SRI SHIRDI SAI
GROUP OF INSTITUTIONS

KADIAM | RAJAHMUNDRY

Lakshya believe... become
IIT ACADEMY

Group : M.P.C

LSAT-2026

SET - A

Duration : 1 Hour
Marks : 100

Name of the Student : .....

Name of the School : .....

Contact No : ..... Date : .....

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WRONG METHODS **CORRECT METHODS**

MATHEMATICS

1. Which term of A.P. 20, $19\frac{1}{4}, 18\frac{1}{2}, \ldots$ is first negative term?

   a) 18^{th} b) 15^{th} c) 28^{th} d) 27^{th}

2. If ratio of heights of two similar triangles is 4 : 9, then ratio between their areas is

   a) 2 : 3 b) 3 : 2 c) 81 : 16 d) 16 : 81

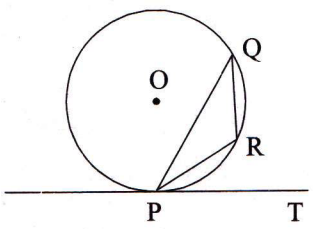
3. If p + q + r = 0 then the value of $\frac{2p^2(q+r)+2q^2(p+r)+2r^2(p+q)}{pqr}$ will be

   a) 3pqr b) $\frac{1}{pqr}$ c) 6 d) –6

4. For which positive values of k and p, equations $2x^2 + px + 8 = 0$ and $p(x^2 + x) + k = 0$ have equal roots?

   a) k = 1, p = 4 b) k = 2, p = 8 c) k = 4, p = 8 d) k = 2, p = 4

5. In figure, PQ is a chord of a circle with centre O and PT is its tangent at P. If $\angle QPT = 60°$, then $\angle PQR$ is .....



   a) 105° b) 115° c) 120° d) 130°

6. The angle of elevation of the top of a 12 m high tower from two points in opposite directions with it are complementary. If distance of one point from its base is 16 m, then distance of second point from tower's base is

   a) 24m b) 9m c) 12m d) 18m

7. Read the following statements carefully and choose the correct alternative.

   1) The slope of the line parallel to X-axis can be derived by the formula $\frac{x_2 - x_1}{y_2 - y_1}$

   2) The slope of the line parallel to Y-axis is 1

   3) The cotangent ratio of an angle made by the line with the positive direction of X-axis is called the slope of that line.

4) The slope of the line which makes acute angle with X-axis is less than zero and the slope of the line making obtuse angle with X-axis is greater than zero.

Alternative:

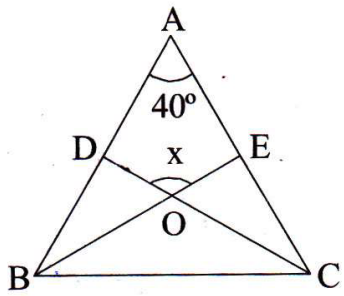
a) Statement 1 and 2 correct b) Statement 3 and 4 correct

c) Only statement 3 is wrong d) All statements are wrong

8. The shadow of a tower, when the angle of elevation of the sun is 30° is found to be 10 metre longer than when it was 60°. The height of the tower will be

a) $5\sqrt{3}m$ b) $5(\sqrt{3}-1)m$ c) $5(\sqrt{3}+1)m$ d) $3\sqrt{5}m$

9. In the given figure, AB = AC, $\angle BAC = 40°$, BE and CD are angle bisectors of $\angle B$ and $\angle C$ respectively. If $\angle DOE = x$, the value of x is



a) 140° b) 70°

c) 110° d) 40°

10. If the sum of 'n' terms of an arithmetic progression is $S_n = 3n + 2n^2$ then its common difference is

a) 9 b) 6 c) 4 d) 3

11. A circle is inscribed in a square of side 2.5 cm. Another circle is circumscribing this square. The ratio of areas of outer circle and inner circle is

a) $1:\sqrt{2}$ b) $\sqrt{2}:1$ c) 2 : 1 d) $\sqrt{3}:1$

12. If α,β are zeros of polynomial $x^2 - p(x+1) - k$ such that $(\alpha+1)(\beta+1) = 6$, then value of k is

a) 5 b) –1 c) –3 d) –5

13. If $217x + 131y = 913$ and $131x + 217y = 827$, then the value of $x + y$ is

a) 8 b) 5 c) 7 d) 6

14. The value of $\cos^2 5° + \cos^2 10° + \cos^2 15° + ... + \cos^2 85° + \cos^2 90°$ is

a) $9\frac{1}{2}$ b) 9 c) $8\frac{1}{2}$ d) 8

15. If the distance between the points (4, q) and (1, 0) is 5 units then the value of q is

a) 4 b) –4 c) ± 4 d) 0

16. If two angles of a triangle are $87°24'54''$ and $32°31'6''$, the third angle is

a) $\frac{\pi}{6}$ b) $\frac{\pi}{2}$ c) $\frac{\pi}{3}$ d) $\frac{\pi}{4}$

17. The volume and whole surface area of a cylindrical solid of radius 'r' units are v and s respectively. If the height of cylinder is 1 unit then $\frac{v}{s}$ is equal to

a) $\frac{1}{2}\left(1-\frac{1}{r+1}\right)$ b) $\frac{1}{2}\left(1+\frac{1}{r+1}\right)$ c) $\frac{1}{2}\left(1-\frac{1}{r}\right)$ d) $\frac{1}{2}\left(1+\frac{1}{r}\right)$

18. The sum of the reciprocals of the roots of the equation $\frac{101}{123}x+\frac{1}{x}+1=0$ is

a) $\frac{-101}{123}$ b) $\frac{123}{101}$ c) –1 d) 1

19. One hundred cards are numbered from 1 to 100. The probability that a card chosen at random has the digit 5 is

a) $\frac{19}{100}$ b) $\frac{100}{19}$ c) $\frac{10}{100}$ d) $\frac{5}{100}$

20. Water flows out through a circular pipe whose internal diameter is 2 cm, at the rate of 6 metres per second into a cylindrical tank. The radius of whose base is 60 cm. the rise in the level of water in 30 minutes is

a) 3 m b) –3 m c) 6 m d) –6 m

PHYSICS

21. When a ray of light from air enters a denser medium, it

a) bends away from the normal b) bends towards the normal

c) goes undeviated d) is reflected back

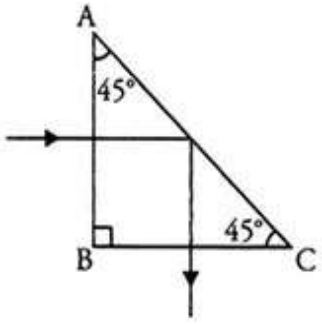
22. A ray of light passes through a right angled prism as shown in the figure, then the angles of incidence at the faces AC and BC are

a) 45° , 0°

b) 45° , 45°

c) 45° , 90°

d) 90° , 45°



23. The refractive index of a transparent medium is

a) least for red colour light b) maximum for violet colour light

c) maximum for red colour light d) both a and b

24. We cannot discuss the size and nature of image formed while using an equiconvex lens when the object is placed

a) in between F & optical cutre at b) at focus

c) in between F and 2F d) beyond 2F

25. When an object is placed at a distance 40cm from an equiconvex lens its image is also formed at the same distance as the object, then the focal length of the lens is

a) 10cm b) 80 cm c) 40 cm d) 20 cm

26. Among the following cases the image formed by a convex lens is not real

a) $0 < u < f$ b) $f < u < 2f$ c) $2f < u < \infty$ d) at 2f

27. A lens forms an inverted image of an object then

a) the lens is convex and the image is real

b) the lens is convex and the image is virtual

c) the lens is concave and the image is real

d) none of these

28. The phenomenon of electromagnetic induction is

a) the process of charging a body

b) the process of generating magnetic field due to current passing through a coil

c) producing induced current in a coil due to relative motion between a magnet and a coil

d) all the above

29. According to right hand thumb rule, whose direction is indicated by a thumb?

a) Electric current b) Magnetic field c) Magnetic force d) Motion of a conductor

30. When the power of eye lens increases, the defect of vision is produced. This defect of vision is known as

a) short sightedness b) long sightedness

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a) stars hide behind the sun

b) stars do not reflect sun rays during day

c) start vanish during the day

d) atmosphere scatters sunlight into a blanket of extreme brightness through which faint stars cannot be visible

32. Match the column I with column II and select the correct option from the codes given below.

Column	**Column II**
A) Choroid	i) Detects light stimulus absorbs light and prevent
B) Retina	ii) it from being reflected within the eyeball
C) Cornea	iii) Controls the size of the pupil
D) Iris	iv) Helps to focus light as it enters the eye

a) A-ii , B-i, C-iv, D-iii

b) A-i , B-ii, C-iii, D-iv

b) A-ii , B-iii, C-iv, D-i

d) A-iii , B-iv, C-i, D-iii

33. Which of the following phenomena cannot be explained by scattering of light?

a) Blue colour of sky

b) White colour of clouds

c) Tyndall effect

d) Formation of rainbow

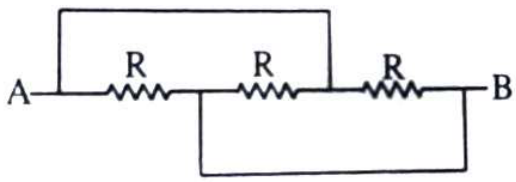
34. The resistance across A and B is

a) 3R

b) R

c) $\frac{R}{3}$

d) 2R



35. The relation between volt, watt and ampere is

a) volt = watt x ampere

b) watt = volt x ampere

c) ampere = volt x watt

d) none of these

CHEMISTRY

36. Elements do emit radiation on their own and this property is known as .....

a) radio activity b) refraction c) absorption d) emission

37. An element 'X' having atomic number 20 combines chemically with another element 'y' having atomic number '8' to form a compound 'z'. Which of the following statements are correct about the compound 'z'?

i) The formula of z is XY_2

ii) Melting point of 'Z' is very high

iii) Molten form of Z does not conduct electricity

iv) 'Z' is soluble in water but insoluble in petrol

a) i, ii and iv b) i, ii and iii c) ii and iv d) ii and iii

38. What happens to the atomic number during a chemical reaction?

a) It increases b) It decreases

c) Remains the same d) Changes alternatively

39. The correct order of first ionisation enthalpy value for elements of 2^{nd} period is

a) B < Be < C < O < N b) Be < B < N < C < O

c) Be < B < C < N < O d) More than one of the above

40. Which one will have the highest 2^{nd} ionisation energy.

a) $1s^2 2s^2 2p^6 3s^1$ b) $1s^2 2s^2 2p^4$ c) $1s^2 2s^2 2p^6$ d) $1s^2 2s^2 2p^6 3s^2$

41. Pick out the chemically most reactive elements from the given triads Li, Na, K, F, Cl, Br

a) Li and F b) Li and Br c) K and F d) K and Br

42. The nature of calcium phosphate is present in tooth enamel is

a) basic b) amphoteric c) acidic d) neutral

43. An aqueous solution turns the red litmus solution blue. Excess addition of which of the following solutions would reverse the change?

a) Baking powder b) Lime

c) Ammonium hydroxide solution d) Hydrochloric acid

44. Match the correct substance that are used to neutralise effect of column A

A) Ant sting	I) Vinegar
B) Wasp sting	II) Put skin in running water
C) Acidity in stomach	III) Baking soda
D) Acid fall on skin	IV) Milk of Magnesia

a) A-III, B-I, C-IV, D-II b) A-III, B-II, C-IV, D-I

c) A-II, B-IV, C-III, D-I d) A-III, B-II, C-IV, D-I

45. Which of the following compounds of carbon does not consists of ions?

a) $CaCO_3$ b) $NaHCO_3$ c) $CHCl_3$ d) CaC_2

46. Which of the following is the molecular formula of cyclobutane?

a) C_4H_{10} b) C_4H_6 c) C_4H_4 d) C_4H_8

47. Oils on treating with hydrogen in the presence of palladium or nickel catalyst form fats. This is an example of

a) Addition reaction b) Substitution reaction

c) Displacement reaction d) Oxidation reaction

48. Thermite is a mixture of

a) 1 Part of powdered Al and 1 part of Fe_2O_3

b) 1 Part of powdered Al and 3 parts of Fe_2O_3

c) 2 parts of powdered Al and 1 part of Fe_2O_3

d) 3 parts of powdered Al and 1 part of Fe_2CO_3

49. The total reaction in rusting the iron is

a) $Fe + 6CO \rightarrow Fe(CO)_6$ b) $3Fe + 3O_2 \rightarrow 3FeO_2$

c) $2Fe + O_2 + 4H^+ \rightarrow 2Fe^{+2} + 2H_2O$ d) $Fe + 3H_2O \rightarrow Fe(OH)_3 + \frac{3}{2}H_2$

50. When SO_2 gas is passed through saturated solution of H_2S, which of the following reaction occurs?

a) $SO_2 + 2H_2S \rightarrow 2H_2O + 3S$ b) $SO_2 + 2H_2S \rightarrow H_2O + S$

c) $SO_2 + H_2S \rightarrow H_2O + S$ d) $SO_2 + H_2O \rightarrow SO_3 + H_2$

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Deekshya
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compete... conquer...

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WRONG METHODS CORRECT METHODS

BIOLOGY

1. Cell division in plants is stimulated by

   a) Cytokinins b) Gibberellin c) Auxin d) Ethylene

2. Identify the mismatched pair.

   a) Charles Darwin - Natural selection

   b) Charles Lyell - Principles of Geology

   c) August Weismann - Principles of population

   d) James Watson - DNA

3. Which of the following diseases represent STDs?

   a) Typhoid, T.B b) AIDS, Gonorrhoea

   c) Dengue, Syphilis d) Malaria, Chickenpox

4. Plants with weak stems like in cucumber and bitter gourd show

   a) Phototropism b) Thigmotropism c) Geotropism d) Chemotropism

5. What is your dental formula?

   a) $\frac{3,2,1,2}{3,2,1,2}$ b) $\frac{1,2,2,3}{1,2,2,3}$ c) $\frac{2,1,2,3}{2,1,2,3}$ d) $\frac{2,3,1,2}{2,3,1,2}$

6. The excretory organ in cockroach

   a) nephridia b) raphides c) ureters d) malpighian tubules

7. Number of vestigial organs in human

   a) 160 b) 170 c) 180 d) 190

8. Palaeontologist deals with

   a) fossil evidences b) fossilised embryological evidences

   c) fossilised vestigial organ evidences d) all

9. Digestive juice without enzymes

   a) salivary amylase b) pancreatic juice c) bile juice d) gastric juice

10. The vitamin required for the synthesis of nucleic acid

    a) Tocoferol b) Riboflavin c) Cyanocobalamin d) Folic acid

11. The term cardiac refers to which organ in the body

a) vein b) capillary c) heart d) lymph

12. Total catchment area of Kolleru lake is

a) 1216 km^2 b) 6121 km^2 c) 1126 km^2 d) 2116 km^2

13. Name the plant from which alkaloid scopolamine is obtained.

a) Cinchona b) Papaver somniferum

c) Tridax d) Datura stramonium

14. Which is not a fossil fuel among the following

a) coal b) petroleum c) natural gas d) solar energy

15. How much percentage of the biomass is transferred from one trophic level to the next in a food chain?

a) 70 - 80% b) 10 - 20% c) 80 - 90% d) 20 - 30%

16. Dark reaction takes place in

a) chloroplast b) stroma c) mitochondria d) grana

17. The whole processes of cardiac cycle is approximately completed in

a) 0.6 sec b) 0.7 sec c) 0.9 sec d) 0.8 sec

18. What is the % of carbon dioxide in inhaled air?

a) 0.03% b) 0.13% c) 0.04% d) 0.05%

19. Which of the following is not a Green house gas?

a) Ozone b) Carbon dioxide c) Methane d) Chloro-fluoro carbons

20. If the alveoli of our lungs are spread out they will cover an area of nearly

a) 60 m^2 b) 160 m^2 c) 80 m^2 d) 100 m^2

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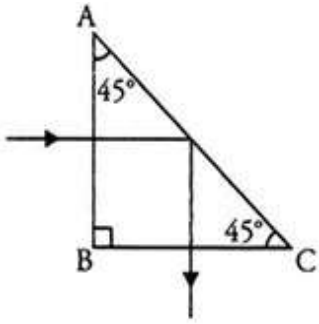

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b) A-ii , B-iii, C-iv, D-i d) A-iii , B-iv, C-i, D-iii

48. Which of the following phenomena cannot be explained by scattering of light?

a) Blue colour of sky b) White colour of clouds

c) Tyndall effect d) Formation of rainbow

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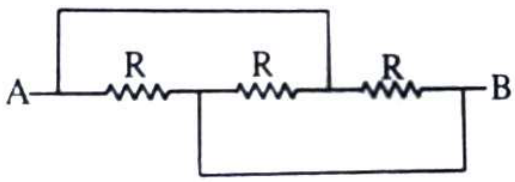
a) 3R b) R

c) $\frac{R}{3}$ d) 2R



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c) ampere = volt x watt d) none of these