

**GIMs - Genesis Ignited Minds Scholarship Test
8th Moving 9th (CBSE)**

Time: 2 Hours 30 Minutes.

M.M.: 201

General Instructions for the Paper

- Answers have to be marked on the OMR sheet provided.
- Blank Papers, Cell phones & Calculators are not allowed inside the hall.
- Marking Scheme:-
 - Objective Section (Section A to E)
Each Objective question from Section A to E carries +2 marks
No Negative marking for wrong answers.
 - Subjective Section (Section A to D)
Each subjective question from section A to D carries 5 marks.
 - Section F - Mental Ability
Each question in Section F carries 3 marks



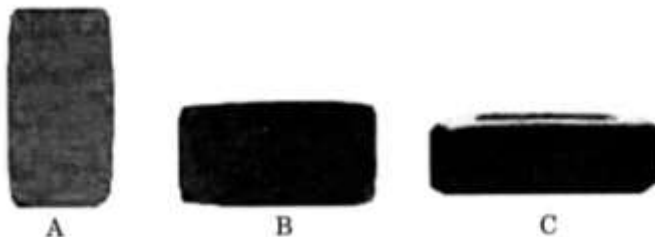
Genesis Branches

SCO -294, Sector-20, Panchkula
SCO -13, Sector-15, Panchkula
SCO - 17, VIP Road, Zirakpur (Near Nand Sweets)
Helpline No: 9041056405 & 7696016405

Section A [Physics]

1. Which of the following statements about pressure is incorrect?
(a) Pressure in fluids acts equally in all directions.
(b) Pressure depends only on area, not on force.
(c) Pressure in a liquid increases with depth.
(d) Pressure is transmitted undiminished in enclosed liquids.
2. A tuning fork vibrates at 512 Hz. The wavelength of the sound in air (speed = 340 m/s) is –
(a) 0.66 m (b) 0.59 m (c) 0.72 m (d) 0.45 m
3. Which of the following is not a safety measure during lightning?
(a) Taking shelter under a tall tree
(b) Staying indoors
(c) Avoiding use of electrical appliances
(d) Sitting inside a car
4. In a plane mirror, if you move 1 m towards the mirror, the image moves –
(a) 1 m away (b) 2 m towards (c) 2 m away (d) 1 m towards
5. A hammer hits a nail with a force of 50 N. The nail exerts on the hammer –
(a) No force (b) Equal and opposite force of 50 N
(c) Greater force (d) Smaller force
6. If the force on an area of 0.5 m^2 is 200 N, the pressure is –
(a) 100 Pa (b) 400 Pa (c) 200 Pa (d) 600 Pa
7. When you push a heavy box and it just starts to move, the friction acting at that moment is –
(a) Rolling friction (b) Kinetic friction
(c) Static friction (limiting value) (d) Sliding friction
8. Match the following:
1-Lubrication
2-Grooved tyres
3-Ball bearing
4-Sports shoes soles
(a) Increases friction
(b) Reduces friction
Correct match is –
A. 1-a, 2-b, 3-b, 4-b B. 1-b, 2-a, 3-b, 4-a
C. 1-a, 2-a, 3-a, 4-b D. 1-b, 2-b, 3-b, 4-a

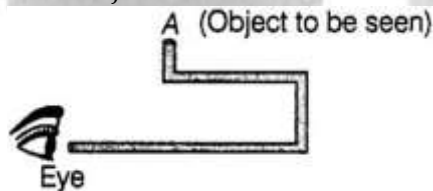
9. If a negatively charged ebonite rod is brought near an uncharged metal sphere, the sphere becomes –
 (a) Positively charged near the rod (b) Negatively charged near the rod
 (c) Neutral throughout (d) Positively charged overall
10. A brick is kept in three different ways on a table as shown in given figure. The pressure exerted by the brick on the table will be



- (a) Maximum in position A (b) Maximum in position C
 (c) Maximum in position B (d) Equal in all cases

Subjective Questions

1. (a) What happens to the motion of an object if equal and opposite forces act on it? (1 mark)
 (b) State and explain the relation between pressure, force, and area. (1 mark)
 (c) A boy presses a toy balloon with his thumb. Explain why the pressure increases even though the force remains constant. (1 mark)
 (d) Why does a woman wearing high heels sink more into sand than a man wearing flat shoes? (1 mark)
 (e) Explain how a liquid exerts pressure on the walls and bottom of its container. (1 mark)
2. Yakub planned an activity to observe an object A through pipes as shown in figure, so that he could see objects which he could not directly see.



- (i) How many mirrors should be used to see the objects?
 (ii) Indicate the position of mirrors in the image.
 (iii) What must be the angle with respect to the incident light at which he should place the mirror?
 (iv) Indicate the direction of rays in the figure.
 (v) If any of the mirrors is removed, will he be able to see the object?

3. (a) Explain how charges are transferred during lightning. (2 marks)
(b) Describe how a lightning conductor protects a building. (2 marks)
(c) Why is it safer to sit inside a car during a thunderstorm than under a tree? (1 mark)
4. (a) Define amplitude, frequency, and time period of a sound wave. (2 marks)
(b) Sound travels at 340 m/s. What is the wavelength of a sound of frequency 170 Hz? (1 mark)
(c) Why can sound not travel through a vacuum? (1 mark)
(d) Explain how loudness of a sound depends on amplitude. (1 mark)

SECTION - B [Chemistry]

1. When electric current is passed through copper sulphate solution using copper electrodes –
(a) Both electrodes gain mass
(b) Copper gets deposited on cathode
(c) Copper gets deposited on anode
(d) The solution turns colorless immediately
2. In electroplating of silver on a key, the key should be connected to –
(a) Positive terminal of the battery (b) Negative terminal of the battery
(c) Both terminals alternatively (d) Neutral point of circuit
3. A fuel has a high calorific value but also high ignition temperature. Which statement about its usage is correct?
(a) It cannot be used for domestic purposes without external ignition aid
(b) It produces least pollution
(c) It burns spontaneously in air
(d) It is an ideal fuel for emergency lamps
4. Which of the following combinations represents correct agricultural practice sequence?
(a) Sowing → Harvesting → Threshing → Irrigation
(b) Harvesting → Sowing → Threshing → Storage
(c) Ploughing → Levelling → Sowing → Irrigation → Weeding → Harvesting
(d) Levelling → Sowing → Ploughing → Weeding → Storage
5. In a region with irregular rainfall, which irrigation method minimizes both water loss and soil salinization?
(a) Canal irrigation (b) Sprinkler irrigation
(c) Drip irrigation (d) Flood irrigation

6. The calorific value of LPG is 55000KJ/kg. The heat produced by combustion of 10 g LPG is-
- (a) 55KJ (b) 550KJ (c) 5500KJ (d) 550000KJ
7. Which of the following does not produces a flame on burning?
- (a) Camphor (b) Charcoal (c) Kerosene (d) CNG
8. Which of the following fuels has the highest calorific value?
- (a) Petrol (b) Diesel (c) Coal (d) CNG
9. The process of purification of impure metal is like:
- (a) Electroplating a metal on the same type of metal
(b) Electroplating a metal on another type of metal
(c) Producing a chemical compound by electrolysis
(d) Decomposing a chemical compound by electrolysis
10. To obtain a coating of silver metal on a spoon made of copper, the electrolyte has to be:
- (a) Silver nitrate solution (b) Copper nitrate solution
(c) Sodium nitrate solution (d) Copper sulphate solution

Subjective Type Questions (5 Marks for Each)

1. (a) A farmer grows wheat on the same field every year. After some years, the crop yield becomes less, even when fertilizers are added.
Why does this happen? Explain with reason and suggest two ways to make the soil fertile again.
- (b) A farmer lives in an area where rainfall is irregular.
Which irrigation system should he use to save water and get a good yield? Explain why this system is better than others.
2. (a) Fossil fuels like coal and petroleum take millions of years to form.
Why are they called non-renewable sources of energy? Write two ways by which we can reduce our dependence on fossil fuels.
- (b) The government decides to replace diesel buses with CNG buses in a city.
Do you think it is a good idea? Give scientific reasons in terms of pollution, energy use, and long-term benefits.
3. (a) A candle flame has different colored zones.
Describe the three main zones of the flame and explain why the outermost zone is the hottest part.

- (b) A student tries to put out a kerosene fire by pouring water on it.
Explain why this method is dangerous. What should be done instead to safely control such a fire?
4. (a) When electric current is passed through copper sulphate solution using copper electrodes, the blue color of the solution does not change.
Explain why this happens in simple terms.
- (b) You have to electroplate a steel spoon with copper.
Which material will you use for the electrodes and the electrolyte? Draw a simple labeled diagram and explain how the process takes place.

SECTION - C [Biology]

1. When a forest is cleared for farming, bird species decline mainly because —
(a) Birds lose oxygen
(b) Lack of sunlight
(c) Destruction of nesting and feeding habitats
(d) Decrease in rainfall
2. Sudden growth during puberty occurs because —
(a) Body temperature rises
(b) Growth hormones and sex hormones increase
(c) Bones absorb more water
(d) The brain develops faster
3. When frogs are removed from a forest ecosystem, mosquito numbers rise.
The best explanation is —
(a) Frogs used to eat mosquitoes; their absence increases mosquito population
(b) Mosquitoes multiply faster in water without frogs
(c) Frogs pollinate plants
(d) Mosquitoes migrate from other areas
4. Leguminous plants enrich soil because —
(a) Their roots absorb nitrogen from air directly
(b) Rhizobium bacteria in roots fix atmospheric nitrogen
(c) They store oxygen in leaves
(d) They increase rainfall
5. Spores help fungi survive in harsh conditions because —
(a) Spores are large and heavy
(b) Spores have thick protective walls and can remain dormant
(c) Spores are colourful
(d) Spores contain chlorophyll
6. Which microorganism is used in curd formation?
(a) Lactobacillus (b) Rhizobium (c) Yeast (d) Clostridium

7. Which method is fastest for increasing population under stable conditions?
 (a) Sexual reproduction (b) Vegetative propagation
 (c) Spore formation (d) Fragmentation
8. If grass in the region dries up, which color lizard will now have survival advantage?
 (a) Green (b) Brown (c) Yellow (d) Blue
9. Disappearance of bees from an ecosystem mainly affects –
 (a) Decomposition process (b) Pollination and seed formation
 (c) Nitrogen fixation (d) Water cycle
10. Which statement correctly differentiates sexual and asexual reproduction?
 (a) Sexual – identical offspring; Asexual – variation present
 (b) Sexual – slow but creates variation; Asexual – fast but no variation
 (c) Both produce identical offspring
 (d) Both require two parents

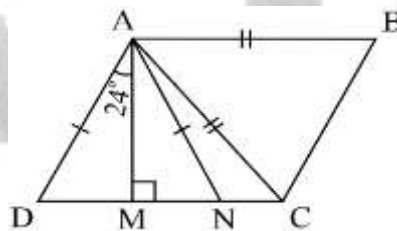
Subjective Questions

1. India is known as a “megadiverse country.” Justify this statement with examples.
2. Describe the life cycle of a frog showing how it represents metamorphosis. Use diagrams also to explain the process.
3. (a) Adolescents are often emotionally sensitive and moody. Explain the reasons behind such behaviour.
 (b) What are some healthy habits adolescents should adopt during puberty to maintain physical and mental well-being?
4. Explain the useful and harmful roles of microorganisms in our lives with examples.

SECTION - D [Mathematics]

1. Simple form of $\frac{1}{3 - \frac{1}{2 - \frac{1}{7}}}$ is
 (a) $\frac{13}{32}$ (b) $\frac{32}{13}$ (c) $\frac{7}{13}$ (d) $\frac{13}{7}$
2. Mridul has one extra candy than Rakesh. If the difference of the square of number of candies they have is 271. Then how many candies does Mridul have?
 (a) 156 (b) 146 (c) 136 (d) 126

3. Dennis the Menace is thinking of two numbers. Their greatest common factor is 6. Their least common multiple is 36. One of the numbers is 12. What is the other number?
 (a) 18 (b) 16 (c) 6 (d) 24
4. A company has $[x+3]$ branches and the total sales from all branches over a month is $[x^4 - 81]$. The director wants to know the average sales per branch.
 (a) $(x-3)(x+3)$ (b) $(x-3)(x^2+9)$ (c) $(x+9)(x-9)$ (d) $(x+3)(x-9)$
5. Maya wants to redesign her rectangular backyard garden. The garden's length is 3 times its width. She wants to create a 3cm wide path along the length and increase the width by 5 cm (to plant more herbs). After these adjustments, the area of her garden increases by 57 cm². Based on this, calculate the total length of fencing needed for her original garden design?
 (a) 18 cm (b) 48 cm (c) 24 cm (d) 20 cm
6. A sheet is in the form of a rhombus whose diagonals are 10 m and 8 m. Find the cost of painting both of its surfaces at the rate of ₹70 per m².
 (a) ₹5,600 (b) ₹4,000 (c) ₹2,800 (d) ₹2,000
7. Consider the following statements:
 A number $a_1 a_2 a_3 a_4 a_5 a_6$ is divisible by 11 if
 1. $(a_1 + a_3 + a_5) - (a_2 + a_4 + a_6) = 0$
 2. $(a_1 + a_3 + a_5) - (a_2 + a_4 + a_6)$ is divisible by 11
 Which of these statements is/are correct?
 (a) 1 alone (b) 2 alone (c) Both 1 and 2 (d) Neither 1 nor 2
8. If ABCD is a parallelogram, $\triangle ADN$ and $\triangle ABC$ are isosceles triangles then find Angle BAC.

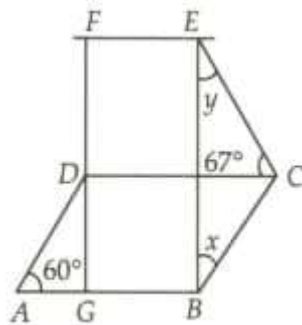


- (a) 112° (b) 32° (c) 132° (d) 48°

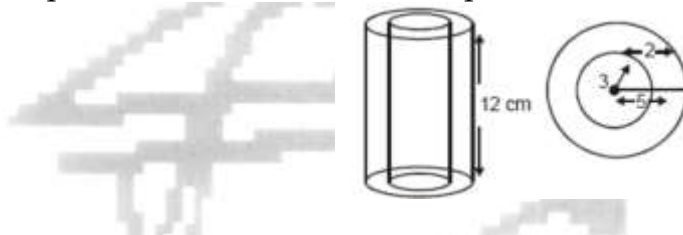
9. Find the volume of cylinder whose radius is 'h' and height is 'r':
 (a) $\pi r^2 h$ (b) $2\pi r h$ (c) $\pi h^2 r$ (d) $\pi r(h+r)$
10. Which of the following is the cube root of 4913?
 (a) 23 (b) 13 (c) 17 (d) 21

Subjective Questions

1. In the given figure, ABCD is a parallelogram and GBEF is a rectangle. Find x and y .



2. If Ram wants to paint a cylindrical pipe that is open at ends, if its length is 12 cm, the external diameter 10 cm and thickness 2 cm. Find the cost of painting the complete surface if the rate is ₹20 per 100cm²



3. I have a total of Rs 300 in coins of denomination Re 1, Rs 2 and Rs 5. The number of Rs 2 coins is 3 times the number of Rs 5 coins. The total number of coins is 160. How many coins of each denomination are with me?
4. 10404 students are sitting in a lecture room in such a manner that there are as many students in a row as there are rows in a lecture room. How many students are there in each row of a lecture room?

SECTION - E [English]

1. He _____ be at home by now; it's already midnight.
(a) might (b) must (c) could (d) can
2. Identify the correctly used determiner:
(a) Every of the students was given a chance.
(b) Each student was given a chance.
(c) Every students was given a chance.
(d) All student was given a chance.
3. Choose the correct form: "No sooner _____ the bell rang than the students rushed out."
(a) did (b) has (c) had (d) was

4. Choose the sentence without any grammatical error:
 (a) She prefers tea than coffee. (b) She prefers tea to coffee.
 (c) She prefers tea over than coffee. (d) She prefers tea instead coffee.
5. There isn't _____ space left in the drawer.
 (a) much (b) few (c) some (d) many

Questions 6 & 7 are paragraph based

The manager said, "We will review your report tomorrow."

The employees were informed that their work would be evaluated soon.

Later, the HR department circulated an email announcing that rewards might be distributed.

Finally, the staff was congratulated for their dedication.

6. The first sentence in indirect speech would read:
 (a) The manager said that they will review the report tomorrow.
 (b) The manager said that they would review the report the next day.
 (c) The manager told that the report would be reviewed tomorrow.
 (d) The manager said they had reviewed the report.
7. In the passage, "were informed" is an example of:
 (a) Active voice, past tense (b) Passive voice, past tense
 (c) Active voice, perfect tense (d) Passive voice, perfect tense
8. _____ Ganga is a sacred river.
 (a) A (b) An (c) The (d) No article
9. He did not attend the meeting _____ he was ill.
 (a) although (b) because (c) unless (d) until
10. Find the part that contains an error:
 (a) He insisted / (b) to go / (c) on the trip / (d) No error

Section - F [Mental Ability]

1. The Colored Switches (Logical Deduction)
 You have three identical, unlabeled boxes. One contains two Red marbles (RR), one contains two Blue marbles (BB), and one contains one of each (RB). All three boxes are labeled, but every single label is guaranteed to be incorrect. If you are only allowed to take out one marble from one box, how can you correctly label all three boxes? EXPLAIN
2. The Mysterious Mirror Clock
 A watch shows 4:15. In a mirror, what time will it appear as?

3. The Light Race
You switch on a torch inside a moving train. To someone outside watching through the window, does the light move faster, slower, or the same?
4. The Number That Wanted to Vanish
You can write me in words, but if you remove one letter, I become even. What number am I?
5. The Family Photo Trick
In a photo, Ravi says, "I have as many sisters as brothers." His sister Rina says, "I have twice as many brothers as sisters." How many brothers and sisters are there?
6. The Numeric Code
You have a code where each letter corresponds to its position in the alphabet (A=1, B=2,... Z=26). The message "20 8 9 19 9 19 5 1 19 25" is given. Decode it.
7. The Letter Sequence (Number Pattern)
What is the next letter in the following logical sequence?
O, T, T, F, F, S, S, E, ?

Physics

1.B	2.A	3.A	4.D	5.B	6.B	7.C	8.B	9.A	10.B
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Chemistry

1.B	2.B	3.A	4.C	5.C	6.B	7.B	8.D	9.A	10.A
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Biology

1.C	2.B	3.A	4.B	5.B	6.A	7.B	8.B	9.B	10.B
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Maths

1.A	2.C	3.A	4.B	5.B	6.A	7.C	8.D	9.C	10.C
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English

1.B	2.B	3.C	4.B	5.A	6.B	7.B	8.C	9.B	10.B
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Mental Ability

1. $RB \rightarrow RR$, $BB \rightarrow RB$, $RR \rightarrow BB$
2. 7:45
3. Same Speed
4. Seven
5. 4 Brothers and 3 Sisters
6. This is Easy
7. N