Register Number | | | | | | |

SCIENCE

(English Version)

(New Syllabus)

Time Allowed : $2\frac{1}{2}$ Hours] [Maximum Marks : 100

PART – I

(Marks : 20 × 1 = 20)

N.B. : i) Answer *all* the questions.

ii) Choose and write the correct answer.

iii) Each question carries *one* mark.

1. In the oblique projection a projectile reaches the maximum height in 6 seconds. Its time of flight is

   a) 6 seconds b) 3 seconds

   c) 12 seconds d) 58·5 seconds.

2. When salt is added to ice, its freezing point

   a) increases b) decreases

   c) remains the same d) cannot be found.

3. In a rainy day the relative humidity is

   a) 70% b) 0%

   c) 50% d) 100%.

4. The process of changing a solid into a gas directly is called

a) sublimation b) melting

c) evaporation d) expansion.

5. A convex lens forms a virtual image if the object is

a) at F

b) at infinity

c) between F and $2F$

d) between the lens and the principal focus.

6. The resistance of a conductor carrying a current of $4A$ with a potential difference of $12V$ is

a) 48 ohm b) $\frac{1}{3}$ ohm

c) 16 ohm d) 3 ohm.

7. $_{88}Ra^{228}$ emits a beta particle. The new element formed has the atomic number

a) 224 b) 227

c) 87 d) 89.

8. Which of the following is a weak acid ?

a) HNO_3 b) H_2SO_4

c) HCl d) CH_3COOH.

9. Bleaching powder is prepared by passing chlorine through

a) quicklime b) milk of lime

c) dry slaked lime d) limestone.

10. Calcium sulphate hemihydrate is otherwise known as

a) Plaster of Paris b) bleaching powder

c) washing soda d) baking soda.

11. The chemical formula of baking soda is

a) CaO b) SiO_2

c) $NaHCO_3$ d) Na_2CO_3.

12. The lightest element known is

a) Helium b) Hydrogen

c) Argon d) Lithium.

13. Flavivirus causes

a) Filariasis b) Cholera

c) Dengue fever d) Malaria.

14. Respiration in the absence of oxygen is

a) aerobic respiration b) anaerobic respiration

c) transpiration d) guttation.

15. The other name for the accessory chromosome is

a) allosome b) autosome

c) body chromosome d) somatic chromosome.

16. The chromosomal number of Zygote is

a) Haploid b) Diploid

c) Tetraploid d) Polyploid.

17. Rheumatic fever is caused by

a) Streptococcus b) Staphylococcus

c) E-Coli d) Vibrio cholerae.

18. The aim of angioplasty treatment is

a) to reduce the body weight

b) to treat the chronic renal failure

c) to stretch the artery open, restoring normal flow of blood

d) to control the blood sugar.

19. Removal of forest cover and undergrowth in any area is called

a) Overgrazing b) Afforestation

c) Deforestation d) Exploitation.

20. Number of allelic genes in *ABO* blood group system is

a) one b) two

c) three d) four.

PART – II

(Marks : 10 × 1 = 10)

N. B. : i) Answer *all* the questions.

ii) Each question carries *one* mark.

iii) Answer should be in a word or in few words or in one line.

21. What is the relation between time of ascent and time of descent in the case of bodies moving under gravity ?

22. Why are the soft drink bottles containing gas made of thick walls ?

23. How do you convert a galvanometer into an ammeter ?

24. Gamma rays cannot be deflected by electric and magnetic fields. Why ?

25. Why does toothpaste become green when cabbage juice is added to it ?

26. Why is bleaching powder packed in air-tight containers ?

27. What is glacial acetic acid ?

28. Name the disease caused by Plasmodium.

29. How can Leukaemia be treated ?

30. Which technique is used to examine the alimentary canal of man ?

PART – III

[Marks : 15 × 2 = 30]

N. B : i) Answer 15 questions.

ii) Each question carries *two* marks.

iii) Students should answer the Question Nos. 32 and 38 compulsorily. These two are not included in the option.

31. Why does a stone released from a moving train follow a parabolic path ?

32. The coefficient of linear expansion of a material is $16 \times 10^{-6} K^{-1}$. What is its coefficient of cubical expansion ?

33. Why does cooking take longer time in hill stations ?

34. What are the conditions for total internal reflection ?

35. How will you distinguish between convex lens and concave lens ?

36. State Ampere's swimming rule.

37. What is known as radio-carbon dating ?

38. What is the pH of 0·1 M solution of HCl ?

39. What is RCC ? Give its uses.

40. What is annealing of glass ?

41. Define allotropy. Give an example.

42. Define minerals.

43. What is rectified spirit ?

44. Explain the term 'esterification'.

45. Differentiate between stomatal transpiration and lenticular transpiration.

46. Write a note on lampbrush chromosome.

47. What is induced mutation ?

48. Draw a labelled diagram of human sperm.

49. What is meant by diabetes ?

50. Name two plants which yield drugs from roots.

51. What are greenhouse gases ?

52. Name the essential elements required by plants.

PART – IV

(Marks : 8 × 5 = 40)

N. B : i) Answer *eight* questions, by choosing at least *two* questions from each Group.

ii) Each question carries *five* marks.

iii) Draw the diagrams wherever necessary.

GROUP – A

53. a) What are lubricants ? Give example.

b) Mention the properties of a good lubricant.

54. a) What is meant by photography ?

b) How is focusing done in a camera ?

c) What are *f*-numbers ?

55. Explain the working of a dry cell with a diagram.

56. Give with the principle, the production of *X*-rays.

GROUP – B

57. a) Define pH.

b) What is exothermic reaction ?

c) What is endothermic reaction ?

d) Define rate of chemical reaction.

58. Describe Haber process for the manufacture of Ammonia.

59. State the differences between soaps and detergernts and explain their cleansing actions.

GROUP – C

60. Draw the internal structure of bacterium and label the parts.

61. Explain in detail how chromosomes are classified based on the position of centromere.

62. What are the various applications of the stem cells ?

63. Write any five advantages of social forestry.

64. What are the aims of plant breeding ?