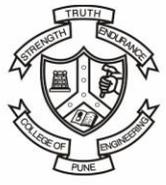




College of Engineering, Pune

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Genius Junior'18

Round 1

Total questions: 40

Time: One Hour

Total marks: 100

Standard: 9th

Read the following instructions carefully

Paper Code: 090101

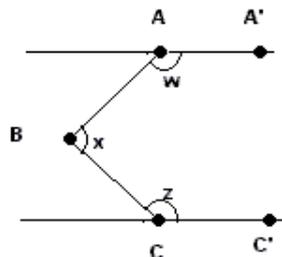
1. Do not open the question paper until you are asked to do so.
2. Carefully see your question paper code and write it properly in your answer sheet.
3. This question paper contains 40 questions divided into 5 sections.
SECTION I – MATHEMATICS (10 questions)
SECTION II – SCIENCE (10 questions)
SECTION III -MENTAL ABILITY (10 questions)
SECTION IV – LANGUAGE SKILLS (5 questions)
SECTION V – GENERAL KNOWLEDGE (5 questions)
4. Mathematics and Science questions carry 3 marks each.
5. All other questions carry 2 marks each.
6. There is no negative marking.
7. All questions are multiple choice questions (MCQs) with four alternatives. Only one option is correct for every question.
8. You must fill a bubble against the correct option with black/blue ball pen only.
(Incompletely filled bubbles/ more than one bubble entries for a single question will be considered as a wrong answer)
9. Do not make any stray marks on the sheet.
10. You should handover the question paper as well as the answer sheet to the invigilator after the examination.

All The Best!!!

SECTION 1: MATHEMATICS

(Each question carries 3 marks)

- 1) Length of pendulum varies inversely as the square of number of oscillations per minute. If a pendulum 64cm long makes 27 oscillations per minute, then the length of the pendulum that makes 24 oscillations per minute is-
- A) 81 B) 85 C) 71 D) 72
- 2) A boat travelling upstream takes 8 hours 48 minutes to cover a certain distance, while it takes 4 hours to cover the same distance travelling downstream. What is the ratio between the speed of the boat and speed of the water current respectively?
- A) 2 : 1 B) 3 : 2
C) 8 : 3 D) Cannot be determined
- 3) The mean of five numbers is 30. If one number is excluded, their mean becomes 28. Which is the excluded number?
- A) 38 B) 35 C) 33 D) 36
- 4) The value of $\frac{(361)^3 + (139)^3}{(361)^2 - 361 \times 139 + (139)^2}$ is
- A) 300 B) 500 C) 400 D) 600
- 5) Five years hence, the father's age will be 3 times the age of his son. Five years ago, the father was seven times as old as his son. The age of the son at present is:
- A) 10 B) 15 C) 20 D) 40
- 6) In the figure below, AA' is parallel to CC'. The angle A'AB is equal to 135 degrees and the angle C'CB is equal to 147 degrees. Find angle ABC.



- A) 78 B) 90 C) 72 D) 87
- 7) Find the number of coins, each of which are 1.5 cm in diameter and 0.2 cm thick, required to form a right circular cylinder of height 10 cm and diameter 4.5 cm

A) 600

B) 450

C) 560

D) 700

8)

Sr.No.	Line Segments		Point of Intersection
1.	Perpendicular bisector	(i)	Incentre
2.	Median	(ii)	Orthocentre
3.	Altitude	(iii)	Circumcentre
4.	Angle bisector	(iv)	Centroid

A) 1-(ii) , 2-(iv) , 3-(iii) , 4-(i)

B) 1-(i) , 2-(iv) , 3-(ii) , 4-(iii)

C) 1-(iv) , 2-(iii) , 3-(ii) , 4-(i)

D) 1-(iii) , 2-(iv) , 3-(ii) , 4-(i)

9) A book is sold at a 10% loss. If the selling price is Rs. 40 more, there will be a profit of 15%. The cost price of the article is:

A) Rs. 175

B) Rs. 160

C) Rs. 140

D) Rs. 120

10) The probability of getting an odd number in a single throw of dice is-

A) 0.5

B) 0.16

C) 0.8

D) 1

SECTION-2: SCIENCE

(Each question carries 3 marks)

11) Organic compounds are generally soluble in

A) Polar solvents

B) Protic solvents

C) Immiscible solvents

D) Non-polar solvents

12) To every action there is always an equal and opposite reaction, this statement is known as

A) Newton's 2nd law of motion

B) Newton's 1st law of motion

C) Newton's 3rd law of motion

D) law of momentum

13) Cell sap is a

A) Living content of the cell

B) Nonliving content of the vacuole

C) Nonliving content of the protoplasm

D) Living content of the cytoplasm

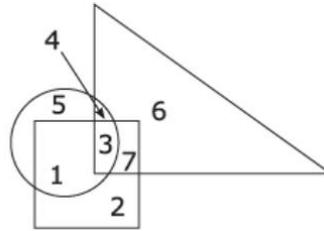
- 14) When magnesium ribbon is burnt it produces
A) Magnesium hydroxide B) Magnesium oxide
C) Magnesium chloride D) Magnesium sulphate
- 15) In Rutherford's experiment, α particles were deflected because of
A) electrostatic repulsion between α particles and positively charged part of atom
B) electrostatic attraction between α particles and positively charged part of atom
C) electrostatic repulsion between β particles and positively charged part of atom
D) electrostatic attraction between γ particles and positively charged part of atom
- 16) A fire extinguisher -
A) Cuts off the supply of air B) Brings down the ignition temperature of fuel
C) Both (a) & (b) D) None of these
- 17) A spherical soap bubble is stable because the atmospheric pressure inside and outside is
A) equal B) different C) immeasurable D) none of above
- 18) Metals difficult to oxidize are called
A) weak metals B) strong metals C) noble metals D) none of above
- 19) Which of the following pair of diseases is caused by virus?
A) Rabies, mumps B) AIDS, Syphilis
C) Typhoid, Tetanus D) Cholera, Tuberculosis
- 20) Natural magnet is also called as
A) magnet B) magnetite C) magnesia D) lodestone

SECTION-3: MENTAL ABILITY

(Each question carries 2 marks)

- 21) Artists are generally whimsical. Some of them are frustrated. Frustrated people are prone to be drug addicts. Based on these statements which of the following conclusion is true?
A) All frustrated people are drug addicts B) Some artists may be drug addicts
C) All drug addicts are artists D) Frustrated people are whimsical
- 22) Find the missing term in the given series.
1, 12, 18, 25, ?, 52.
A) 33 B) 34 C) 35 D) 36

23)



Circle indicates 'strong', square indicates 'tall' and triangle 'army officers'. The strong army officers who are not tall are shown by

- A) 4 B) 3 C) 5 D) 6

24) Consider a family where-

- A is the brother of B.
- C is the father of A.
- D is the brother of E.
- E is the daughter of B.
- Then, the uncle of D

- A) A B) B C) C D) E

25) If the digits of the number 25673948 are arranged in ascending order from right to left, what will be the sum of digits which are fourth from left and third from right in the new arrangement?

- A) 10 B) 9 C) 4 D) 6

26)

$$\begin{array}{r} \boxed{A} + \boxed{B} = 8 \\ + \quad + \\ \boxed{C} - \boxed{D} = 6 \\ \parallel \quad \parallel \\ 13 \quad 8 \end{array}$$

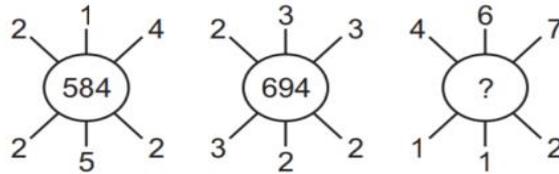
Which variables out of A, B, C and D have the same value?

- A) A and C B) A and D
C) B, C and D D) B and D

27) Some horse owners and the same number of people are going to the temple. Half of the horse owners are riding on their respective horses while the remaining are walking along with their horses. If the total number of feet on the ground is 70, how many horses are there?

- A)15 B)14 C)13 D)16

28) Find the missing number, if the same rule is followed in all the three figures.



- A) 937 B) 824 C) 769 D) 678

29) Five people Rajesh, Raman, Rajat, Ramesh and Ram are seated about a round table. Every chair is spaced equidistant from adjacent chairs.

- (i) Rajat is seated next to Rajesh.
 (ii) Rajesh is seated two seats from Ramesh.
 (iii) Raman is not seated next to Rajesh.

Which of the following statements must be true?

Statement: (I) Ramesh is seated next to Raman.

Statement: (II) Ram is seated next to Rajesh.

- A) I only B) II only C) Both I and II D) Neither I nor II

30) An application was received by inward clerk in the afternoon of a weekday. Next day he forwarded it to the table of the senior clerk, who was on leave that day. Next day, in the evening the senior clerk put up the application to the desk officer. Desk officer studied the application and disposed off the matter on the same day, i.e., Friday. Which day the application was received by the inward clerk?

- A) Tuesday B) Previous week's Saturday
 C) Wednesday D) Monday

SECTION-4: ENGLISH

(Each question carries 2 marks)

31) Directions: In the following passage, some of the words have been left out, each of which is indicated by a number. Find the suitable word from the options given against each number and fill up the blanks with appropriate words to make the paragraph meaningful.

Why is Cambodia buying crocheted fabric from Belarus and leather saddles from Kyrgyzstan?

In its efforts to ____ (1) ____ trade and forge new international alliances, the Southeast Asian Kingdom has opted to ____ (2) ____ ties with some unlikely partners: the members of the Eurasian Economic Union.

- Q1. A) Fasten B) Tighten C) Bolster D) Fortify
Q2. A) Increase B) Collocate C) Cumulate D) Incorporate

- A) (c),(a) B) (b),(c) C) (d),(b) D) (a),(c)

- 32) Which of the following is similar in meaning of the word manifestation?
A) concealment B) demonstration C) vagueness D) obscurity

- 33) DIRECTIONS: The first part of the sentence is marked 1 and the last part is marked 2. The rest of the sentence is split into four parts and marked P, Q, R and S. These four parts are not given in their proper order. Read the sentences and find out which of the four combinations is correct

1. Malnutrition is the condition
P. of the vitamins, minerals
Q. that develops when the body
R. and other nutrients it needs
S. does not get the right amount
2. to maintain healthy tissues and organ function

- A) PSQR B) QSPR C) RQPS D) SQRP

- 34) Out of the given options, choose the one which is the correct indirect speech of the sentence given below.

The teacher said to the student, "Why are you working so hard"?

- A) The teacher asked the student why he has been working so hard.
B) The teacher asked the student why is he working so hard.
C) The teacher asked the student why he had been working so hard.
D) The teacher asked the student why was he working so hard.

- 35) What does the expression 'walk with a waddle' means?

- A) Walk with short steps and a clumsy swaying motion.
B) Run speedily with slim legs.
C) Walk while moving one's head.
D) None of the above.

SECTION-5: GENERAL KNOWLEDGE

(Each question carries 2 marks)

- 36) Danish people are the habitants of the country of _____ , the capital of which is_____.

- A) Denmark, Prague B) Ireland, Dublin
C) Denmark, Copenhagen D) Malta, Valletta

37) Match the companies listed below with their marketing logos.

Sr.No	Company		Logo
1	Uninor	(i)	
2	Kingston	(ii)	
3	Atari	(iii)	
4	Mazda	(iv)	
5	DreamWorks	(v)	

- A) 1-(iv), 2-(ii), 3-(v), 4-(i), 5-(iv)
 B) 1-(iv), 2-(iii), 3-(v), 4-(ii), 5-(i)
 C) 1-(iv), 2-(v), 3-(iv), 4-(iii), 5-(i)
 D) 1-(iv), 2-(v), 3-(i), 4-(ii), 5-(iii)

38) The second and fifth month of the Indian national calendar is:

- A) Magha, Jyeshtha
 B) Chaitra, Shraavan
 C) Jyeshtha, Ashwin
 D) Vaishakha, Shraavan

39) Identify the Indian scientist who found out that when light passes through a transparent medium, some of it undergoes change in its wavelength.

- A) Homi K. Bhabha
 B) C. V. Raman
 C) C. N. R. Rao
 D) M. S. Swaminathan

40) The statue of Liberty was gifted to the United States by which country?

- A) Germany
 B) France
 C) China
 D) England