

**NOTE : DO NOT BREAK THE SEAL UNTIL YOU GO THROUGH THE FOLLOWING INSTRUCTIONS**

## **QUESTION BOOKLET**

**Diploma Polytechnic Entrance Test - 2011**

**Paper - I (ENGLISH AND SCIENCE)**

Roll No.

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(Enter your Roll Number in the above space)

Series

Booklet No.

**D**

**100844**

**Time Allowed : 2.00 Hours**

**Max. Marks : 100**

### **INSTRUCTIONS :**

1. Use only BLACK or BLUE Ball Pen.
2. All questions are COMPULSORY.
3. Check the BOOKLET thoroughly.

**IN CASE OF ANY DEFECT - MISPRINTS, MISSING QUESTION/S OR DUPLICATION OF QUESTION/S, GET THE BOOKLET CHANGED WITH THE BOOKLET OF THE SAME SERIES. NO COMPLAINT SHALL BE ENTERTAINED AFTER THE ENTRANCE TEST.**

4. Before you mark the answer, fill in the particulars in the ANSWER SHEET carefully and correctly. Incomplete and incorrect particulars may result in the non-evaluation of your answer sheet by the technology.
5. Write the SERIES and BOOKLET NO. given at the TOP RIGHT HAND SIDE of the question booklet in the space provided in the answer sheet by darkening the corresponding circles.
6. Do not use any eraser, fluid pens etc., otherwise your answer sheet is likely to be rejected.
7. After completing the test, handover the ANSWER SHEET to the Invigilator.

**Code No. 01**

**SEAL**

11.11.11

**PAPER - I**

**SECTION I**

**(ENGLISH)**

**Fill in with articles. If you don't need an article, your answer is 'x' :**

1. Last year we visited \_\_\_\_\_ St. Paul's Cathedral and \_\_\_\_\_ Tower.  
(1) x, x (2) the, the  
(3) the, a (4) x, the
2. \_\_\_\_\_ Mount Everest is \_\_\_\_\_ highest mountain on earth.  
(1) x, the (2) The, the  
(3) x, a (4) None of the above
3. They finished \_\_\_\_\_ unit.  
(1) an (2) a  
(3) the (4) none of the above
4. \_\_\_\_\_ Plaza Hotel is on the corner of \_\_\_\_\_ 59th Street and \_\_\_\_\_  
5th Avenue.  
(1) x, the, x (2) The, x, x (3) The, the, x (4) x, x, x

**Place the adverb at the appropriate position :**

5. Our friends must write a test (also)  
(1) Our friends must also write a test  
(2) Our friends must write a test also  
(3) Our friends also must write a test  
(4) All are correct
6. I was joking. (only)  
(1) I was joking only (2) Only I was joking  
(3) I was only joking (4) I only was joking
7. Our friends must write tests. (often)  
(1) Our friends must write tests often  
(2) Our friends must often write tests  
(3) Our friends often must write tests  
(4) None of the above

**Fill in with Prepositions :**

8. Do you live \_\_\_\_\_ Los Angeles?

- (1) in                      (2) at                      (3) on                      (4) by

9. \_\_\_\_\_ breakfast-time we do not eat salad.

- (1) At                      (2) In                      (3) On                      (4) For

10. Diamond was born \_\_\_\_\_ 7 : 37 A.M.

- (1) at    (2) in  
(3) on    (4) none of the above

**Fill in with Gerund/infinitive :**

11. I remember \_\_\_\_\_ the Queen in London.

- (1) meet    (2) to meet  
(3) meeting    (4) to meeting

12. Did you remember \_\_\_\_\_ the letter?

- (1) post    (2) to post  
(3) posting    (4) to posting

13. I'm not used \_\_\_\_\_ up this early.

- (1) get                      (2) to get                      (3) getting                      (4) to getting

**Choose the correct conditional sentence :**

14. My sister could score better on the test if the teacher \_\_\_\_\_ the grammar once more.  
(1) explains (2) explained (3) had explained (4) was explaining
15. She wouldn't have had two laptops if she \_\_\_\_\_ the contract.  
(1) does not sign (2) did not sign  
(3) had not signed (4) none of the above
16. If you \_\_\_\_\_ a lighter jacket, the car driver would have seen you earlier.  
(1) wore (2) wear (3) had worn (4) were wearing

**Choose the correct Pronoun. Choose 'x' if you think the sentence does not require a pronoun :**

17. Mandy is the girl \_\_\_\_\_ I met on Friday.  
(1) who (2) whom (3) which (4) x
18. The robber stole the car \_\_\_\_\_ the lady parked in front of the supermarket.  
(1) which (2) who (3) x (4) whose
19. She likes hamburgers \_\_\_\_\_ are hot.  
(1) those (2) which  
(3) who (4) none of the above

**Choose the correct noun :**

20. Where \_\_\_\_\_ my jeans?  
(1) is (2) are  
(3) was (4) none of the above
21. The scissors on the table \_\_\_\_\_ mine.  
(1) is (2) are  
(3) both are correct (4) none of the above

**Choose the appropriate answer to form a meaningful sentence :**

22. I need some new clothes. Why don't you \_\_\_\_\_ these jeans?  
(1) take on (2) fit on (3) get in (4) try on
23. Quick! \_\_\_\_\_ the bus. It's ready to leave.  
(1) get in (2) switch in  
(3) get on (4) none of the above
24. The family \_\_\_\_\_ two cars.  
(1) have got (2) got (3) gets (4) has got

**Fill in with correct verb forms :**

25. Joji \_\_\_\_\_ in Tokyo for five years, but he left in 1993.  
(1) has lived      (2) lived      (3) lives      (4) is living
26. The Titanic \_\_\_\_\_ in 1912.  
(1) sunk      (2) has sank  
(3) sinked      (4) none of the above
27. Somebody \_\_\_\_\_ my bicycle! Now I'll have to walk home.  
(1) stole      (2) has stolen  
(3) steals      (4) none of the above
28. Gerry \_\_\_\_\_ off his bike three times this month.  
(1) fell      (2) is falling  
(3) has fallen      (4) none of the above
29. Ouch! \_\_\_\_\_ my finger  
(1) I cut      (2) I've cut  
(3) Both      (4) None of the above
30. According to a recent report, over 1000 people (contract) \_\_\_\_\_ Malaria in Canada in 1997, and the number (rise) \_\_\_\_\_ every year since 1994.  
(1) contract, rises      (2) contracted, risen  
(3) contracted, has risen      (4) contracted, rose

## SECTION II

### (PHYSICS)

31. How is a voltmeter connected in a circuit to measure the potential difference between two points?  
(1) Parallel (2) Series  
(3) Without resistance (4) None of the above
32. A battery of 9 V is connected in series with resistors of 0.2 ohm, 0.3 ohm, 0.4 ohm, 0.5 ohm and 12 ohm respectively. How much current would flow through the 12 ohm resistor?  
(1) 10 Amps (2) 9 Amps (3) 0.67 Amp (4) 12 Amps
33. Is potential difference a scalar or a vector quantity?  
(1) Vector quantity (2) Scalar quantity  
(3) Both scalar and vector (4) None of the above
34. The resistance of a metal \_\_\_\_\_ with increase in temperature :  
(1) decreases (2) increases  
(3) does not change (4) none of the above
35. What is the power of a torch bulb rated at 2.5 V and 500 mA?  
(1) 1.25 watt (2) 125 watt (3) 200 watt (4) None of the above
36. The S.I. unit of electric power is :  
(1) Ampere (2) Watt (3) Volt (4) Joule
37. The S.I. unit of charge is :  
(1) Ampere (2) Volt (3) Joule (4) Coulomb
38. Why does a compass needle get deflected when brought near a bar magnet?  
(1) compass needle is a small bar magnet  
(2) compass needle is made of nickel  
(3) compass needle is charged  
(4) none of the above
39. Which of the following property of a proton may change while it moves in a magnetic field?  
(1) mass (2) speed  
(3) velocity and momentum (4) all of the above
40. The magnetic field inside a long straight solenoid-carrying current :  
(1) is zero  
(2) decreases as we move towards its end  
(3) increases as we move towards its end  
(4) is the same at all points inside

41. Where should an object be placed in front of a convex lens to get a real image of the size of the object?
- (1) At the principal focus of the lens
  - (2) At twice the focal length
  - (3) At infinity
  - (4) Between the optical centre of the lens and its principal focus
42. No matter how far you stand from a mirror, your image appears erect. The mirror is likely to be :
- (1) Plane
  - (2) Concave
  - (3) Convex
  - (4) Either plane or convex
43. Which of the following lenses would you prefer to use while reading small letters found in a dictionary?
- (1) A convex lens of focal length 50 cm
  - (2) A concave lens of focal length 50 cm
  - (3) A convex lens of focal length 5 cm
  - (4) A concave lens of focal length 5 cm
44. An object is placed at a distance of 10 cm from a convex mirror of focal length 15 cm. What will be the nature of the image?
- (1) Real
  - (2) Virtual
  - (3) Virtual and erect
  - (4) Inverted
45. Name the physical quantity which remains the same when light goes from one medium to another :
- (1) Frequency of light
  - (2) Wavelength of light
  - (3) Speed of light
  - (4) None of the above
46. The optical centre of a lens is :
- (1) A point in a lens through which rays of light pass without deviation, in their original path
  - (2) A point in a lens through which rays of light pass with deviation
  - (3) The focal length of lens
  - (4) Power of a lens



47. The device for producing electric current is called  
(1) Galvanometer (2) Ammeter  
(3) Generator (4) Voltmeter
48. An electric generator :  
(1) generates magnetic field  
(2) generates energy  
(3) generates magnetic energy  
(4) converts mechanical energy into electrical energy
49. A moving electric charge produces :  
(1) both electric and magnetic fields (2) electric field only  
(3) magnetic field only (4) neither of these two fields
50. A solar water heater cannot be used to get hot water on :  
(1) A sunny day (2) A cloudy day  
(3) A hot day (4) A windy day
51. Which of the following is not an example of a bio-mass energy source?  
(1) Wood (2) Gobar gas (3) Nuclear energy (4) Coal
52. Most of the sources of energy we use represent stored solar energy. Which of the following is not ultimately derived from the sun's energy?  
(1) Geothermal energy (2) Wind energy  
(3) Nuclear energy (4) Bio-mass
53. Which colored surfaces are utilized for making solar cookers and water heaters?  
(1) White (2) Yellow (3) Red (4) Black
54. A nuclear reaction, in which heavy nucleus breaks into two nuclei of comparable mass, is called :  
(1) Nuclear fusion (2) Nuclear explosion  
(3) Nuclear fission (4) None of these
55. The fusion reactions occur at :  
(1) Low pressure (2) High temperature  
(3) Extremely high temperatures (4) High temperature and low pressure

- 56.** What is the S.I. Unit of power of a lens?  
 (1) Centimeter (2) Dioptre  
 (3) Gram (4) Inch
- 57.** If the magnification of a lens is positive. The image formed is :  
 (1) Virtual and erect (2) Virtual  
 (3) Real (4) Inverted
- 58.** A student has difficulty reading the blackboard while sitting in the last row. What could be the defect the child is suffering from?  
 (1) Myopia (2) Color blindness  
 (3) Hypermetropic (4) None of the above
- 59.** The change in focal length of an eye lens is caused by the action of the :  
 (1) Pupil (2) Retina  
 (3) Ciliary muscles (4) Iris
- 60.** The red light bends :  
 (1) Maximum (2) Least  
 (3) Does not bend (4) None of the above
- 61.** A convex lens is used to rectify :  
 (1) Long sightedness (2) Short sightedness  
 (3) Yellow spot (4) None of the above
- 62.** Separation of rays of different colors by a glass prism is called :  
 (1) Refraction (2) Diffraction  
 (3) Dispersion (4) Reflection
- 63.** Which of the following terms represent electric power in a circuit?  
 (1) IR (2) R/V (3) VI (4) V/R
- 64.** An electric motor takes 5 A current from a 220 V line. The power of the motor is :  
 (1) 1100 watt (2) 44 watt (3) 440 watt (4) 110 watt
- 65.** A piece of wire of resistance R is cut into five equal parts. The parts are then connected in parallel. If the equivalent resistance of this combination is R' then the ratio R/R' is :  
 (1) 1/25 (2) 1/5 (3) 5 (4) 25

**SECTION III**  
**(CHEMISTRY)**

- 66.** Ethanol that does not contain even a trace of water is called :
- (1) Rectified spirit                      (2) Absolute alcohol  
(3) Denatured spirit                     (4) Methylated spirit
- 67.** Vegetable ghee is obtained by :
- (1) oxidation of oils                     (2) reduction of oils  
(3) hydrogenation of oils               (4) none of these
- 68.** In ionic bonds :
- (1) electrons are transferred  
(2) electrons are shared  
(3) some electrons are shared where as others are transferred  
(4) none of these
- 69.** Vinegar is a dilute solution of :
- (1) Acetic acid                             (2) Formic acid  
(3) Methyl alcohol                        (4) Ethyl alcohol
- 70.** Which of the following liberates carbon dioxide when added to sodium carbonate?
- (1) Ethanol                                 (2) Ethanoic acid  
(3) Ethanal                                 (4) Formaldehyde
- 71.** Which metals burn easily?
- (1) Na, Mg                                 (2) Fe, Zn  
(3) Au, Cu                                 (4) Ag, Cu
- 72.** An element reacts with oxygen to give a compound with a high melting point. This compound is also soluble in water. The element is likely to be :
- (1) Calcium      (2) Carbon      (3) Silicon      (4) Iron
- 73.** The property of metals by virtue of which metal can be hammered into very thin sheets is called :
- (1) Ductility      (2) Malleability      (3) Lustre      (4) Sonor

74. What happens when dilute hydrochloric acid is added to iron fillings?
- (1) Hydrogen gas and iron chloride are produced
  - (2) Chlorine gas and iron hydroxide are produced
  - (3) No reaction takes place
  - (4) Iron salt and water are produced
75.  $\text{Fe}_2\text{O}_3 + 2\text{Al} \longrightarrow \text{Al}_2\text{O}_3 + 2\text{Fe}$
- The above reaction is an example of a :
- (1) Combination reaction
  - (2) Double displacement reaction
  - (3) Decomposition reaction
  - (4) Displacement reaction
76. In which reaction heat is absorbed :
- (1) Exothermic
  - (2) Endothermic
  - (3) Reduction
  - (4) None of the above
77. The substance which is used for white washing is :
- (1) Quicklime
  - (2) Barium Chloride
  - (3) Sodium Chloride
  - (4) Sodium Nitrate
78. Complete the following chemical equation :  $\text{Cu}(\text{NO}_3)_2 + \text{Zn} \longrightarrow$
- (1)  $\text{Cu}(\text{NO}_3)_2 + \text{Zn} \longrightarrow \text{CuNO}_3 + \text{ZnNO}_3$
  - (2)  $\text{Cu}(\text{NO}_3)_2 + \text{Zn} \longrightarrow \text{ZnCu} + 2\text{NO}_3$
  - (3)  $\text{Cu}(\text{NO}_3)_2 + \text{Zn} \longrightarrow \text{Zn}(\text{NO}_3)_2 + \text{Cu}$
  - (4) None of these
79. Which one is an endothermic reaction?
- (1) Reactant + heat  $\rightarrow$  Product
  - (2) Reactant - heat  $\rightarrow$  Product
  - (3) Reactant  $\rightarrow$  Product + heat
  - (4) Reactant + light  $\rightarrow$  Product
80. What was the drawback of the law of octaves?
- (1) Assign the position to the elements with large atomic weight
  - (2) Inert gases cannot be assigned
  - (3) Modern periodic law does not hold
  - (4) None of the above

81. Which of the following is an amphoteric oxide?  
(1) Carbon dioxide (2) Zinc oxide  
(3) Sodium oxide (4) Potassium oxide
82. In electrolytic refining anode is made of :  
(1) Thick block of the impure metal (2) Thin strip of the impure metal  
(3) Thin strip of the pure metal (4) Thick block of the pure metal
83. The most abundant metal in the earth's crust is :  
(1) Aluminium (2) Iron (3) Oxygen (4) Copper
84. The function of adding cryolite in the extraction of aluminium from pure alumina is :  
(1) To increase the fusion temperature  
(2) To decrease the fusion temperature and increase the electrical conductivity  
(3) To decrease the conductivity of alumina  
(4) None of the above
85. Aluminium does not oxidize readily in air because :  
(1) It is high in the electrochemical series  
(2) It is low in the electrochemical series  
(3) The metal does not combine with oxygen  
(4) The metal is covered with a layer of oxide which does not rub off
86. Baking soda turns yellow turmeric paper to :  
(1) Red (2) Blue (3) Yellow (4) White
87. Acids and bases react to produce :  
(1) Salt and oxygen gas (2) Salt and hydrogen gas  
(3) Salt and water (4) None of the above
88. Which of the following is a strong base?  
(1) NaOH (2) Ca(OH)<sub>2</sub> (3) NH<sub>4</sub>OH (4) None of these
89. The compound used for disinfecting water is :  
(1) Soda ash (2) Sodium Carbonate dehydrate  
(3) Bleaching powder (4) Baking soda
90. pH of a neutral solution at 25°C is :  
(1) 0 (2) 1.0 (3) 7.0 (4) 14

91. How many periods are there in the modern periodic table?  
(1) Seven periods (2) Five periods  
(3) Eight periods (4) None of above
92. Which of the following possesses zero electron affinity?  
(1) N (2) Ne (3) O (4) Li
93. Which of the following is a metal?  
(1) Boron (2) Calcium (3) Germanium (4) Silicon
94. Out of the following elements which has larger atomic radius? Na, Mg, Al, Si :  
(1) Na (2) Mg (3) Al (4) Si
95. How many structural isomer can you draw for pentane?  
(1) 6 (2) 5 (3) 4 (4) 3
96. Ethane, with the molecular formula  $C_2H_6$  has :  
(1) 6 covalent bonds (2) 7 covalent bonds  
(3) 8 covalent bonds (4) 9 covalent bonds
97. While cooking, if the bottom of the vessel is getting blackened on the outside, it means that :  
(1) the food is not cooked completely  
(2) the fuel is not burning completely  
(3) the fuel is wet  
(4) the fuel is burning completely
98. Name the element whose allo-tropic form is graphite :  
(1) Silicon (2) Carbon (3) Aluminium (4) Sodium
99. Name the product formed when ethanol is oxidized using alkaline potassium permanganate :  
(1) Ethanoic acid (2) Soda ash  
(3) Acetylene (4) None of the above
100. The molecular formula of an alcohol derived from pentane is :  
(1)  $C_3H_7OH$  (2)  $C_6H_{13}OH$  (3)  $C_4H_9OH$  (4)  $C_5H_{11}OH$

**Space For Rough Work**

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**Space For Rough Work**

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**SEAL**