Vidyarthi Vigyan Manthan (VVM) – 2016

Dwitiya Senior Group (Class IX, X & XI)

Model Question Paper

(for practice purposes only)

Time: 90 Min   **Total number of questions: 50**   **Max Marks: 100**

General Instructions:

⟹ All questions are compulsory.

⟹ Use of calculator is not permitted.

⟹ There is no negative marking for any wrong answer.

⟹ You shall not go the questions page until asked to do so.

⟹ For any doubt, consult only the invigilators.

⟹ Mark answers on OMR sheet provided separately.

⟹ Follow the instructions provided on OMR sheet.

⟹ Hand over question paper and the OMR sheet to the invigilators before leaving the hall.

⟹ You shall not be allowed to leave the hall unless and until so announced by the invigilator.

⟹ Subject wise proportion may vary.

Fill all the details before opening the Question Paper Booklet (IN BLOCK LETTERS)

Name of Student [   ]   Roll No. [   ]

Exam Centre Code [   ]   OMR Sheet Code [   ]

Signature of student [   ]

01. A train is travelling with 10 m/s with a constant acceleration of $1m/s^2$, in the direction of velocity, for 20 sec. How far will it travel during this time?

    (a) 400 m   (c) 600 m
    (b) 200 m   (d) 100 m

02. If the distance between two bodies becomes 4 times initial, their mutual force of gravitation (f) becomes

    (a) 16 times   (c) 1/4 times
    (b) 4 times   (d) 1/16 times

03. If an incident ray passes through the centre of curvature of a spherical mirror, the reflected ray will

    (a) Pass through the pole   (c) Retrace its path
    (b) Pass through focus   (d) Be parallel to the principal axis

04. A current of 0.5A passes through a conductor for 2s. How many electrons flow through any cross section of the conductor during this interval?

    (a) 6.25×10^{18} electrons   (c) 1.60×10^{-18} electrons
    (b) 1.60×10^{19} electrons   (d) 6.0×10^{-18} electrons

05. Energy conversion occuring in the case of a refrigerator is ….

    (a) Electrical Energy into heat Energy   (c) Electrical Energy into Machanical Energy
    (b) Heat Energy into Electrical Energy   (d) Hot Energy into cold Energy

06. Which of the following quantities have different dimensional formula?

    (a) Momentum and impulse   (c) Stress and pressure
    (b) Energy and angular momentum   (d) Tension and surface tension

07. Orbital radius of a planet is doubled; then its time period becomes

    (a) 2 times   (c) $4^{1/3}$ times
    (b) Remains the same   (d) $1/4^{1/3}$ times

08. The number of molecules in 32 g of Oxygen gas is....

    (a) 3.2×10^{16} (c) 3.2×10^{23}
    (b) 6.02×10^{23} (d) 6.02×10^{10}

09. Isomers which can be interconverted through rotation around a single bond are....

    (a) Conformers   (c) Enantiomers
    (b) Diastereomers   (d) Positional isomers

10. Oxidation state of O in OF_2 and Na_2O are....

(a) +2, –2

(b) –2, +2

(c) –1, +1

(d) +1 , –1

11. Milk of magnesia is......... type of colloid

(a) Aerosol

(b) Foam

(c) Sol

(d) Emulsion

12. Which element was unknown when Mendeleev proposed classification

(a) Hydrogen

(b) Sodium

(c) Germanium

(d) Copper

13. Gold and Platinum are soluble in the mixture of

(a) Conc HCl + Conc HNO_3

(b) Conc HBr + Conc H_2SO_4

(c) Conc H_2SO_4 +ConcHNO_3

(d) Conc HCl + Conc H_3PO_4

14. If p and q are the roots of the quadratic equation $x^2 + x + 1 = 0$. Then how many of the following statements are true?

i) $p^2 = q$ ii) $p = q^2$ iii) $pq = 1$ iv) $p^3 = q^3$

(a) 1

(b) 2

(c) 3

(d) 4

15. The adjacent sides of a parallelogram are 45 cm and 28 cm. Find the sum of the squares of its diagonals.

(a) 809

(b) 4212

(c) 5618

(d) 5816

16. If $10^{0.3010} = 2$; $10^{0.4771} = 3$ and $10^k = 7.2$ then the value of k is ....

(a) 0.8257

(b) 0.8527

(c) 0.8572

(d) 0.8752

17. The GCD of two numbers is 25% of one of the numbers. The other number is seven times the GCD. If the sum of those numbers is 1375, then find out the difference between them.

(a) 375

(b) 500

(c) 875

(d) 1125

18. *AB* and *AC* each of length 6 cm are the chords of a circle of radius 5 cm. Find the length of chord *BC?*

(a) 10.2 cm

(b) 9.6 cm

(c) 8.4 cm

(d) 5.6 cm

19. Consider the equation: $(11x^2+33x+15) / (22x^2+33x-8) = (x+3) / (2x+3)$
    The number of roots of this equation is

    (a) 2   (c) 4
    (b) 1   (d) 3

20. Which tissue will function better for diffusion?

    (a) squamous epithelium   (c) columnar epithelium
    (b) smooth muscles   (d) cartilage

21. What is true for a fish?

    (a) it has two chambered heart   (c) it shows absence of bones
    (b) it has limbs   (d) it has three chambered heart

22. AIDS (HIV) can be transmitted by_____.

    (a) sports   (c) hugging
    (b) sexual contact   (d) sharing meals

23. The main three ingredients (elements) which chemical fertilizers normally supply to plants
    are_____, _____ and _____.

    (a) nitrogen, potassium and cadmium   (c) nitrogen, carbon and oxygen
    (b) nitrogen, phosphorus and iron   (d) nitrogen, phosphorus, and potassium

24. The developmental stage between egg and adult frog is _____.

    (a) fish like larva   (c) worm like body
    (b) cocoon   (d) caterpillar

25. The first product of deamination is _____.

    (a) methane   (c) urea
    (b) ammonia   (d) uric acid

26. Benjamin Franklin, who was a politician and a diplomat, proved that lightning was
    manifestation of electric discharge and he also invented _____

    (a) Lightning conductor   (c) Bifocal lenses
    (b) Current Transformer   (d) Laser Rays

27. Louis Pasteur graduated with honours in Physics and Mathematics but worked mainly in the
    field of _____

    (a) Bio-Informatics   (c) Chemistry
    (b) Zoology   (d) Astronomy

28. The concepts of astronomy and metaphysics are all described in _____, an ancient Hindu text of Vedic era.

(a) Rig Veda

(c) Vishnu Puran

(b) Atharva Veda

(d) Upnishad

29. The Iron Pillar of Delhi is famous for its _____

(a) Mechanical Properties

(c) Height

(b) Metallurgical Properties

(d) Use as a time machine

30. Medieval Arabs purchased their boats from India because:

(a) Indian Boats were cheaper

(c) Indian boats were bigger and more sophisticated

(b) Indian boats were made of non-corrosive steel

(d) Indian boats were available in vibrant colors and designs

31. Dr. Venu Bappu is very much respected and honoured name. His contribution was in the field of

(a) Green Revolution

(c) Nuclear Science

(b) White revolution

(d) Astronomy

32. GMRT is very well known facility in India. It is related with

(a) Road transport

(c) Radiation therapy

(b) Remote sensing

(d) Radio astronomy

33. The University of Cambridge offered C V Raman a professor's job which he declined stating that_____

(a) He was a vegetarian and it was not possible for him to live in another country

(c) He was not interested in teaching job

(d) He was an Indian and wanted to serve his country

(b) Salary offered was less

34. Which of the following is NOT true for Ayurveda?

(a) Ayurveda is one of the four basic Vedas in ancient Vedic literature.

(c) Ayurveda is not a book to recite; it is a system of medical practice.

(b) Ayurveda is a compilation of knowledge about ailments, symptoms, diagnosis and cure.

(d) Charak Sanhita was written prior to Ayurveda

35. Which of the following is named as Jawahar Sthal (जवाहर स्थल)?

(a) A building in Allahabad i. e. the birth place of Jawaharlal Nehru.

(c) A small area on moon in relation with Chandrayaan-1 mission.

(b) A museaun of on Prime Minister Jawaharlal Nehru.

(d) Nehru's residence in New Dehli.

36. The motivational slogan used by Dr Kalam 'I can do it' was inspired from Cesar Chavez. Who was Chavez?

(a) A labour leader
(b) A Professor
(c) Actor
(d) A Scientist

37. Dr Kalam joined his first service in Directorate of Technical Development and Production (Air). This organization was mandated to carry out inspection of which field?

(a) Military aircraft
(b) Civil aircraft
(c) Missiles maintenance
(d) Medicine

38. Which city gave Dr Kalam the first exposure to North Indian winter?

(a) Delhi
(b) Lucknow
(c) Kanpur
(d) Meerut

39. According to Dr Kalam, the King of Tibet reached the Indian border on 30 March 1959 due to Chinese Military atrocities. Who was he?

(a) Huan Hu
(b) Zion Zee
(c) Dalai lama
(d) Foo Doorjee

40. Which country conducted nuclear test code-named *Gerboise Bleue* in the year 1960?

(a) France
(b) India
(c) Russia
(d) USA

41. Who is India's first woman Director General of Police?

(a) Kanchan C. Bhattacharya
(b) Kiran Bedi
(c) Kavita Choudhary
(d) Merin Joseph

42. If $\sqrt{(pq)} = 6$ and p & q are positive integers, then which of the following cannot be a value of $(p\text{-}q)$?

(a) 0
(b) − 9
(c) 5
(d) 8

43. In the following number series, one number is wrong. Find the wrong number.

1, 7, 16, 2, 8, 15, 3, 9, 18.

(a) 7
(b) 2
(c) 15
(d) 9

44. In 30 litre of mixture, the ratio of milk to water is 7:3. To make their ratio 3:7, how much water should be added to the mixture?

(a) 10
(b) 21
(c) 40
(d) 49

45. A can do a work in 6 days and B in 8 days. With the help of a boy, they complete the work in 3 days and get Rs.200/-. What is the boy's share if the money is distributed in ratio of work done by them?

(a) Rs.75

(c) Rs.30

(b) Rs.45

(d) Rs.25

46. Find the least number to be subtracted from 1850 so that when the result is divided by 8, 12 and 15 will leave a remainder 5 in each case?

(a) 42

(c) 45

(b) 49

(d) 40

47. Who of the following does not belong to the group?

I. Charak   II. Sushrut   III. Varahmihir   IV. Dhanwantari

(a) Charak

(c) Varahmihir

(b) Sushrut

(d) Dhanwantari

48. What is 'Kinesiology'?

(a) Study of kinetics

(c) Study mechanics of body movements

(b) Study of kinematics

(d) There is no such term

49. Who authored the book titled "The Road Ahead"?

(a) Warren Buffet

(c) Ratan Tata

(b) Mother Teresa

(d) Bill Gates

50. The country in which, world's first oil painting have been found is . .

(a) Iran

(c) China

(b) Egypt

(d) Afganistan