SAMPLE PAPER

Aakash National TALENT HUNT EXAM 2015 JUNIOR
(Class VII, VIII & IX Studying Students)

Science, Mathematics & Mental Ability विज्ञान, गणित एवं मानसिक योग्यता

Aakash Medical | IIT-JEE | Foundations
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New Delhi-110075 Ph.: (011) 47623456
SECTION - A : SCIENCE

1. How many times do the pulse of a normal healthy human adult at rest, beat in 20 seconds?
   (1) 12 times  (2) 24 times
   (3) 36 times  (4) 72 times

2. The odometer of a car reads the following distances at the given instants. The ratio of average speed of the car in the first and the second intervals is

<table>
<thead>
<tr>
<th>Time</th>
<th>Odometer reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 : 45 AM</td>
<td>4404 km</td>
</tr>
<tr>
<td>10 : 15 AM</td>
<td>4449 km</td>
</tr>
<tr>
<td>10 : 30 AM</td>
<td>4469 km</td>
</tr>
</tbody>
</table>

   (1) 9 : 8  (2) 8 : 9
   (3) 9 : 2  (4) 2 : 1

3. The bob of a simple pendulum takes a total time of 1.5 s to go from B to A and then from A to O as shown. How long will it take to complete 20 oscillations?

   (1) 15 s  (2) 20 s
   (3) 30 s  (4) 40 s
4. In order to place two given cells in the battery compartment of a torch, the connections are made by connecting the shown points in the order (A - (Q - P) - (S - R) - B)

5. The gas present in the atmosphere which protects us from the harmful ultraviolet radiations coming from the sun is
   (1) Oxygen        (2) Ozone
   (3) Carbon dioxide (4) Nitrogen

6. Which of the following substances can be added to the soil to reduce its basic nature?
   (1) Quick lime
   (2) Organic matter
   (3) Slaked lime
   (4) Magnesium hydroxide

7. Which of the following conditions are essential for rusting?
   (i) Presence of air
   (ii) Presence of moisture
   (iii) Presence of sunlight
   Mark the correct option.
   (1) (i) & (ii)        (2) (ii) & (iii)
   (3) (i), (ii) & (iii) (4) (i) & (iii)

Space for Rough Work
8. Which of the following processes do not show neutralization?
   (i) Intake of milk of magnesia during indigestion
   (ii) Rubbing calamine solution on skin to get relief from ant bite
   (iii) Addition of turmeric in soap solution
   (iv) Dissolving lime in water
   (1) Both (i) & (ii)  (2) Both (ii) & (iii)
   (3) Both (iii) & (iv)  (4) Both (i) & (iv)

9. Which of the following processes do not show neutralization?
   (i) Intake of milk of magnesia during indigestion
   (ii) Rubbing calamine solution on skin to get relief from ant bite
   (iii) Addition of turmeric in soap solution
   (iv) Dissolving lime in water
   (1) Both (i) & (ii)  (2) Both (ii) & (iii)
   (3) Both (iii) & (iv)  (4) Both (i) & (iv)

9. Match the following and choose an appropriate option.

<table>
<thead>
<tr>
<th>Column-I</th>
<th>Column-II</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Cuscuta</td>
<td>(i) Insectivorous plant</td>
</tr>
<tr>
<td>b. Pitcher plant</td>
<td>(ii) Symbiotic relationship</td>
</tr>
<tr>
<td>c. Mushroom</td>
<td>(iii) Parasitic plant</td>
</tr>
<tr>
<td>d. Lichen</td>
<td>(iv) Saprotrophic</td>
</tr>
<tr>
<td>(1) a(i), b(ii), c(iii), d(iv)  (2) a(i), b(iii), c(iv), d(ii)</td>
<td></td>
</tr>
<tr>
<td>(3) a(iii), b(ii), c(i), d(iv)  (4) a(iii), b(i), c(iv), d(ii)</td>
<td></td>
</tr>
</tbody>
</table>

10. Breakdown of glucose in the absence of oxygen leads to the formation of
    (1) Alcohol and carbon dioxide
    (2) Lime and water
    (3) Carbon dioxide and water
    (4) Water and alcohol

11. The fleshy muscular organ attached at the back of the floor of buccal cavity is
    (1) Tongue  (2) Small intestine
    (3) Liver  (4) Oesophagus

12. While playing, Ram injured his knee and it started bleeding. But after sometime, the cut was plugged by a dark red clot and bleeding was stopped. This occurred due to
    (1) Red blood cells  (2) Platelets
    (3) White blood cells  (4) Plasma
13. In the given figure, BC is

<table>
<thead>
<tr>
<th>Option</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>12 cm</td>
</tr>
<tr>
<td>(2)</td>
<td>$4\sqrt{41}$ cm</td>
</tr>
<tr>
<td>(3)</td>
<td>18 cm</td>
</tr>
<tr>
<td>(4)</td>
<td>$2\sqrt{41}$ cm</td>
</tr>
</tbody>
</table>

14. Which of the following is not true?

<table>
<thead>
<tr>
<th>Option</th>
<th>Statement</th>
<th>Truth</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>$5 : 25 = 20%$</td>
<td>True</td>
</tr>
<tr>
<td>(2)</td>
<td>$0.27% = 0.0027$</td>
<td>True</td>
</tr>
<tr>
<td>(3)</td>
<td>$7.4% = 37 : 50$</td>
<td>True</td>
</tr>
<tr>
<td>(4)</td>
<td>$18 : 72 = 25%$</td>
<td>False</td>
</tr>
</tbody>
</table>

15. The number that should be added to $\frac{5}{36}$ to get $4 \frac{1}{36}$ is

<table>
<thead>
<tr>
<th>Option</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>$\frac{2}{36}$</td>
</tr>
<tr>
<td>(2)</td>
<td>$\frac{225}{36}$</td>
</tr>
<tr>
<td>(3)</td>
<td>$\frac{73}{36}$</td>
</tr>
<tr>
<td>(4)</td>
<td>$\frac{1}{36}$</td>
</tr>
</tbody>
</table>

16. If $x$ is the reciprocal of $y$, then $\frac{x+y}{x-y}$ is equal to

<table>
<thead>
<tr>
<th>Option</th>
<th>Expression</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>$\frac{1+y}{1-y}$</td>
</tr>
<tr>
<td>(2)</td>
<td>$\frac{1+y^2}{1-y}$</td>
</tr>
<tr>
<td>(3)</td>
<td>$\frac{1+y^2}{1-y^2}$</td>
</tr>
<tr>
<td>(4)</td>
<td>$\frac{1+y}{1-y}$</td>
</tr>
</tbody>
</table>

Space for Rough Work
17. Which of the following equations represents the statement, “Three subtracted from two-fifths of \(p\) is three”?

- (1) \(3 - \frac{2}{5}p = 3\)
- (2) \(3p - \frac{2}{5} = 3\)
- (3) \(\frac{2}{5}p - 3 = 3\)
- (4) \(\frac{2}{5} - 3p = 3\)

18. After 35 years, Rohan will be 8 times as old as he is now. The present age of Rohan is

- (1) 5 years
- (2) 7 years
- (3) 4 years
- (4) 8 years

19. In the given figure, if \(BC \parallel DE\), then the value of \(y\) is

- (1) 107°
- (2) 27°
- (3) 100°
- (4) 73°

20. Which of the following is not equivalent to \(\frac{2}{5}\)?

- (1) \(\frac{12}{30}\)
- (2) \(\frac{34}{85}\)
- (3) \(\frac{54}{135}\)
- (4) \(\frac{62}{165}\)
21. In the figure given below, box ‘a’ has 2 coins, box ‘b’ has 3 coins, box ‘c’ has 5 coins, box ‘d’ has 7 coins box ‘e’ has 11 coins and so on. How many coins will be in box ‘i’?

\[
\begin{array}{ccc}
  a & b & c \\
  d & e & f \\
  g & h & i \\
\end{array}
\]

(1) 21  (2) 27  
(3) 23  (4) 29

22. In the given figure, the maximum number of triangles is 
(1) 9  
(2) 6  
(3) 8  
(4) 10

23. Find the water image of PQRST
(1) \(\overline{TSRQP}\)  (2) \(\overline{QRSTP}\)  
(3) \(\overline{TSRQP}\)  (4) \(\overline{QRSTP}\)

24. Find the missing character.

\[
\begin{array}{ccc}
  3 & D & \? \\
  12 & M & U \\
\end{array}
\]

(1) 21  (2) 22  
(3) 20  (4) 19

25. If 5 = 23 and 9 = 79, then 12 = ?
(1) 145  (2) 142  
(3) 144  (4) 146

26. If 5 = 23 and 9 = 79, then 12 = ?
(1) 145  (2) 142  
(3) 144  (4) 146
Our Results of Medical & Engg. Ent. Exams. 2015

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