AMRITA VISHWA VIDYAPEETHAM

(University established u/s 3 of UGC Act 1956)

Amrita Entrance Examination - Engineering

PHYSICS, CHEMISTRY & MATHEMATICS

| Question Booklet Version Code | D | Question Booklet No. | 401750 | Time: 21/2 Hrs |
|----------------------------------|--------|----------------------|--------|--------------------|
| Number of Pages | 20 | Number of Questions | 100 | Max. Marks: 300 |
| Name of the Candida | te | | | |
| Registration Number | 3 | | | |
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- 12. Rough work may be done on the space provided in this booklet.

(Continued on the last page)

PHYSICS

| 1. | An object of size 10 cm is kep length of the lens is 5 cm, the | of at a distance of 10 cm from a convex lens. If the focal size of the image is |
|----|---|---|
| | a) 10 cm | b) 20 cm |
| | c) 5 cm | d) 15 cm |
| 2. | | th 10 cm is to be made from a glass material. If the ial is 1.5, what must be the radius of curvature of the |
| | a) 0.1 m | b) 0.15 m |
| | c) 0.20 m | d) 0.30 m |
| 3. | | 6 lines / m is used to determine the wavelength of a age of first order diffraction is 30°. The wavelength of the |
| | a) 1000 nm | b) 500 nm |
| | c) 400 nm | d) 600 nm |
| 4. | the slits and screen in a Yo | μm and refractive index 1.5 is introduced between one of ung's double slit experiment. If the wavelength of the is $\bar{k}=0.75~\mu m$, the phase difference between the of the screen is equal to |
| | a) 6π | b) 3 π |
| | c) # | d) 2 m |
| 5. | What is the velocity of light in | a medium with refractive index 1.5? |
| | a) 2 x 108 m/s | b) 3 x 10 ⁸ m/s |
| | c) 1.5 x 10 ⁸ m/s | d) 2.5 x 10 ⁸ m/s |
| 6. | Which among the following ele | ectromagnetic radiations is the most energetic? |
| | a) Infra red light | b) Visible light |
| | c) Ultraviolet light | d) microwaves |
| 7. | Which of the following particles move with same speed? | s has the shortest de-Broglie wavelength, if all of them |
| | a) beta particle | b) alpha particle |
| | c) proton | d) neutron |
| - | | 59500 10 COMPAN |

| 8. The mass of a photon of wavelengt | h Nis given by |
|--|---|
| a) h %/c | b) ¾/hc |
| c) h/ %c | d) hc/ & |
| The radius of a nucleus with A = 2 nucleus with A = 4 is | 56 is 8 fermi (1 fermi = 1×10^{-15} m). The radius of a |
| a) 1 fermi | b) 2 fermi |
| c) 3 fermi | d) 4 fermi |
| 10. Photons of energy 6 eV fall on the stopping potential of the metal surf | ne surface of a metal with work function 4 eV. The ace is |
| a) 2 V | b) 10 V |
| c) 3 V | d) 1 V |
| 11. Addition of a minute quantity of pho | osphorus to a silicon crystal makes it |
| a) an n-type semiconductor | b) a bad conductor |
| c) a good conductor | d) a p-type semiconductor |
| 12. The electric current in a circuit is of θ ? | given by $I=I_0$ sin ($\omega t+\theta$). What is the dimension |
| a) second | b) 1/second |
| c) meter / second | d) dimensionless |
| 13. The velocity varies with time accord by the body in t = 2 s will be | ding to the relation, $v = 3t + 4$. The distance travelled |
| a) 10 m | b) 12 m |
| c) 14 m | d) 16 m |
| 14. When a projectile is at the higher energies are respectively | est point on its trajectory, the potential and kinetic |
| a) maximum and minimum | b) minimum and zero |
| c) zero and maximum | d) maximum and zero |
| 15. A block of mass 2 kg starts moving 60°. If the coefficient of kinetic frict | when the angle of inclination of the inclined plane is ion is 0.6, the frictional force is |
| a) 2 N | b) 1 N |
| c) 4 N | d) 0.5 N |

| a) 1:1 | b)√3 : 1 |
|--|---|
| c) 3 : 1 | d) 9:1 |
| 18. In an adiabatic process, the pro- | essure of a gas is proportional to the cube of its absolute |
| temperature. The value of 7(wi | hich equals C _p /C _v) is |
| a) 5/4 | b) 4/3 |
| c) 5/3 | d) 3/2 |
| 19. A mass is moving towards the | origin along the x-axis with constant velocity. Its angular |
| momentum with respect to the | origin |
| a) remains constant | b) is zero |
| c) increases | d) decreases |
| | 4° C/s, when its temperature is 80° C and is 2° C/s when mperature of the surroundings is |
| a) 30° C | b) 20° C |
| c) 10° C | d) 25° C |
| point P, which is at a distance d | n carries a charge of 1×10^{-9} C. The electric fields at a $i=3m$ from the centre of the sphere and at a point Q, at entre of the sphere are respectively |
| a) 1 N/C and 100 N/C | b) 1 N/C and zero |
| c) zero and 1 N/C | d) 1 N/C and 3 N/C |
| 22. An electric dipole lying along X- of magnitude 10j N/C. The torqu | axis with moment 5 Am ² is subjected to an electric field ue experienced is |
| a) 2 Nm | b) 10 Nm |
| c) 50 Nm | d) 25 Nm |

16. Two forces F₁ = (7i + 2j) N and F₂ = (-5i + 3j) N act on a particle. The third force F₃ that

17. Two satellites of masses 3M and M orbit the earth in circular orbits of radii r and 3r

b) (-2i - 5j) N

d) (2i - 5j) N

should act on the particle to make it move with constant velocity is

a) (2i + 5j) N

c) (-2i + 5j) N

respectively. The ratio of their speeds is

| passes through it. The series resist voltmeter of range 0 - 3 V is | ance that is to be connected to convert it into a |
|---|---|
| a) 500 Ω | b) 950 Ω |
| c) 1000 Ω | d) 750 Ω |
| in series with a 4Ω resistance. This of | nected in parallel and this combination is connected combination is powered by a voltage source of 12 V tio of power dissipated between 6Ω resistance and |
| a) 1:4 | b) 4:1 |
| c) 1:8 | d) 3:2 |
| 26. Two charged particles of charge rat uniform magnetic field of strength B radius R. The ratio of their masses is | io 1:4 moving with same velocity enter a region of and get deflected and move along curves with equal |
| a) 4:1 | b) 2:1 |
| c) 1:4 | d) 1:2 |
| 27. When a charged particle moves in a field B = 5j T, the trajectory of the p | a region with electric field E = 3i N/C and magnetic particle is |
| a) circle | b) parabola |
| c) straight line | d) helix |
| in opposite direction. The net magne | R_1 and R_2 carry equal amount of current but flowing stic field produced at the centre of these coils is zero. In coil B is |
| | b) R ₂ : R ₁ |
| c) (R ₂ / R ₁) ² | d) (R ₁ / R ₂) ² |
| 29. Which among the following is a descore of a transformer? | sirable feature of a ferromagnet that can be used as |
| a) high hysteresis loss and low reter | ntivity |
| b) low hysteresis loss and high reter | ntivity |
| c) high coercive field and high reten | itivity |
| d) low hysteresis loss and low reten | tivity |
| The phase difference between the cresistance in a series LCR circuit is | current through the resistance and voltage across the |
| a) 180° | b) 0° |
| c) 90° | d) 45° |
| | |
| | passes through it. The series resist voltmeter of range $0-3$ V is a) 500Ω c) 1000Ω 25. Two resistances 6Ω and 3Ω are comin series with a 4Ω resistance. This dand zero internal resistance. The ratio 4Ω resistance is a) 1:4 c) 1:8 26. Two charged particles of charge ration uniform magnetic field of strength B radius R. The ratio of their masses is a) 4:1 c) 1:4 27. When a charged particle moves in a field B = 5j T, the trajectory of the pal circle c) straight line 28. Two co-axial coils A and B of radius in opposite direction. The net magnet The ratio of the current flowing in the a) $R_1: R_2$ c) $(R_2/R_1)^2$ 29. Which among the following is a decore of a transformer? a) high hysteresis loss and low reter b) low hysteresis loss and low reter d) low hysteresis lo |

23. A parallel plate capacitor with air gap of 5 mm is 2 MFD. If a metallic plate of thickness

24. A galvanometer of resistance 50 ohm gives a full scale deflection when 3 mA current

b) 1 MFD

d) 2.5 MFD

3 mm is inserted in between the plates, the new capacitance is

a) 5 MFD

c) 2 MFD

CHEMISTRY

- 31. S_N1 reaction is favored by
 - a) non polar solvents
 - b) more number of alkyl group on the carbon atom attached to the halogen atom
 - c) small groups on the carbon attached to the halogen atom
 - d) no groups on the carbon attached to the halogen atom
- 32. Phenol is less acidic than
 - a) ethanol

b) o-nitrophenol

c) o-methylphenol

- d) o-methoxyphenol
- 33. Chloro ethane reacts with compound Z to form diethyl ether. Identify Z?
 - a) NaOH

b) H₂SO₄

c) C₂H₅ONa

- d) Na₂S₂O₃
- 34. Which of the following reagents may be used to distinguish between phenol and benzoic
 - a) Tollens' reagent

b) Molischi reagent

c) Neutral FeCl₃

- d) Aqueous NaOH
- 35. In the following sequence of reactions, the alkene affords the compound 'B'.

$$CH_3CH=CHCH_3$$
 $\xrightarrow{O_9}$ A $\xrightarrow{H_2O}$ B

The compound B is

a) CH₃CHO

b) CH₂COCH₂

c) CH₃CH₃CHO

- d) CH₂CH₂COCH₃
- 36. How many chiral carbons are there in β -D-(+)-glucose?
 - a) five

b) six

c) three

- d) four
- 37. Why are certain rubbers called as 'vulcanized rubber'?
 - a) They are formed under volcanic eruption
 - b) They are prepared by adding 5% of sulphur as cross-linking agent
 - c) They do not use any co-monomer
 - d) By the addition of excessive co-monomer

| c) cationic detergent | d) nonionic detergent |
|---|--|
| 40. Which one of the following acts as anti | ihistamine? |
| a) Equanil | b) Morphine |
| c) Serotonine | d) Bromophenylamine |
| 41. The actual atomic weight of an elemen | nt is represented in |
| a) number | b) "u" |
| c) "amu" | d) "mu" |
| 42. The weight of nascent oxygen in permanganate (Molecular weight 158) | milligrams obtained from 6.32 g of potassium in acid medium is |
| a) 16 | b) 0.016 |
| c) 0.16 | d) 1.6 |
| 43. The value of Plank's constant in units of | of Js is |
| a) 6.626 x 10 ⁻³⁴ | b) 6.626 x 10 ⁻²³ |
| c) 6.626 x 10 ⁻²⁷ | d) 1.38 x 10 ⁻²³ |
| 44. The mass of proton having a waveleng | th of 4.2A° is |
| a) 4.78 x 10 ⁻³³ kg | b) 4.78 x 10 ⁻³³ g |
| c) 7.17 x 10 ⁻³³ kg | d) 2.39 x 10 ⁻³³ g |
| 45. The measurement of a thermodynamic | property known as temperature is based on |
| a) zeroth law of thermodynamics | b) first law of thermodynamics |
| c) second law of thermodynamics | d) kirchoffs equation |
| 46. The bond dissociation enthalpies of kJ/mol respectively. The enthalpy of fo | $H_2(g)$, $Cl_2(g)$ and $HCl(g)$ are 435, 243 and 43 armation of $HCl(g)$ in kJ/mol will be |
| a) 121 | b) -1211 |
| c) -121 | d) -242 |
| 47. Defective coating of zinc over mild ste | el leads to |
| a) enhanced corrosion of mild steel | |
| b) increase of corrosion potential | |
| c) corrosion of zinc coating | |
| d) hydrogen evolution over mild steel | |

38. One of the common components of photochemical smog is

39. Sodium dodecylbenzenesulphonate refers to

b) acetaldehyde

d) CO₂

b) soap

a) formaldehyde

a) anionic detergent

c) methane

| | infinite dilution (λ ∞) of ammonium chloride, sodium are 120, 240 and 150 mhocm ² eq ⁻¹ . The $\lambda\infty$ of eq. 1 is |
|---|---|
| a) 270 | b) 210 |
| c) 30 | d) 510 |
| | of protein contains 0.63 g of protein. If the osmotic $s 2.57 \times 10^{-3}$ bar, the molar mass of the protein will be |
| a) 60039 | b) 61039 |
| c) 62039 | d) 63039 |
| | s P and Q crystallizes in cubic structure in which atoms Q are at the face center. The formula of the compound |
| a) AB ₃ | b) AB |
| c) A ₃ B | d) A ₂ B |
| 52. Syn gas is a mixture of | |
| a) carbon dioxide and hydrogen | b) carbon monoxide and hydrogen |
| c) methane and hydrogen | d) methane and carbon monoxide |
| 53. Which one of the following alkali | metal hydrides is thermally stable? |
| a) Lithium hydride | b) Sodium hydride |
| c) Potassium hydride | d) Rubidium hydride |
| 54. The correct order of acidic charac | ter of the following is |
| a) SO ₂ > CO ₂ > CO >N ₂ O ₅ | b) SO ₂ > N ₂ O ₅ > CO > CO ₂ |
| c) N ₂ O ₅ > SO ₂ > CO > CO ₂ | d) N ₂ O ₅ > SO ₂ > CO ₂ > CO |
| 55. Bell metal is an alloy of | |
| a) copper and tin | b) silver and copper |
| c) copper and nickel | d) copper, zinc and tin |
| 56. Ammonium dichromate is used in is | fireworks. The green coloured powder blown in the air |
| a) CrO ₃ | b) Cr ₂ O ₃ |
| c) Cr | d) CrO (O ₂) |

48. What will happen to the rate constant of a reaction when the temperature is raised by

b) Is halved

d) Not affected

10° C?

c) Is doubled

a) Increase by 10 times

| 57. Which one of the following com- water? | plexing agents is used for the estimation of hardness of |
|---|--|
| a) Cyanide | b) Pyrophosphate |
| c) EDTA | d) Ethylene diamine |
| 58. How many σ and π bonds are | present in nitromethane |
| a) 6 σand 1π | b) 5 σ and 2π |
| c) 6 σ and 2π | d) 5 σ and 1 π |

- 59. Retardation factor is calculated as
 - a) ratio between 'distance travelled by the substance from the base line and distance moved by the solvent from the base line'
 - ratio between 'distance travelled by the solvent from the base line and distance moved by the substance from the base line'
 - sum of 'distance travelled by the substance from the base line and distance moved by the solvent from the base line'
 - d) difference of 'distance travelled by the substance from the base line and distance moved by the solvent from the base line'
- 60. In which one of the following, Mn exhibits its highest oxidation state?
 - a) MnO₂

b) MnO42-

c) MnOr

d) MnO

MATHEMATICS

- 61. The probability that the roots of the equation $x^2 + 2nx + \left(4n + \frac{5}{n}\right) = 0$ are not real numbers where $n \in \mathbb{N}$ such that $n \le 5$ is
 - a) 2/5

b) 4/5

c) 1/5

- d) 3/5
- 62. If A is area lying between the curve $y = \cos x$ and x-axis between x = 0 and $x = \pi/2$, then the area of the region between the curve $y = \cos^2 x/2$ and the x-axis in the same interval is given by
 - a) (π+A)/2

b) (π/4)+A

c) (π/2)+A

d) (π/4)+(A/2)

- 63. $\int_{-1}^{1} \frac{x}{|x|} dx$ is equal to
 - a) 2

b) -2

c) 1

- d) 0
- 64. If the area bounded by the curve y = f(x), x-axis and the ordinates x = 1 and x = b is (b - 1) sin(3b + 4), then f(x) is
 - a) [(x-1) cos (3x+4)]

b) $[\sin(3x+4) + 3(x-1)\cos(3x+4)]$

c) sin (3x+4)

- d) None
- 65. The coefficient of x^{10} in the expansion of $(1 x^3)^4 (1 + x)^5$ is
 - a) 15

b) 20

c) 10

d) 6

66. Which one of the following is TRUE for any x

a)
$$\frac{1}{x+5} < \frac{1}{x+2} < \frac{1}{x+3}$$

b)
$$\frac{1}{x+2} < \frac{1}{x+3} < \frac{1}{x+5}$$

c)
$$\frac{1}{x+5} < \frac{1}{x+3} < \frac{1}{x+2}$$

d)
$$\frac{1}{x+3} < \frac{1}{x+2} < \frac{1}{x+5}$$

67. The order and degree of the differential equation $y - x \frac{dy}{dx} = \frac{a \frac{dy}{dx}}{\sqrt{1 + \left(\frac{dy}{dx}\right)^2}}$ is

68. The general solution of the differential equation (1 + $e^{(x/y)}$) dx + $e^{(x/y)}$ (1-(x/y)) dy = 0

a)
$$y + xe^{(x/y)} = C$$

b)
$$x + ye^{(x/y)} = C$$

c)
$$x + C = ye^{(x/y)}$$

d)
$$y + ye^{(x/y)} = C$$

69. The triangle with vertices A = (2, 7), B = (4, y) and C = (-2, 6) is right angled at B if the value of y is

70. The point equidistant from the three lines x + y = 1, y = 1 and x = 1 is

a)
$$\left(-\frac{1}{\sqrt{2}}, -\frac{1}{\sqrt{2}}\right)$$

b)
$$\left(+\frac{1}{\sqrt{2}}, -\frac{1}{\sqrt{2}}\right)$$

c)
$$\left(+\frac{1}{\sqrt{3}}, -\frac{1}{\sqrt{2}}\right)$$

d)
$$\left(+\frac{1}{\sqrt{2}}, -\frac{1}{\sqrt{5}}\right)$$

71. The equation of the line mid parallel to the two lines 5x - 2y - 9 = 0 and 5x - 2y + 7 = 0 is

a)
$$x + 5y - 8 = 0$$

b) 5x - y - 1 = 0

d) 5x - 2y - 1 = 0

72. The straight line 3x + 4y + 4 = 0 is moved parallelly so that its distance from the point

(3, -2) is increased by 4 units. Then its equation in the new position is

a)
$$3x + 4y - 30 = 0$$

b) 3x + 4y - 24 = 0

c)
$$3x + 4y - 21 = 0$$

d) 3x + 4y + 24 = 0

73. If a, b, c are AM, GM and HM respectively of two equal numbers, then

a)
$$2b = a + c$$

b) b = 2ac/(a+c)

c)
$$b^2 = ac$$

 $d) ab^2 = c$

74. The harmonic mean of the roots of the equation is

$$(7 + \sqrt{3}) x^2 - (6 + \sqrt{7}) x + (12 + 2\sqrt{7}) = 0$$

b) 6

d) 4

75. The general solution of x satisfying the system of equations $5^{(Simx+Simy)} = 1$; $25^{(Sim2x+Sim2y)} = 5$ is

b) 2nπ+π/6

d) $n\pi + \pi/6$

77. If $\sin \theta = 1/\sqrt{5}$ and $\tan \theta = 1/2$, then $\cos \theta$ is equal to

78. The value of
$$x \to 0 (1 + x^3 + Sinx)^{4/toax}$$
 is equal to

79. Rolle's Theorem for $f(x) = x(x-3)e^{(-w/2)}$ is applicable in the interval

80. Equation of the normal to the curve $y=(1+x)^y + Sin^{-1}(Sin^2 x)$ at x=0 is

a)
$$y = x$$

b)
$$y - x = 1$$

c)
$$y + x = 1$$
 d) $y - 1 = 2x$

81. If A and B are two matrices such that AB = A and BA = B, then $A^2 - B^2 =$

82. The system of linear equations $x + 3y + (\lambda + 2)z = 0$, 2x + 4y + 8z = 0, 3x + 5y + 10z = 0 has non-trivial solution, when λ is

83. If the roots of the equation $ax^2 + bx + c = 0$ are in the ratio 2 : 3, then

a)
$$6b^2 = 25 ac$$

b)
$$6b^2 = 25(a+c)$$

c)
$$13b^2 = 6$$
 ac

d)
$$13b^2 + 6$$
 ac = 0

84. If \vec{a} and \vec{b} are adjacent sides of a parallelogram with $|\vec{a} + \vec{b}| = |\vec{a} - \vec{b}|$, the adjacent sides of parallelogram are

b) inclined at an angle of
$$\pi/3$$

d) inclined at an angle of
$$\pi/4$$

85. The scalar $\vec{b} \cdot (\vec{c} + \vec{a}) \times (\vec{a} + \vec{b} + \vec{c})$ is equal to

c)
$$[\vec{a}, \vec{b}, \vec{c}] + [\vec{b}, \vec{c}, \vec{a}]$$

d)
$$[\vec{a}, \vec{b}, \vec{c}] + [\vec{b}, \vec{c}, \vec{a}] + [\vec{c}, \vec{a}, \vec{b}]$$

86. The equation of the line passing through the point of intersection of the lines and which

$$\frac{x-1}{1} = \frac{y-1}{0} = \frac{z-2}{1}$$
 and $\frac{x}{0} = \frac{y}{1} = \frac{z}{1}$ is

perpendicular

to

plane

5x-y+9z=10 is

a)
$$\frac{x}{5} = \frac{y-1}{1} = \frac{z-1}{9}$$

b)
$$\frac{x}{5} = \frac{y+1}{-1} = \frac{z-1}{9}$$

c)
$$\frac{x}{5} = \frac{y+1}{-1} = \frac{z+1}{9}$$

d)
$$\frac{x}{5} = \frac{y-1}{-1} = \frac{z-1}{9}$$

87. The equation of the plane through the intersection of the planes 2x - y + z = 6 an x + y + 2z = 7 and passing through the point (1, 1, 1) is

a)
$$2x - 7y - 5z + 10 = 0$$

b)
$$2x - 7y + 5z + 10 = 0$$

c)
$$2x - 7y - 5z - 10 = 0$$

d)
$$2x + 7y - 5z - 10 = 0$$

88. The equation of the line passing through the point (1, 1, 0) and parallel to the plans 3x + 2y + z = 5 is

a)
$$\frac{x-1}{-3} = \frac{y-1}{-2} = \frac{z}{1}$$

b)
$$\frac{x+1}{3} = \frac{y+1}{2} = \frac{z}{1}$$

c)
$$\frac{x-1}{3} = \frac{y-1}{2} = \frac{x}{1}$$

d)
$$\frac{x-3}{1} = \frac{y-2}{1} = \frac{z-1}{0}$$

89. The angle between the complex numbers 2 + 2i and -7 is

90. What is the value of $4+5\left(-\frac{1}{2}+t\frac{\sqrt{3}}{2}\right)^{334}+3\left(-\frac{1}{2}+t\frac{\sqrt{3}}{2}\right)^{365}$

b)
$$\frac{\sqrt{3}}{2}$$

c)
$$\frac{\sqrt{3}}{2}i$$

| 91. The ratio between the number | er of ways we can arrange n persons in a circular manner b |
|---|--|
| the number of ways we can a | |
| a) 1:n | b) n:1 |
| c) 1:1 | d) 1:2 |
| | n an excursion, in two cars, of which one can seat 5 and the |
| other only 4. In how many w | ays can they travel? |
| a) 274 | b) 26 |
| c) 126 | d) 96 |
| 93. The number of common tang | ents to the circles $x^{2} + y^{2} - 4y = 0$ and $x^{2} + y^{2} - 2y = 0$ is |
| a) 4 | b) 2 |
| c) 3 | d) 1 |
| 94. Centre of the circle passing ti | nrough (4, 5), (3, 4), (5, 2) is |
| a) (9/2, 7/2) | b) (7/2, 9/2) |
| c) (7/2, 7/2) | d) (9/2, 9/2) |
| 95. If e ₁ and e ₂ are the eccentrici | ties of a hyperbola and its conjugate then $e_1^2 + e_2^2$ will be |

 $\begin{array}{c} e_1^2 e_2^2 \\ \frac{1}{e_1^2} + \frac{1}{e_1^2} \end{array}$

b)

d)

Space for rough work

a) 1

c) 0

96. The equation $4x^2 + 7y^2 + 32x - 56y + 148 = 0$ represents

- a) an ellipse with center (4, -4)
- b) an ellipse with center (-4, 4)
- c) an ellipse with center (2, -2)
- d) an ellipse with center (-2, 2)

97. The equation for the circle obtained by shifting the circle x² + y² = 49 to 3 units down and 2 units left is:

a)
$$(x+3)^2 + (y+2)^2 = 49$$

b)
$$(x-3)^2 + (y-2)^2 = 49$$

c)
$$(x-2)^2 + (y-3)^2 = 49$$

d)
$$(x+2)^2 + (y+3)^2 = 49$$

98. The variance of a data set is k, then the variance of the data set obtained by shifting thoriginal data to 3 units is

99. Suppose that P(A/B) = 0.7, P(A) = 0.5 and P(B) = 0.2 then P(B/A) is,

100. A medical test is capable of identifying someone with the illness as positive is 99% and someone without illness as negative 95%. If the illness is present in the general population with probability 0.0001, the probability for anyone to have illness when the medical test results positive is

a) 0.00009

b) 0.002

c) 0.0001

d) 0.9980

(continued from the first page)

OMR ANSWER SHEET

- 13. Use the OMR answer sheet carefully; no spare sheet will be issued under any circumstance.
- 14. Do not fold or make any stray mark on the OMR sheet.
- 15. Use HB Pencil or Black ball point pen for shading the bubbles and ball point pen for writing.
- In the OMR answer sheet, make the following entries
 - Write the Registration Number, Question Booklet Number and Question Booklet Version code using ball point pen.
 - Fill the ovals corresponding to the Registration Number, Question Booklet Number and Question Booklet Version Code using HB pencil / ball point pen.
 - c. Write your Name and Signature using ball point pen.
- 17. Rough work should not be done on the answer sheet.

ANSWERING AND EVALUATION

- 18. For each question, four answers are suggested of which only one is correct / most appropriate. Mark the correct / most appropriate answer by darkening the corresponding bubble using HB pencil or Black ball point pen.
- 19. In case the candidate wishes to change the choice already shaded using HB pencil, he/she may erase the marking completely and thereafter shade the alternative bubble. If ball point pen is used for shading the ovals, make sure of the answer before shading since such markings cannot be altered.
- If more than one bubble is darkened against a question, it will be treated as an incorrect answer.
- 21. For each correct answer, three marks will be awarded.
- 22. For each incorrect answer, one mark will be deducted from the total score.
- 23. If any smudge is left on the OMR sheet, evaluation will become imperfect,