

# MODEL TEST PAPER -1

FOR

## COMMON ENTRANCE EXAMINATION (SOLDIER TECH)

Time: 1 Hour

Maximum Marks: 100

Pass Marks : 32

### Part – I GENERAL KNOWLEDGE

Choose the correct answer:

1. Lord Buddha was born in (Ans A)  
(a) Lumbini (b) Vaishali  
(c) Bodh Gaya (d) Pataliputra
2. Who initiated Din – I – Ilahi ? (Ans C)  
(a) Shahjehan (b) Aurangzeb  
(c) Akbar (d) Jahangir
3. Radcliffe line is a boundary line between (Ans C)  
(a) India and Bangladesh (b) India and China  
(c) India and Pakistan (d) France and Germany
4. Mount Everest, the highest peak in the world, is located in (Ans D)  
(a) Bhutan (b) China  
(c) India (d) Nepal
5. The largest producer of tea in the world is (Ans D)  
(a) Cuba (b) China  
(c) Mexico (d) India
6. Which country is known as the 'Land of Rising Sun' ? (Ans C)  
(a) Thailand (b) Norway  
(c) Japan (d) Korea
7. Zoji La is a pass between (Ans A)

- (a) Kashmir valley and Ladakh (b) Arunachal Pradesh and Tibet  
(c) Chumbi valley and Sikkim (d) None of these
8. Who among the following is the first person to set foot on moon ? (Ans D)  
(a) Glen (b) Rakesh Sharma  
(c) Yuri Gagarin (d) Neil Armstrong
9. The first Indian to receive Nobel Prize in Literature was (Ans B)  
(a) Mother Teresa (b) Rabindranath Tagore  
(c) Sarojini Naidu (d) C. V. Raman
10. Who is the author of epic 'Meghdoot' ? (Ans D)  
(a) Vishakadatta (b) Valmiki  
(c) Banabhatta (d) Kalidas

**Part – II**  
**PHYSICS**

**Choose the correct answer:**

1. One horse power is equal to the : (Ans A)  
(a) 746 watt (b) 500 watt  
(c) 646 watt (d) 700 watt
2. Which equation is wrong in the following ? (Ans D)  
(a)  $s = ut + \frac{1}{2}at^2$  (b)  $v = u + at$   
(c)  $v^2 - u^2 = 2as$  (d)  $v = u + as$
3. Einstein gives a relation: (Ans A)  
(a)  $E = mc^2$  (b)  $KE = \frac{1}{2}mv^2$   
(c)  $PE = mgh$  (d)  $P = mv$
4. The weight of a body is : (Ans A)  
(a) The force with which it is attracted to the earth  
(b) Mass  
(c) Force  
(d) momentum
5. Working of rocket is based on the principle of : (Ans B)  
(a) Kepler's law (b) Newton's law  
(c) Colomb's law (d) Conservation of momentum
6. The value of 'g' is zero at : (Ans B)  
(a) Surface of the earth (b) centre of the earth  
(c) in the Indian Ocean (d) on Mount Everest

7. Rate of doing work is called : (Ans D)
- (a) Work (b) Power  
(c) Energy (d) Momentum
8. Charge is the flow of : (Ans A)
- (a) Electrons (b) Protons  
(c) Neutrons (d) Particles
9. The Doppler's effect is applicable for : (Ans A)
- (a) Sound wave only (b) Light wave only  
(c) Both (a) and (b) (d) none of these
10. Decibel is : (Ans C)
- (a) Musical instrument (b) Musical note  
(c) Measure of sound level (d) The wavelength of noise
11. Efficiency of petrol engine is approximately (Ans A)
- (a) 25% (b) 40%  
(c) 35% (d) 60%
12. Two thin blankets are warmer than single of same thickness as the two because : (Ans D)
- (a) Total surface increases  
(b) Distance for heat transmission increases  
(c) Distance for heat transmission decreases  
(d) Air is enclosed
13. One Newton is equal to the : (Ans B)
- (a) 10 dyne (b)  $10^5$  dyne  
(c)  $10^2$  dyne (d)  $10^7$  dyne
14. The permanent magnet is made from which one of following substance ? (Ans C)
- (a) Diamagnetic (b) Para – magnetic  
(c) Ferro – magnetic (d) Soft – iron
15. Hygrometers are instrument for measuring : (Ans D)
- (a) The amount of Oxygen in air  
(b) Density of air  
(c) expansion of water vapour with temperature  
(d) The amount of water vapour in the atmosphere

**Part – III**  
**MATHEMATICS**

**Choose the correct answer:**

1. Find the differential of  $\sin 4x$  :  
(a)  $4 \cos 4x$  (b)  $4 \tan 4x$   
(c)  $1$  (d)  $-4 \cos 4x$
2. What is the square root of 33489369 ?  
(a) 5887 (b) 5787  
(c) 3787 (d) 4787
3. A new car cost Rs 3,60,000 if its price depreciate at the rate of 15% annually, what will be its price after 5 years ?  
(a) 1,79,000 (b) 1,59,700  
(c) 1,55,700 (d) None of these
4. Calculate the simple interest on Rs. 400 for  $\frac{1}{2}$  years at 5% interest per annum :  
(a) 100 (b) 10  
(c) 75 (d) 25
5. Evaluate  $60^3 \times 6$ :  
(a) 1269000 (b) 21600  
(c) 129600 (d) 3600
6. A 225 mtr long train crossed a 275 mtr long tunnel in 1 minute. Find the speed of the train in km/h?  
(a) 20 km/h (b) 15 km/h  
(c) 30 km/h (d) 25 km/h
7. A field measures 450 mtr in length and 250 mtr in width. What will be the cost of erecting a fence along its perimeter if the rate of fencing is chargeable at 50 paise per meter :  
(a) Rs 700 (b) Rs 650  
(c) Rs 750 (d) None of these
8. If a train is running at the speed of 86.4 km per hour, then how much distance will it cover in 10 minute?  
(a) 1.44 km (b) 14.0 km  
(c) 0.140 km (d) 14.4 km
9. If the sum of two numbers is 97 and their difference is 37. What is the product of the numbers ?  
(a) 2378 (b) 840  
(c) 2010 (d) 1736
10. If  $a + b = 9$  and  $ab = 20$  then find the value of  $a^2 + b^2$  ?  
(a) 21 (b) 41

- (c) 60 (d) None of these
11. Sum of  $5 + 8 + 11 + 14 + \dots + 22^{\text{nd}}$  term will be ?  
 (a) 1003 (b) 803  
 (c) 903 (d) 703
12. The perimeter of an equilateral triangle is 18 cm . find its area :  
 (a)  $9\sqrt{3}$  (b)  $7 \text{ cm}^2$   
 (c)  $36 \text{ cm}^2$  (d)  $8\sqrt{2} \text{ cm}^2$
13. How many diagonals can be drawn in a polygon with n sides ?  
 (a)  $n(n - 3)^2$  (b)  $n(n - 3)^3$   
 (c)  $n(n + 3)^2$  (d) None of these
14. A trader marks the price of an article 20% above its cost. He gives discount to his customers and gains 8% what is the discount?  
 (a) 21% (b) 10%  
 (c) 4% (d) None of these
15. If the radius of a circle is tripled, its perimeter will increase how many time to its previous perimeter?  
 (a) One third (b) Three times  
 (c) Two times (d) None of these

**Part – IV**  
**CHEMISTRY**

**Choose the correct answer:**

1. Which of the following is/the lightest metal? (Ans A)  
 (a) Mercury (b) Silver  
 (c) Lithium (d) Lead
2. What is laughing gas ? (Ans D)  
 (a) Carbon dioxide (b) Sulphur Dioxide  
 (c) Hydrogen Peroxide (d) Nitrous oxide
3. The filament of an electric bulb is made of (Ans C)  
 (a) Iron (b) Nichrome  
 (c) Tungsten (d) Graphite
4. Washing soda is the common name for (Ans C)  
 (a) Calcium carbonate (b) Calcium bicarbonate  
 (c) sodium carbonate (d) Sodium bicarbonate
5. Atom bomb is based on the principle of (Ans B)  
 (a) Nuclear fusion (b) Nuclear Fission

- (c) Both (a) and (b) (d) None of these

6. Heavy water is (Ans B)

- (a) Sea water ( $\text{H}_2\text{O} + \text{Salt}$ )  
(b)  $\text{D}_2\text{O}$   
(c)  $\text{H}_2\text{O}_2$   
(d)  $\text{H}_2\text{O}$  alongwith Ca and Mg carbonates

7. The gas liberated during the reaction of copper with dilute nitric acid is (Ans C)

- (a)  $\text{N}_2\text{O}$  (b)  $\text{N}_2\text{O}_5$   
(c)  $\text{O}_2$  (d) NO

8. The highest grade of coal whose surface is shining and has highest calorific value is (Ans C)

- (a) Bituminous (b) Lignite  
(c) Anthracite (d) Peat

9. The final product of combustion of ethane are (Ans A)

- (a) Carbon and Oxygen (b) Ethylene and Hydrogen  
(c) Water and Carbon monoxide (d) Carbon dioxide and water

10. Production of chlorofluorocarbons (CFC) gas which is proposed to be banned in India, is used in which of the following domestic product ? (Ans D)

- (a) Television (b) Tube light  
(c) Cooking gas (d) Refrigerator

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