  
   b) the White sea  
   c) the Caspian sea  
   d) the Baltic sea

27. Which of the following is a little below the sea level?

a) Finland  
   b) Scotland  
   c) England  
   d) Holland
28. Most of Europe lies in the same latitudes as Canada. But Europe has a moderate climate because of:
   a) North Pacific Drift
   b) North Atlantic Drift
   c) the Kuril current
   d) the Labrador current

29. Mexico is famous for:
   a) oil
   b) silver
   c) iron
   d) coal

30. The Donets Basin in Soviet Russia is noted for:
   a) agriculture
   b) cattle rearing
   c) sheep rearing
   d) heavy industry
1. Attention - Interest - Effort

Today I am going to talk to you on three important aspects of the process of learning, namely Attention, Interest and Effort. You may, perhaps, be familiar with these terms. However, let me explain how these are related to one another.

You are now listening to my talk played through this tape-recorder. You are supposed to be focusing your consciousness upon my talk. To be able to do that effectively, you have to withdraw your attention from other things. You have to be selective in attention.

Supposing, just at the moment, your friend whispers something into your ears. Temporarily your attention is likely to be shifted from my talk. You cannot listen to the talk as well as your friend's whisper simultaneously. Can you divide your attention? Let me suggest an interesting experiment.

Provide a paper and pencil to your friend and ask him to write the letters of alphabet as fast as he can for thirty seconds. Find out the number of letters written by him. Now, give him another task. Ask him to count aloud the odd numbers in an ascending order, namely, 1, 3, 5, 7, etc. etc., for a period of thirty seconds. Note down the number reached by him in thirty seconds. In the third trial, ask him to count aloud the odd numbers and simultaneously write the letters of alphabet. It would be a real fun to watch him do both the tasks.
together. While he is counting odd numbers he is unable to write the letters of alphabet; when he writes the alphabet, he is unable to count.

What do you infer from this experiment? Attention cannot be divided. When you try to divide your attention, you are not able to do either task satisfactorily. At a time you can bestow attention upon only one thing.

To be able to attend to an activity, you have to have interest. In the absence of interest you will not be able to attend. Thereupon attention and interest go together. They are like two sides of a coin. You may have natural interests in certain things. Sometimes you may also have to acquire interests which are called hobbies.

Every subject that is taught in the class may not be equally interesting. Sometimes, you may have to deliberately cultivate interests in that area. What you need here is additional effort. Can we say that interest is absent in this process? For instance, you may be working hard, reading a subject, just to get through the examination, even though you are not very much interested in the subject. Certainly you are interested in passing the examination. You will be able to pass in the examination, only by mastering the subject. Here the interest is indirect. By passing the examination alone, you can qualify yourself for a degree. Only by acquiring qualification, you can secure an employment. Only by securing an employment, you can earn
your livelihood. Therefore, you would find a chain of indirect interests in many activities which do not appeal directly to your interest.

Attention, interest and effort are closely related to one another. To be successful in learning you have to utilise all the three effectively.
2. Sir Isaac Newton:

When you throw a ball into the air have you ever wondered why it always comes back down? Why doesn't it keep going up and up? One man did more than wonder. He was Sir Isaac Newton. You must be knowing his discovery. Perhaps you may not be aware of his childhood experiences.

Newton was born in England in a place called Woolsthorpe on Christmas Day in 1642. He was considered rather poor in studies. But he was very much interested in making mechanical toys such as windmill, water-clock, sun-dial and so on. I wonder how many of the students spend their pastime like Newton!

Newton left school when he was hardly fifteen. He had to help his widowed mother manage her farm. But, he spent so much time in reading that he was soon sent back to school.

Newton studied in a famous college in England, called Trinity College of Cambridge University. He became a Professor of Mathematics in 1669. Mind you, he was then only twenty-seven! Let me tell you an interesting incident about him.

One summer day, as Newton was sitting under an apple tree, an apple fell down and struck him on the head. He picked it up, rubbed his head and started to wonder why the apple fell 'down' instead of going 'up'. If you were to be in his place you would have eaten the apple and plucked a few more for your friends. But, Newton began to contemplate. "Was
some power or force pulling the apple to the ground - a force no one could see?" It was a long time before he could answer this question. Today, it is well-known to everyone as the "Law of Gravitation". It helps us understand how the Earth and the Moon and the Planets travel in the sky without bumping into each other. It also explains why things feel light or heavy in our hands and what makes things fall to the ground.

Let me tell you something more about Newton. He remained a bachelor in life. He spent most of his time in the study of mathematics, physics and astronomy. As a professor he was very absent-minded. Every absent-minded professor cannot become a Newton. He was very modest.

Just before his death he spoke the following words about his achievements:

"I do not know what I may appear to the world, but to myself I seem to have been only like a boy playing on the seashore and diverting myself in now and then finding a smoother pebble or a prettier shell than ordinary, whilst the great ocean of truth lay all undiscovered before me."
3. A Great Teacher Indeed!

I am going to tell you an incident that happened long long ago when I was a school boy like you. I lived in a small town where there was only one high school. There was a teacher by name Rev. Arulswamy. He was tall and commanding. He was a sincere and devoted teacher. We would admire and love him. He taught us mathematics. We used to enjoy his classes. Many a time I had approached him with a difficult sum. He used to teach all over again. What a joy, you know, to know something you did not know earlier!

One day a dramatic incident took place in his class. Rev. Swamy had given us some homework. We were asked to work out and bring to the class. Everyone had finished the homework except a boy. He was least concerned. Rather he was proud of his indifference. He was prepared to create a scene in the class.

When the bell rang, Rev. Swamy entered the class. As usual he had a smiling countenance. One by one went to him and got the homework checked except that boy. When his turn came, he stood up and boldly declared that he didn't do the homework.

"What is the matter? Why didn't you do? asked the teacher.

"I didn't do Sir, That's all", replied the boy.

"Well, I am asking why you did not do. Don't you know how to do it? pursued Rev. Swamy.

"I can do it. But I did not", replied the boy sternly.
A few minutes passed. Rev. Swamy was in a dismay. He could not have foreseen a situation of this kind. He decided to handle the situation in an uncommon way. "Would you please go to the Headmaster's room and fetch a cane?", Spoke Arulsvamy.

The boy brought a cane in no time. Can you guess what Rev. Swamy would have done with the cane? The boy expected that his teacher would cane him. He was preparing himself for a 'hide and seek' in the class.

"Look here. I am guilty of giving you a homework that you didn't like. That means I have displeased you. You have a right to punish me for the same. Here is the cane and teach me a lesson." Spoke Rev. Swamy extending his palm.

There was pin-drop silence in the class. No one stirred. The boy was bewildering. His pride, courage and mischief vanished. He didn't know what to do further. Tears swelled his eyes. Tears swelled the eyes of everyone in the class. But Rev. Swamy was smiling.

"Will you please carry out my orders? You are bound by my orders, mind you." Spoke Arulsvamy to that trembling boy.

With shaking limbs and tear-soaked face, the boy received the cane from the teacher. He was in a dilemma whether to carry out his orders or not. He felt like crying. He couldn't face his classmates. He wasn't bold enough to look at his teacher. He stood crestfallen.

"Yes, Go ahead " commanded the teacher.

Ultimately, with trembling hands he touched the palm of the teacher
with the tip of the cane. He couldn't control any further. He fell at his feet and apologised for his misconduct.

Do you know what happened to that boy? He turned over a new leaf. He distinguished himself as the best student in his class. He never forgot that episode. He never forgot his teacher. Rev. Arul Swamy was a great teacher indeed!
4. Hans Christian Anderson, the Story Teller:

It is said that the Danish People are proud of their shipping industry and dairy products. Niels Bohr, the great scientist and Hans Christian Anderson, the great story-teller also belonged to Denmark. Anderson was born in a small village in Denmark on April 2, 1805. His parents were very poor. Anderson was ugly-looking. But, he had a fine mind. He loved story-writing. An old woman in his village said to him one day, "You will become world-famous one day. Your village will be illuminated in your name." He was greatly encouraged even though he was only aged seven.

Anderson had very little schooling because of his poverty. But, he had an ambition to become a great poet as well as an actor. He approached a famous actress in Copenhagen and requested her to train him an actor. She drove him away in contempt. Anderson never felt discouraged. He was determined to succeed in life. Someone advised him to learn carpentry as he was not cut out for anything better. While Anderson felt humiliated upon such advice, the prophecy of the old woman constantly urged him to work for a bright future.

Anderson was gifted with a sweet voice. Impressed by his voice, one good woman taught him music. As ill-luck would have it, he lost his voice due to a bad cold. He started writing verses. But no one liked his compositions. He began writing one-act plays. Luckily, one of his plays was printed in a magazine. That was the first sign of success in his life. A famous director of plays came forward to help Anderson.
He helped him continue his education. Because of his ugly looks, poor Anderson was the butt of ridicule in his class, and had to stop going school.

Anderson attracted children by narrating stories. He had a charm of his own while recounting stories on birds and animals. Children surrounded him spontaneously. He was an honoured guest in many homes. Children became his friends. Anderson still remained poor. His only possession was a torn coat. Inspite of the poverty he was determined to make a success of life.

Anderson travelled widely in Europe in search of a fortune. He got a brain-wave. He thought of putting in book-form many stories that filled his imagination. He wrote a book of stories for children and got it published with great difficulty. This book made him famous overnight. The stories were so charming that they were translated into many languages. Every publisher was eager to publish his stories. On every Christmas Day, Anderson released a book of stories. He went on writing stories for thirty seven years till his death on August 4, 1875.

Have you read any of Anderson's stories? You should read 'Anderson's Fairy Tales'. You will enjoy reading them. Such good books not only lead us to the Wonder World of Books, but also inspire us to achieve many things in life.

Anderson fulfilled the prophecy of the old woman by becoming world famous. His village was illumined in his honour. By his heroic determination he could overcome the handicaps in his life. He is Denmark's gift to the Magic World of Books.
5. Srinivasa Ramanujam:

To many of us, mathematics seems to be a tough subject. Some of us are really scared of it. Quite a few would love it. To these people, mathematics may be a hobby. They find it a delightful pastime. One such person was Srinivasa Ramanujam.

Ramanujam is considered to be one of the great mathematicians of the world. He was born on December 22, 1887. His family was very poor. His father was a clerk in a shop. Even as a boy, Ramanujam had a liking for mathematics. While at school, he used to borrow advanced books on mathematics from college students. He would spend all his leisure in solving problems and discovering puzzles and theorems. But, he was so poverty-stricken that he couldn't even afford to buy note-books. He would note down his discoveries in scraps of papers. His love of mathematics made him neglect other subjects. So, he failed in his first year of college. He lost his scholarship. His father also died. He had to support his wife and mother. He went in search of a job. With great difficulty he could secure the job of a clerk at the Port Trust, Madras. His love of mathematics, however, continued. Even during his sleep he would be dreaming of new problems and ideas. He would wake up at midnight and jot down those ideas.

Ramanujam used to send his discoveries to leading mathematicians. Very few cared to reply him. Sometimes, he would feel depressed at the indifference of such great men. But, that did not deter him from his earnest efforts. He was working for the sheer love of it.
One of the papers of Ramanujam reached Prof. Hardy, a renowned Professor of Mathematics in London University. He found in Ramanujam a mighty genius. He lost no time in securing a scholarship for Ramanujam to work in his university. At last, Ramanujam had the chance of his life to do what he loved most. Being an orthodox man he had certain inhibitions on making a sea-voyage. Therefore, he was rather hesitant to accept Prof Hardy’s offer. Meanwhile Ramanujam’s mother had a dream in which the family Goddess blessed her son’s voyage. Ramanujam sailed to England in 1913.

Prof Hardy became his teacher as well as a co-worker. He was very proud of his promising student. He introduced Ramanujam to the leading mathematicians of Europe. Ramanujam did wonders in mathematics and won many honours. He was the first, youngest Indian to be elected Fellow of the Royal Society of England.

Ramanujam had a health set-back. He fell a victim to consumption. Poverty in his early life had damaged his health very much. When he was admitted into a Sanatorium, Prof. Hardy visited him one evening. Casually he remarked that he came by a taxi bearing a dull number - 1729. Upon hearing this Ramanujam’s face glowed with joy. Immediately he remarked that it is the most fascinating number - the smallest number that can be expressed as the sum of two cubes (10^3 + 9^3 or 12^3 + 1^3). Prof Hardy was thrilled. Such was Ramanujam’s love of numbers! This number is known as ‘Ramanujam’s number’.
Ramanujam returned to India in 1919. He did not completely recover from his illness. He died on 26th April 1920. Until his death he was absorbed in solving and discovering mathematical problems. Some of the problems posed by him still remains unsolved. Perhaps some young men like you may solve them some day.

The Government of India award a number of merit scholarships for bright students. There are schemes like National Science Talent Search which would help bright youngsters to continue their studies beyond school. Such facilities were not available in Ramanujam's days. He had to die at the prime age of thirty-two. What a loss to our nation! Bright students need encouragement. They are the persons that make a nation great and strong.
6. Sir C.V. Raman, The Great Physicist:

"Do you belong to this class?"

"Yes, Sir."

"What is your name?"

"Raman."

"How old are you?"

"Thirteen."

This conversation took place between a Professor in Presidency College, Madras and C.V. Raman. He was the youngest but the most brilliant boy in his class. First rank was his monopoly. Whenever he would stand up in the class his professors were a little nervous. His questions would be thought-provoking. He would astonish his professors by posing questions and answering them as well. Even as a student he contributed research papers to the leading Science Magazines.

Soon after his graduation he secured a job in the Finance Department of the Government of India. He served in it for nearly a decade. At the same time he was pursuing his scientific studies as a hobby. His papers were published in International Journals.

Raman received an invitation to head the Department of Physics in Calcutta University. Even though he enjoyed a better-paid, secure Government Service, Raman preferred to be a Professor on a lesser salary. He loved science more than anything in life.
Raman had many-sided interests. He had a wonderful collection of butterflies from different parts of the world. He had a collection of rare crystals and diamonds. He loved flowers and always maintained a beautiful garden as part of his laboratory.

Raman did most of his experiments with the simplest equipment. One of his famous findings is called 'Raman Effect' - when a beam of light passes through a liquid or a gas, it is scattered and the frequency of some of the scattered light is changed. Raman won the Nobel Prize for this discovery in 1930.

Raman joined the Indian Institute of Science in Bangalore as a Professor and subsequently became the Director. Later on, he built a laboratory of his own and named it 'Raman Institute of Science'.

Raman was a great teacher. He could explain the most difficult things in Science in the simplest language that even youngsters can understand. He had a fine sense of humour. His lecturers were inspiring. He trained several batches of young men in scientific research. His passion for research was so much that even at the age of eighty he would work 18 hours a day in his laboratory. In his younger days he had to carry on his experiments with very little equipment. A man's biggest equipment is his mind. If a person has the will to do a thing he will do it in spite of all the difficulties. If he does not have the will no amount of costly equipment will make him achieve anything.

Now, there is plenty of encouragement for scientists. There are many National Laboratories all over India and these laboratories have
the most modern equipment. But, Raman felt sad when the young scientists did not put this equipment to proper use. He once described these National Laboratories as so many Taj Mahals where costly equipment lay buried.

We all must feel inspired by the example of Raman and make up our mind to make India advance in science. We can do it if we feel the "Call of Science" as Raman felt.
When Gauss was attending school in Germany, his teacher gave a problem. Just to keep everyone busy for some time, he asked the students to add up all the numbers from 1 to 100. Gauss came out with the answer in a moment to the surprise of everyone. He came out with the formula, \( \frac{1}{2} n ( n + 1 ) = S \), where 'S' is the sum and 'n' the last number of a sequence.

Carl F. Gauss was born in a farmer's family in Germany in 1777. His father was so poor that he couldn't afford to educate his son beyond school. The family could not even own a lamp. But the boy had an enormous will to fight his poverty and continue his studies. His teacher was greatly impressed by his mathematical skill. He accompanied the boy to his house to meet his father. He told the father that his son would blossom out to be a wizard in mathematics. He needed full freedom and encouragement to pursue his interests. Instead of feeling elated over the teacher's remark, Gauss's father was rather sad and replied that he needed the boy to help him in farming. However, rather reluctantly he followed the advice of the teacher and allowed his son to pursue his studies.

Despite his poor parentage, Gauss could think of a number of puzzles in mathematics. The most outstanding was his contribution to statistics. He invented the method of 'least squares'. He applied this method to discover the most probable correct reading out of a large mass of data. If we measure the heights of all the students in a school and plot the readings
on a graph, we would get a 'bell-shaped' curve. A similar curve would be obtained if the marks of all the students in an examination are plotted on a graph. Students of average height or average ability form the majority as shown by the 'high middle' of the bell-shaped curve. The tall and the short ones will be confined to the two sides of the curve as they form a small minority. The plotting of a large number of readings in trends in Economics and other human affairs gives generally a bell-shaped curve. It is called the 'Gaussian Curve'. From this curve, Gauss formulated the 'Law of normal distribution of errors' which can mathematically predict the trend of occurrences of any entity.

Gauss described mathematics as the queen of sciences. His immortal work was on theory of numbers. He invented 'imaginary numbers'. The secret of his success was his power of concentration. In a moment he would get absorbed in his work and forget the surroundings. It is indeed a great boon to any scholar. Sometimes he would become absent-minded. One day he was deeply absorbed in his work when his servant rushed into his room to inform that his beloved wife was dying. Absent-mindedly Gauss muttered, "Tell her to wait until I have finished here".

The Germans are very proud of Gauss. Once Laplace, the great French mathematician was addressing an assembly of learned men. He was asked to name an eminent mathematician of Germany. Laplace named someone. The audience was surprised and exclaimed: "Not Gauss?" "Oh!" replied Laplace, "Gauss is the greatest mathematician of the world!".
Gauss died in 1855. Even in his old age he remembered with gratitude the teacher who recognized the genius in him and advised his father to encourage him pursue his studies. If that teacher had not intervened at the right moment, most probably Gauss would have been a farmer, following the footsteps of his father. What a loss would it have been to the world of mathematics! The teacher fostered the genius of the boy and introduced him to the Duke of Brunswick. The Duke became the benefactor of the boy and financed his college education and mathematical pursuits.
ITEMS USED IN THE QUIZ PROGRAMMES DURING THE COUNSELLING SESSIONS

II. General Knowledge:

1. What is the approximate Exchange Value of a US Dollar in Indian Currency?

2. If you fill the balloon with certain gas, it will go up. What is that gas?

3. Name any five wonders of the world.

4. Which Railway Station in India has the longest platform?

5. In Cinema Houses, you find a number of red-coloured containers to prevent fire accidents. What are they called?

6. What is meant by a fortnightly journal?

7. In radio, why is the reception clearer during nights than during day time?

8. Who is the Governor of the Reserve Bank of India?

9. Name a prominent Indian Writer who writes humorous stories in English?

10. In which place (town) in South India, crackers are manufactured in plenty?

11. Mention the place where the Asian Games took place recently.

12. Recently an important official from the USA visited India. After his visit the relation between India and the USA has become more cordial. Who is he? What is he?

13. Name the currency used in the following countries: Italy; Japan; Germany and France.

14. With which country India should have played Davis Cup Tennis Finals? Why did India not play?

15. Who was the Captain of the West Indies Cricket Team that visited India recently?

16. How many political parties are there in the USA?

17. Recently, a notable Russian Writer who won the Nobel Prize for Literature was compelled to leave his country. Who is he?

18. What is a Sonnet?
II **Mathematics:**

1. A's income is twice that of B and half that of C. What is the ratio of the incomes of A B C?

2. I am a number. My square root and the square are also equal to me. Who am I?

3. What is the angle between the diagonals of a Rhombus?

4. How many times the volume will be increased if the radius of a sphere is doubled?

5. How many sides are there in a hexagon?

6. What is the reciprocal of 1/x?

7. What is the intersection of two vertical planes?

8. What is the name of a set of circles having the same centre?

9. What is the name of a chord which passes through the centre of a circle?

10. What is the dimension of a point?

11. What is the dimension of a line?

12. Subtract x from -x.

13. What is the graph of a first degree linear equation in general?

14. A small square is formed by taking the middle points of the sides of a square. What is the area of the smaller square?

15. In which quadrant the point (-2, -4) lies?

III **Physics:**

1. What is rectilinear propagation of light?

2. What are the constituent colours of white light?

3. What is meant by reflection of light?
4. What is refraction?

5. Which colour deviates most when a ray of white light gets dispersed?

6. What is meant by the critical angle of incidence?

7. What is a real image?

8. What is a virtual image?

9. What is that substance which allows all the light falling on it to pass through?

10. What is that substance which does not allow any light to pass through?

11. What is that substance, which allows a part of the incident light to pass through, absorb a part of it, and reflect the rest?

12. What do you call the rays that move toward a common point?

13. Which colour is found at the top in a rainbow?

14. What is meant by multiple images?

15. Name the phenomenon of light on which the motion pictures are based.

16. Which is the branch of science that deals with the study of light and its spectra?

17. What instrument is used for seeing distant objects?

18. What is the instrument used for seeing enlarged images of minute objects?

19. What is meant by the pitch of a sound?

20. What is meant by a percussion instrument?

21. What is a magnet?

22. State the law of magnetic poles.

23. What instrument is used for detecting electric charges?

24. Name the unit for the rate of flow of electric current.
25 Name the unit of electrical resistance.

26 What is meant by a battery of cells in series?

27 Name the substance used as filament in the electric bulbs.

28 What is meant by electroplating?

29 What is meant by electro-magnetic induction?

30 What is meant by atomic fusion?

31 What is meant by Nuclear fission?

32 Give the formula representing the theory of relativity of matter and energy.

**Biology**:

1. In which part of the lungs does the exchange of gases between the blood and air take place?

2. Name the respiratory pigment present in the blood.

3. What is the percentage of oxygen in the expired air?

4. By which process does the oxygen enter the blood in the alveoli of lungs?

5. When the food is swallowed, what prevents it from entering into the Larynx?

6. What structures help the windpipe to remain open normally?

7. What happens to the rate of breathing when the blood contains more than the normal amount of carbon-di-oxide?

8. What are the organs of excretion located in the skin?

9. Name the pigment that is responsible for the colour of the skin?

10 What are the two main layers of the skin?

11 Apart from excretory function, in what other way evaporation of sweat is useful to the body?
12 Where are the kidneys located?
15 What is meant by 'active transport'?
14 What is the function of sensory nerves?
15 What is the function of motor nerves?
16 Name the three parts of the brain.
17 What is reflection?
18 Which part of the brain controls thought and memory?
19 What is the name given to the functional connections between the two nerve fibres?
20 What cells in the retina are sensitive to dim light?
21 Which area in the retina is most sensitive to light?
22 Name the three bones in the middle ear.
25 What type of lens are used to correct the defect of short-sightedness?
24 Name the membrane that separates the outer ear from the middle ear.
25 What organs in the ear are concerned with the balancing of the body?
26 Name the secretion of the ductless glands.
27 Which endocrine gland is called the 'master gland'?
28 What is meant by goiter?
29 Where are the adrenal glands located?
30 What are insectivorous plants?
31 What are the two phases in photosynthesis? In which phase is oxygen released?
32 Which hormone is responsible for controlling sugar in the blood?
33 Which hormone is responsible for activating the white corpuscles?
34 Which part of the potato plant is modified into a tuber?
35 Why does the banyan tree have prop roots?

36 What are the main functions of the leaf?

37 What is the name given to the group of animals having no backbones?

38 What are Lichens?

39 To which phylum do the unicellular animals belong?

40 To which phylum do the sponges belong?

41 What do you call the openings found on the surface of the leaves?

42 What are the raw materials required by the green plants for photosynthesis?

43 What do you call the plants that depend upon other living organisms for their food?

44 Why is a mushroom called a saprophyte?
Geography:

1. Which is the northern most point of Europe?
2. Which is the 'Land of Midnight Sun'?
3. Name the country which is called the 'Emerald of Isle'.
4. Which is the 'Playground of Europe'?
5. Which is the 'Land of Thousand Lakes'?
6. Name the International river of Europe that ends in Black Sea.
7. What is the mountain range that runs through the middle of Peninsular Italy?
8. Which is the biggest peninsula of Europe?
9. Name the Canal that connects the Baltic Sea with the North Sea?
10. Which is the river that joins the Five Great Lakes of North America with the Atlantic Ocean?
11. What is the name of the Warm Ocean Current that flows along the Northern part of the West Coast of North America?
12. Which is the important ship-building Centre of USSR?
13. Name the important industry of Lyon.
14. Which is the largest city in Mexico?
15. What is the type of climate that is found in California?
16. What is the term used to indicate the continuous line of urban settlement in the USA?
17. Name the world's largest meat-packing centre.
18. Which is the automobile manufacturing centre of United Kingdom?
19. What do we call the temperate grass lands of North America?
20. Name the most important mineral that is exported out of Sweden.
21. Which is the granary of USSR?
22 Name the important river of Norway.

23 What is the name of the waterfall that separates Canada from the USA?

24 Name the largest sugar exporting country of the world?

25 Which is the 'New York of Canada'?

26 Which is the capital city of Costa Rica?

27 Name the chief dairy-farming nation in the world?

28 Which is the country whose large portion of land lies below the sea-level?

29 Which is the 'Fashion-centre' of the world?

30 Name the highest active volcano in the world.

VI History:

1. Who was the first Pharaoh?

2. Which was the first capital of Ancient Egypt?

3. Who built the Great Pyramid?

4. What were the preserved dead bodies of the ancient Egyptians called?

5. Name the most important Egyptian God.

6. Name the famous temple near Thebes.

7. Name the most famous Egyptian sculpture.

8. What is the writing of the Egyptians called?

9. Who built the Hanging Gardens of Babylonia?

10 Name the Chief God of the Babylonians.

11 What is the writing of the Babylonians called?

12 Name the Mesopotamian king who had a large collection of clay-books.
13 Who was the great Chinese Philosopher?
14 Name the longest structure ever built by man.
15 What is the writing of the Chinese called?
16 Where was Jesus Christ born?
17 How did the Jews call the Non-Jews?
18 What is the sacred symbol of the Christians?
19 Name the term used to refer the rise of Jesus from the tomb on the third day after crucifixion.
20 Name the part of the Bible that tells us the life of Jesus and His Teachings.
21 Name the famous sermon that contains noble ideas.
22 When was Prophet Mohammad born?
23 What is the name of the holy shrine in Mecca?
24 Does Islam believe in Monotheism or Polytheism?
25 What is the flight of Mohammad from Mecca to Medina called?
26 Who were the successors of Mohammad?
27 When did Constantinople fall into the hands of the Turks?
28 Where did Renaissance first begin in Europe?
29 Name the artist who painted 'The Last Supper'.
30 Who was the great Italian Sculptor?
31 Who invented Telescope?
32 Name the founder of Modern Astronomy.
33 Name the scientist who proved that the planets revolve around the sun in elliptical orbit instead of circular orbit.
34 Where was the first Printing Press set up in Europe?
35 Name the first printed book.
36 Who wrote 'Utopia'?
37 Who is the Head of the Roman Catholic Church?
38 What is the popular revolt against the church called?
39 Who was the most important among the Protestants?
40 What was the letter of Pardon granted by the Pope called?
41 Who was the leader of the Protestant Movement in Switzerland?
42 What is the revival of Catholic Religion called?
43 Who was the founder of the 'Society of Jesus'?
44 Who was the first European to cross the Atlantic?
45 Who discovered the sea-route to India from Europe?
46 Who named the southern tip of Africa 'Cape of Storms'?
47 When did the Portuguese reach India?
48 Where did the Portuguese first land in India?
49 Who gave the name 'Pacific Ocean'?
50 Which was the first ship to sail around the world?
51 Which is the 'Mother of Parliament'?
52 Name the document that King John had to sign by force?
53 What is the Upper House of the British Parliament called?
54 Who was the commander of the 'Modal Army'?
55 Name the king who was beheaded during the Civil War in England?
56 When was the Equal Franchise Act passed in England?
57 Name the first English Colony in America.
58 When was the English East India Company founded?
59 Where was the first English factory set up in India?
60 Who were the first Europeans who tried to build up an empire in India?
61 When was the battle of Flassey fought?
62 Who was the first President of USA?
63 Who passed the Regulating Act?
64 By what Treaty, Britain recognised the independence of USA?
65 When did USA become independent?
66 Who was the king of France at the time of French Revolution?
67 Which was the event that marked the beginning of French Revolution?
68 Who introduced the metric system of measurement in France?
69 When was the battle of Waterloo fought?
70 "First in War, first in Peace and first in the hearts of the Citizens" To whom does it refer?

VII Civics:

1. What is the rule of the nobility called?
2. Name the occupation of the majority of people in India.
3. Where is the Nuclear Power Station in Tamil Nadu located?
4. In which state is the Hiracud dam constructed?
5. In which district of Karnataka the 'Package Programme' is in operation?
6. Name the voluntary gift movement started by Vinobha Bhave?
7. Where is the steel plant located in Madhya Pradesh?
8. Where was the first Public Sector Fertilizer Plant started?
9. When did the untouchability offence Act come into force?
10 Name the organisation started by the Government to secure jobs for the jobless.
11 Who is the connecting link between the employers and the employees in industrial concerns?

12 Who is the Supreme Commander of the Armed Forces?

13 Which is our second line of defence?

14 How many languages have been recognised as the National Languages of India?

15 On what basis India is divided into many states?

16 Who was responsible for bringing secularism in Indian Administration?
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Table showing the Pre-test and Post-test Academic Achievement Scores of the (A) Counselling Underachievers, (B) Non-Counselling Underachievers and (C) Non-Counselling Normal Achievers

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Table showing the Pupils' Raw Scores in the Group Test of Scholastic Abilities (GTSA), Academic Achievement Test (Ac.Ach), and the Predicted Achievement Score (Pred.Ach) using the Regression Equation Formula.

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Table showing the Pre-test and Post-test Academic Achievement Scores of the (A) Counselling Underachievers, (B) Non-Counselling Underachievers and (C) Non-Counselling Normal Achievers.

Major Study $N = 90$

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