

FIITJEE ADMISSION TEST

Class-VIII (going to class IX)

SCIENCE & MATHS

Time: 3 Hours

Maximum Marks: 270

Instructions:

1. Attempt ALL the questions.
2. Answers have to be marked on the OMR sheet.
3. The Question Paper contains blank spaces for your rough work. No additional sheets will be provided for rough work.
4. Blank papers, clip boards, log tables, slide rule, calculator, cellular phones, pagers and electronic devices, in any form, are not allowed.
5. Write your **Name** and **Registration No.** in the space provided at the bottom of this sheet.
6. The questions paper consists of 3 parts:
Part -1 Physics (18 questions)
Part -2 Chemistry and Biology (27 questions)
Part -3 Mathematics (45 questions)
7. Each question carries **+3 marks** for correct answer and **-1 mark** for wrong answer.

Name of the Candidate :

Registration Number :

Physics**PART – 1**

Straight Objective Type

*This section contains 18 multiple choice questions numbered 1 to 18. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.*

1. The role of lubricants is to
(A) increase friction (B) reduce friction
(C) increase wear and tear of object (D) None of these
 2. Image formed by a plane mirror is
(A) virtual, behind the mirror and enlarged.
(B) virtual, behind the mirror and of the same size as the object.
(C) Real, at the surface of the mirror and enlarged.
(D) Real, behind the mirror and of the same size as the object.
 3. The function of iris is to
(A) protect the interior the eye from accident. (B) control the amount of light entering into the eye.
(C) allow light to enter inside the eye (D) send the visual sensations to the brain
 4. A rainbow is a result of
(A) reflection of light (B) scattering of light
(C) dispersion of light (D) none of these
 5. Which of the following voices is likely to have maximum frequency?
(A) Baby girl (B) Baby boy
(C) a man (D) a woman
 6. For a sound of high frequency, the pitch will be
(A) low (B) high
(C) pitch does not depend upon frequency (D) cant say
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Space for Rough Work

7. For same amount of force acting on two surfaces, the pressure will be more on that surface whose area is
(A) more (B) less
(C) pressure will not depend upon area (D) pressure will not depend upon force.
8. Waves produced during earthquake are also known as
(A) electromagnetic wave (B) Non-mechanical waves
(C) seismic waves (D) none of these.
9. Which of the following would you prefer to use to read very small letters printed on the pages of a dictionary?
(A) A concave lens of large focal length (B) A convex lens of large focal length
(C) A convex lens of short focal length (D) A concave lens of short focal length
10. The distance between the center of a lens and its focus is known as
(A) Principal length (B) Focal length
(C) Optical length (D) Virtual length
11. The angle of reflection is the angle between
(A) the incident ray and the surface of the mirror
(B) the reflected ray and the surface of the mirror
(C) the normal to the surface and the incident ray
(D) the normal to the surface and the reflected ray
12. We can obtain the spectrum of sunlight through
(A) plain slab (B) a convex lens
(C) thermometer (D) glass prism

Space for Rough Work

13. A ray of light incidents normally on water air surface. Then angle of refraction will be
(A) 90° (B) 0°
(C) 45° (D) none of the above
14. The focal length of a convex lens does not depend upon
(A) refractive index of glass used. (B) radii of curvature of the two sides.
(C) colour of light used. (D) diameter of periphery.
15. Which of the following light ray is least deflected when it is passed through a prism?
(A) Violet (B) Blue
(C) Green (D) Red
16. Which of the following materials doesn't allow the flow of current?
(A) Nickel (B) Diamond
(C) Silver (D) Aluminum
17. The Ampere-sec stands for the unit of
(A) Power (B) Current
(C) Energy (D) Charge
18. The material of the fuse wire should have
(A) a high specific resistance and a high melting point
(B) a low specific resistance and a low melting point
(C) a high specific resistance and a low melting point
(D) a low specific resistance and a high melting point

Space for Rough Work

Chemistry & Biology**PART – 2****Straight Objective Type**

This section contains 27 multiple choice questions numbered 1 to 27. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

1. Rain coats are made up of
(A) melamine (B) Bakelite
(C) Polyesters (D) PVC
2. Which of the following is heat stable?
(A) Melamine (B) Polythene
(C) Polypropylene (D) Nylon
3. Metals are
(A) Ductile (B) have low melting point
(C) have low boiling point (D) low tensile strength
4. Metals on reaction with HCl produce
(A) H₂ gas (B) Cl₂ gas
(C) H₂O (D) No reaction
5. Metal oxides have pH
(A) < 7 (B) = 7
(C) > 7 (D) 0
6. Main constituent of natural gas is
(A) butane (B) isobutane
(C) both (A) and (B) (D) CH₄
7. Which of the following is liquid at room temperature?
(A) Hg (B) Bromine
(C) Iodine (D) (A) and (B) both
8. Very reactive metals are present
(A) at the top of the activity series (B) at the bottom of the activity series
(C) middle of the activity series (D) not present in the activity series

Space for Rough Work

9. Good fuel is
(A) high calorific value (B) low calorific value
(C) no poisonous combustion products (D) (A) and (C) both
10. Maximum percentage of carbon is present in
(A) Peat (B) Lignite
(C) Bituminous (D) Anthracite
11. Metals combine with O_2 to give
(A) basic oxides (B) acidic oxides
(C) neutral oxides (S) salt
12. Which of the following affects the ozone layer?
(A) CO_2 (B) CFCs
(C) Soot (D) Dust
13. Reverse osmosis is used for the purification of
(A) air (B) water
(C) air as well as water (D) neither air nor water
14. SO_2 and NO_2 cause pollution by increasing
(A) acidity (B) alkalinity
(C) buffer solution (D) none
15. Which of the following is used as antiknock agent?
(A) Tetraethyl lead (B) Carbon tetrachloride
(C) Methane (D) Benzene
16. German silver is an alloy of
(A) copper (B) aluminium
(C) iron (D) none of these
17. Electrical switches are made up of which of the following materials.
(A) Teflon (B) Bakelite
(C) Melamine (D) PVC
18. Coal gas is mixture of
(A) $CH_4 + H_2 + CO_2 + H_2O$ (B) $CH_4 + H_2 + CO + H_2S$
(C) $CH_4 + H_2 + CO$ (D) $C_3H_8 + C_4H_{10} + C_{10}H_{22}$

Space for Rough Work

19. Tetanus is caused by
(A) Virus (B) Bacteria
(C) Fungi (D) Mycoplasma
20. The disease caused by the deficiency of iodine
(A) goiter (B) anaemia
(C) ricket (D) kwashiorkor
21. Which metal is present in the human body in greater percentage?
(A) calcium (B) sodium
(C) potassium (D) iron
22. The body system that gives you support and allows movement is the
(A) Skeletal system (B) Circulatory system
(C) Respiratory system (D) Excretory system
23. The comma shaped bacteria is
(A) streptococcus (B) staphylococcus
(C) vibrio (D) micrococcus
24. Which food group best provides the necessary nutrients for healthy teeth and bones?
(A) Milk and dairy products (B) Fruits and vegetables
(C) Bread and cereal (D) Meat
25. Sprain is caused by excessive pulling of
(A) nerve (B) muscles
(C) tendons (D) ligaments
26. The study of microscopic organism is called as
(A) mycology (B) palynology
(C) microbiology (D) phycology
27. Non-living part fluid filled space enclosed by membrane
(A) granules (B) vacuoles
(C) cytoplasm (D) nucleus

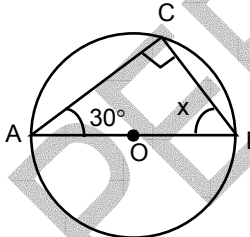
Space for Rough Work

Mathematics**PART – 3****Straight Objective Type**

This section contains 45 multiple choice questions numbered 1 to 45. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

1. Sum of two irrational numbers is always
(A) rational (B) irrational
(C) integer (D) None of these
2. If $f(x) = ax^2 + bx + a$ is divided by $(x - b)$ $a, b \neq 0$, remainder is 'a', then a is
(A) b^2 (B) -1
(C) 0 (D) $a + b$
3. If certain amount of money is distributed among A, B, C in ratio 4 : 5 : 7, such that C received 100 Rs. less than the sum of amount A and B received. Total amount distributed is
(A) 1000 (B) 700
(C) 900 (D) 800
4. When $f(x) = x^4 + x^2 - 4x + 6$ is divided by $(x + 1)$, the remainder is
(A) 10 (B) 0
(C) 12 (D) 8
5. L.C.M. of two numbers is 500, their HCF is 10. If one number is 20, other number is
(A) 100 (B) 200
(C) 400 (D) 250
6. If a chord of circle with radius 5 cm subtends a right angle at the centre, then length of chord is
(A) $\sqrt{2}$ (B) $5/\sqrt{2}$
(C) $5\sqrt{2}$ (D) 10

Space for Rough Work

7. A man starts from a point and walks 10 km towards east and then 10 km towards north. The position from the starting point is
 (A) 14.14 km (B) 15 km
 (C) 17 km (D) 12 km
8. Difference of square of a number and square of 10 is 576. The number is
 (A) 26 (B) 24
 (C) 25 (D) none of these
9. An alloy contains 20% copper , 25 % iron and rest silver. If total weight of alloy is 200 gm then silver is
 (A) 10 gm (B) 100 gm
 (C) 150 gm (D) 110 gm
10. The value of x is
 (A) 30° (B) 45°
 (C) 55° (D) 60°
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11. If length of minute hand of a clock is 14 cm, the area swept by the minute hand in one minute is
 (A) $\frac{154}{15} \text{ cm}^2$ (B) $\frac{157}{15} \text{ cm}^2$
 (C) $\frac{158}{15} \text{ cm}^2$ (D) 10 cm^2
12. If $X = \frac{8ab}{a+b}$, then the value of $\frac{X+4a}{X-4a} + \frac{X+4b}{X-4b}$ is
 (A) 1 (B) -1
 (C) 2