

**ICSE****VP Milestone
Objective Test-01****DURATION: 120 Minutes****DATE: 08/06/2025****M.MARKS: 80****Topics Covered**

Physics	:	Measurement And Experimentation, Motion in 1-D
Chemistry	:	The Language of Chemistry, Chemical Changes and Reactions
Biology	:	Introducing Biology, Cell - The Unit of Life, Tissue Plant and Animal Tissue
Mathematics	:	Rational and Irrational Numbers, Compound Interest (Without Using Formula) Compound Interest (Using Formula), Expansions

GENERAL INSTRUCTION

1. There are **80** questions in this test. All are compulsory.
2. Since the time allotted for this question paper is very limited you should make the best use of it by not spending too much time on any one question.
3. Use only Blue/Black ball point pen to darken the appropriate circle.
4. The mark should be dark and should completely fill the circle.
5. Darken only one circle for each question
6. Rough work must not be done on the Answer sheet and do not use white-fluid or any other rubbing material on the Answer sheet.
7. Each question carries 1 mark. There is no negative marking.

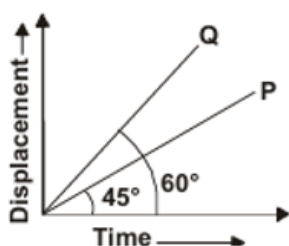
Name of the Candidate (In CAPITALS): _____**Roll Number:** _____**OMR Bar Code Number:** _____**Candidate's Signature:** _____ **Invigilator's Signature** _____

PHYSICS

- Which among the following physical quantities does not possess a unit?
(A) Area
(B) Volume
(C) Density
(D) Specific gravity
- Which of the following is not a derived quantity?
(A) The floor area of a room
(B) The height of a room
(C) The volume of air in a room
(D) The weight of air in a room
- The following information is given in respect of a vernier calipers. 1 main scale division = 0.3 cm
30 V.S.D. = 29 M.S.D.
The least count of this vernier calipers is _____.
(A) 0.01 mm
(B) 0.1 cm
(C) 0.03 cm
(D) 0.1 mm
- Match the column-

Column-A		Column-B	
1	Force	P	N/m ²
2	Energy	Q	Js ⁻¹
3	Power	R	kg m s ⁻²
4	Pressure	S	erg

 (A) 1 - R, 2 - Q, 3 - S, 4 - P
 (B) 1 - R, 2 - S, 3 - Q, 4 - P
 (C) 1 - R, 2 - S, 3 - P, 4 - Q
 (D) 1 - R, 2 - P, 3 - Q, 4 - S
- Two straight lines drawn on the same displacement time graph make angles 45° and 60° as shown. The ratio of the two velocities Q and P is:



- (A) $\sqrt{3}:1$ (B) 1 : 1
(C) 1 : 2 (D) $\sqrt{3}:2$

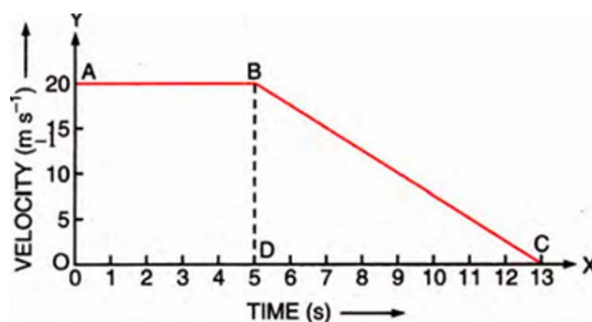
- Assertion:** Time period of a simple pendulum is independent of length of simple pendulum.
Reason: The time period is the time taken for one oscillation.
 (A) Both Assertion (A) and Reason (R) are true, and Reason (R) is the correct explanation for Assertion (A).
 (B) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation for Assertion (A).
 (C) Assertion (A) is true, but Reason (R) is false.
 (D) Assertion (A) is false, but Reason (R) is true.
- 1 fermi = m
(A) 10⁻¹⁰
(B) 10⁻⁵
(C) 10⁻¹²
(D) 10⁻¹⁵
- The unit of time is:
(A) light year
(B) parsec
(C) decade
(D) angstrom
- The diameter of a thin wire can be measured by :
(A) a vernier callipers
(B) a metre rule
(C) a screw gauge
(D) none of these.
- The table below shows the distance in cm, travelled by the objects A, B and C during each second.

Time	Distance (in cm) covered in each second by A, B and C		
	Object A	Object B	Object C
1st second	20	20	20
2nd second	20	36	60
3rd second	20	24	100
4th second	20	30	140
5th second	20	48	180

- Which object is moving with constant speed?
 - Which object is moving with a constant acceleration?
 - Which object is moving with irregular acceleration?
- (A) A, B, C (B) A, C, B
(C) B, A, C (D) B, C, A

11. **Assertion:** 10 decades make a century.
Reason: 1 century makes 100 years and 1 decade make 10 years.
- (A) Both Assertion (A) and Reason (R) are true, and Reason (R) is the correct explanation for Assertion (A).
 (B) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation for Assertion (A).
 (C) Assertion (A) is true, but Reason (R) is false.
 (D) Assertion (A) is false, but Reason (R) is true.
12. Arrange the following time units in ascending order:
 (i) 1 Leap Year (ii) 1 Decade
 (iii) 1 Century (iv) 1 Millennium
 (v) 1 Lunar Month
- (A) (v) < (i) < (ii) < (iii) < (iv)
 (B) (v) < (ii) < (i) < (iii) < (iv)
 (C) (i) < (v) < (ii) < (iii) < (iv)
 (D) (iv) < (iii) < (ii) < (i) < (v)
13. A train takes 2 hours to reach station B from station A. and then 3 hours to return from station B to station A. The distance between the two stations is 200 km. Find the average speed of train.
- (A) 160 km/h (B) 150 km/h
 (C) 80 km/h (D) 200 km/h
14. Read the statements given below and choose the correct alternative.
- (i) The speedometer of a car measures the instantaneous speed of the car.
 (ii) Average speed is equal to the total distance covered by an object divided by the total time taken.
- (A) (i) – True, (ii) – True
 (B) (i) – True, (ii) – False
 (C) (i) – False, (ii) – True
 (D) (i) – False, (ii) – False
15. Compare the time periods of two simple pendulums of length 1 m and 16 m at a place.
- (A) The time period of the pendulum with length 16 m is 4 times that of the pendulum with length 1 m.
 (B) The time period of the pendulum with length 16 m is 16 times that of the pendulum with length 1 m.
 (C) The time period of the pendulum with length 16 m is twice that of the pendulum with length 1 m.
 (D) The time period of both pendulums is the same.

16. Calculate the total distance travelled by an object using following graph:



- (A) 150 m
 (B) 180 m
 (C) 80 m
 (D) 200 m
17. **Statement 1:** A body can be at rest or in motion at the same time.
Statement 2: Motion and rest are relative terms.
- (A) Both statements are correct
 (B) Both statements are incorrect
 (C) Only statement 1 is correct
 (D) Only statement 2 is correct
18. The length of a seconds' pendulum is nearly :
- (A) 0.5 m
 (B) 9.8 m
 (C) 1.0 m
 (D) 2.0 m
19. In the diagram below identify the part of the screw gauge labelled as A, B, C and D.
-
- (A) Spindle, Stud, Main scale, Thimble scale
 (B) Spindle, Stud, Thimble scale, Main scale
 (C) Stud, Spindle, Main scale, Thimble scale
 (D) Stud, Spindle, Thimble scale, Main scale
20. At the maximum height of a body thrown vertically up:
- (A) velocity is not zero but acceleration is zero.
 (B) acceleration is not zero but velocity is zero.
 (C) both acceleration and velocity are zero.
 (D) both acceleration and velocity are not zero.

CHEMISTRY

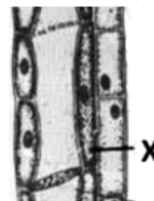
- 21.** The metal M forms an oxide, M_2O_3 . The formula of its nitride will be:
 (A) M_2N_3
 (B) MN
 (C) M_2N
 (D) M_3N_2
- 22.** Which of the following pairs of aqueous solutions will NOT result in a precipitation reaction?
 (A) Sodium chloride and silver nitrate
 (B) Potassium sulphate and barium chloride
 (C) Ammonium nitrate and calcium chloride
 (D) Magnesium sulphate and sodium carbonate
- 23.** Modern atomic symbols are based on the method proposed by
 (A) Bohr
 (B) Dalton
 (C) Berzelius
 (D) Alchemist
- 24.** What is the atomicity of blue vitriol?
 (A) 6
 (B) 13
 (C) 19
 (D) 21
- 25.** Which of the following is the correct pair of atom and its atomic symbol?
 (A) Sulphur - Su
 (B) Potassium - P
 (C) Phosphorus - P
 (D) Helium - H
- 26.** Hydrargyrum is the Latin name of:
 (A) Gold
 (B) Silver
 (C) Mercury
 (D) Platinum
- 27.** **Assertion(A):** Potassium nitrate decomposes to give potassium nitrite along with evolution of nitrogen gas.
Reason (R): An equation must be balanced in order to comply with "Law of Conservation of Matter".
 (A) Both A and R are true and R is the correct explanation of A.
 (B) Both A and R are true but R is not the correct explanation of A.
 (C) A is true but R is false.
 (D) A is false but R is true.
- 28.** Upon Heating, Orange coloured ammonium dichromate swells and decomposes, evolving nitrogen and water vapours, and solid residue is left behind. Identify the colour of the solid residue.
 $(NH_4)_2Cr_2O_7 \rightarrow Cr_2O_3 + 4H_2O \uparrow + N_2 \uparrow$
 (A) Red
 (B) Yellow
 (C) Blue
 (D) Green
- 29.** What will be the overall charge on ammonium ion?
 (A) - 1
 (B) + 1
 (C) - 2
 (D) + 2
- 30.** **Statement 1:** $2KClO_3(s) \xrightarrow[\text{Catalyst}]{\text{Heat}} 2KCl(s) + 3O_2(g)$
Statement 2: It is a decomposition reaction and endothermic in nature.
 (A) Statement 1 is true and statement 2 is false.
 (B) Statement 1 is false and statement 2 is true.
 (C) Both statements are true.
 (D) Both statements are false.
- 31.** Electronic configuration of Ca^{2+} is shown by:
 (A) Ar
 (B) He
 (C) F
 (D) Ne
- 32.** The negatively charged monoatomic, monovalent ion/radical is
 (A) Hydrogen
 (B) Oxide
 (C) Sulphate
 (D) Iodide
- 33.** Which among the following is an example of triatomic molecule?
 (A) Ammonium hydroxide
 (B) Carbon dioxide
 (C) Helium
 (D) Hydrogen
- 34.** Rasika added a solution of silver nitrate to a solution of sodium chloride. The product would be:
 (A) Black solid mass silver chlorite
 (B) White precipitate of silver chloride
 (C) Dirty green precipitate of sodium chloronitrate
 (D) Blue colour solution of sodium nitrite
- 35.** An element X with atomic number 13 combines with another element Y of atomic number 17. The formula of the compound will be:
 (A) XY_2
 (B) X_2Y
 (C) X_3Y
 (D) XY_3

36. **Assertion:** When writing the chemical formula of ionic compounds, the charges of ions are balanced to ensure electrical neutrality.
Reason: The total positive charge must equal the total negative charge in the compound.
 (A) Both Assertion and Reason are true, and Reason is the correct explanation of Assertion.
 (B) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.
 (C) Assertion is true, but Reason is false.
 (D) Assertion is false, but Reason is true.
37. What is the formula of plumbous oxide?
 (A) PbO (B) PbO₂
 (C) Pb₂O (D) PbO₃
38. A light green amorphous powder X when heated strongly produces a black residue and gives off a gas that turns limewater milky. This gas does not have any effect on acidified Potassium Dichromate. Identify X.
 (A) Lead oxide (B) Copper carbonate
 (C) Blue vitriol (D) None of the above
39. Match the column I and column II and select the correct option.
- | Column -I | | Column -I | |
|-----------|--------|-----------|----|
| (i) | Iron | (M) | Cu |
| (ii) | Copper | (N) | Ag |
| (iii) | Silver | (O) | Au |
| (iv) | Gold | (P) | Fe |
- (A) (i) - (M), (ii) - (P), (iii) - (N), (iv) - (O)
 (B) (i) - (M), (ii) - (P), (iii) - (O), (iv) - (N)
 (C) (i) - (P), (ii) - (M), (iii) - (N), (iv) - (O)
 (D) (i) - (P), (ii) - (M), (iii) - (O), (iv) - (N)
40. Which of the following is a use of a photochemical reaction?
 (A) To obtain metals from their ores
 (B) To produce acids
 (C) To produce salts
 (D) Photosynthesis in plants

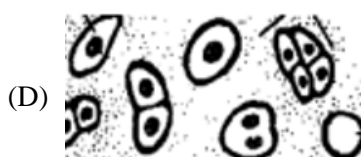
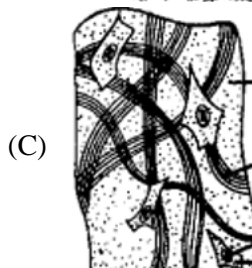
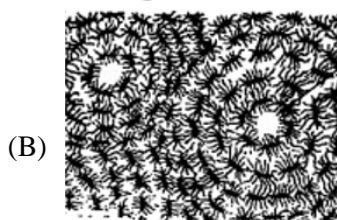
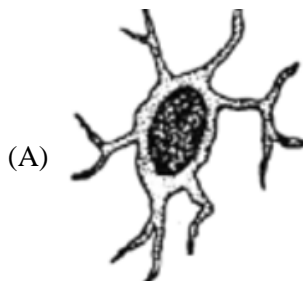
BIOLOGY

41. **Assertion:** Cells generally remain small in size.
Reason: Different regions of a cell can communicate with each other rapidly for the cell to function effectively.
 In the light of the above statements, choose the **correct** answer from the options given below.
 (A) Both Assertion and Reason are true and Reason is the correct explanation of Assertion.
 (B) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.
 (C) Assertion is true and Reason is false.
 (D) Assertion is false and Reason is true.

42. Refer to the given figure of the longitudinal section of phloem. Identify the main function of X from the option given below.

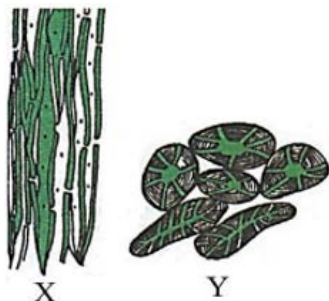


- (A) They help in the transport of water and minerals from leaves to storage organs and other parts of the plant.
 (B) They help in the functioning of the sieve tube cells.
 (C) They are mainly concerned with the storage of starch, fat and other organic food material.
 (D) They mainly provide support.
43. Some of the characteristics of a certain connective tissue is given below.
 I. It is a non-porous tissue.
 II. It has thickened intercellular substance(matrix).
 III. It has no blood vessels or nerves.
 IV. Found in the tip of the nose, external ears, trachea and bronchial tubes.
 Identify the connective tissue from the following diagrams given below considering above characteristics.

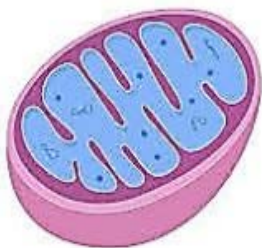


44. The larger surface area relative to the volume of the cell ensures:
- (A) greater diffusion of nutrients into the cell.
 (B) any damage to the cell can be easily repaired.
 (C) there is no diffusion of respiratory gases.
 (D) Both (A) and (B)

45. Refer to the given figure of a plant tissue and identify the incorrect statement regarding it.



- (A) X represents the longitudinal section, and Y represents the cross section of sclerenchyma.
 (B) They are composed of long, narrow, dead cells.
 (C) These tissues store food in potatoes.
 (D) The cells of these tissues have very thick walls due to the deposition of lignin.
46. Identify the given organelle below and choose the correct function of this organelle.

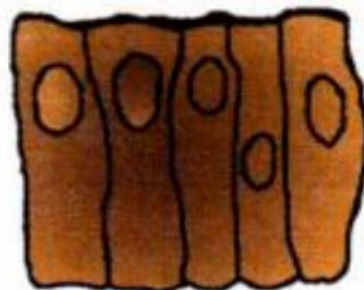


- (A) Gives rigidity and shape to the plant cell.
 (B) It serves as the supportive framework for the cell.
 (C) It is the seat of cellular respiration and stores energy.
 (D) It helps in protein synthesis.
47. Protoplasm is -
- (A) Cytoplasm + Nucleus
 (B) Cytoplasm - Nucleus
 (C) Cytoplasm + Organelles - Nucleus
 (D) Cytoplasm - Organelles
48. Who among the following scientists proposed that new cells arise from pre-existing cells?
- (A) Theodor Schwann
 (B) Matthias Schleiden
 (C) Rudolf Virchow
 (D) Aristotle

49. Match the **column I** with **column II** and select the correct option.

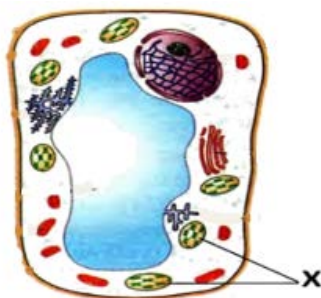
Column I		Column II	
(P)	Phycology	(i)	Study of fossils
(Q)	Mycology	(ii)	Study of algae
(R)	Histology	(iii)	Study of fungi
(S)	Palaentology	(iv)	Study of tissues

- (A) P-(iii), Q-(ii), R-(i), S-(iv)
 (B) P-(iii), Q-(i), R-(ii), S-(iv)
 (C) P-(iv), Q-(ii), R-(i), S-(iii)
 (D) P-(ii), Q-(iii), R-(iv), S-(i)
50. **Assertion:** The electron microscope can give a magnification of over 200,000 times.
Reason: It uses beams of electrons which are bent by the glass lenses to magnify the image.
- (A) Both assertion and reason are true, and the reason is the correct explanation for the assertion.
 (B) Both assertion and reason are true, but the reason is not the correct explanation of the assertion.
 (C) Assertion is true, but the reason is false.
 (D) Reason is true, but the assertion is false.
51. Golgi complexes in plant are more specifically known as -
- (A) peroxisomes
 (B) oleosomes
 (C) sphaerosomes
 (D) dictyosomes
52. Refer to the given diagram. This type of epithelium is generally found in the:



- (A) salivary glands and pancreatic ducts.
 (B) kidney tubules.
 (C) Both (A) and (B).
 (D) inner lining of stomach and intestine.

53. Identify the correct function of the organelle "X" in the given diagram.



- (A) Gives rigidity and shape to the plant cell.
(B) Regulates the entry and exit of solutes and ions in the cell.
(C) It functions as the supportive framework for the cell.
(D) It traps solar energy for the process of photosynthesis.

54. Study the given characteristics of muscular tissue.

- I. These muscles are not under the control of one's will.
II. They are spindle shaped.
III. Uninucleated
IV. Found in the walls of intestine, muscles of the iris of the eye.

Identify the muscle from the given characteristics.

- (A) Striated muscles
(B) Unstriated or smooth muscles
(C) Cardiac muscles
(D) Both (B) and (C)
55. Identify the incorrect statement with respect to squamous epithelium and mark the correct option.
- (A) It is composed of cells which are thin, flat with prominent nuclei.
(B) It protects the underlying parts from mechanical injury, germs, harmful chemicals and drying up.
(C) It is found in the glandular ducts like salivary glands and pancreatic duct.
(D) None of the above.
56. The organelle which plays a role in cellular reproduction and also plays a role in determining the way the cell will develop and what form it will exhibit at the time of maturity by directing the chemical activities of the cell is:
- (A) mitochondria
(B) plastids
(C) golgi complex
(D) nucleus

57. **Assertion:** Endoplasmic reticulum helps in the synthesis of lipids.

Reason: Rough Endoplasmic reticulum is involved in lipid synthesis while smooth endoplasmic reticulum is involved in protein synthesis.

In the light of the above statements, choose the **correct** answer from the options given below.

- (A) Both Assertion and Reason are true and Reason is the correct explanation of Assertion.
(B) Both Assertion and Reason are the true, but Reason is not the correct explanation of Assertion.
(C) Assertion is true and Reason is false.
(D) Assertion is false and Reason is true.

58. Identify the tissue from the diagram given below and mark the correct option. This tissue is present beneath the epidermis of the skin and makes the skin elastic and helps it to withstand pulling strain.



- (A) Adipose tissue
(B) Areolar tissue
(C) Cartilage tissue
(D) Cuboidal epithelium
59. The _____ canals are found in the bone which is a series of microscopic tubes in the outermost region of bone called cortical bone.
- (A) haversian
(B) chondrin canal
(C) rivinus
(D) None of the above
60. Which of the following characteristics is incorrect regarding the meristematic cells.
- (A) Cells are small.
(B) Cell wall is thick.
(C) Cells are continuously dividing.
(D) Large nucleus.

MATHEMATICS

61. Which of the following is a rational number?

- (A) π (B) $\sqrt{2}$
(C) 3.4 (D) 1.010010001....

62. The number which is to be subtracted from $\sqrt{72}$ to get $\sqrt{32}$ is :

- (A) $2\sqrt{10}$ (B) $4\sqrt{2}$
(C) $3\sqrt{2}$ (D) $2\sqrt{2}$

63. The compound interest on ₹3750 for 2 years at 8% p.a., compounded annually is :

- (A) ₹604 (B) ₹614
(C) ₹624 (D) ₹642

64. A sum becomes ₹9680 in 2 years at 10% p.a. compounded annually. The principal

- (A) ₹7,000 (B) ₹7,500
(C) ₹8,000 (D) ₹8,500

65. The compound interest for the second year on ₹8000 invested for 3 years at 10% p.a. is :

- (A) ₹780 (B) ₹880
(C) ₹980 (D) ₹1080

66. Identify the irrational number from the following:

- (A) $\frac{5}{2}$ (B) 3.1416
(C) $\sqrt{11}$ (D) -1.5

67. What is the decimal expansion of a number if it is irrational?

- (A) Terminates after some digits
(B) Terminates or repeats
(C) Repeats but doesn't terminate
(D) Neither terminates nor repeats

68. If $x = 3 + 2\sqrt{2}$, then $x + \frac{1}{x} =$

- (A) $4\sqrt{2}$
(B) $6\sqrt{2}$
(C) 6
(D) 4

69. A sum of ₹10,000 is invested at 20% p.a. compound interest. If interest is compounded half-yearly, find the amount after 1.5 years.

- (A) ₹ 13,000
(B) ₹ 13,310
(C) ₹ 13,382
(D) ₹ 3,200

70. Rationalise the denominators of: $\frac{\sqrt{3}+1}{\sqrt{3}-1}$

- (A) $2 + \sqrt{5}$ (B) $3 + \sqrt{3}$
(C) $3 + \sqrt{2}$ (D) $2 + \sqrt{3}$

71. Which of the following is an irrational number?

- (A) 0.14
(B) $0.141\overline{6}$
(C) $0.141\overline{6}$
(D) 0.4014001400014...

72. Two rational numbers between $\frac{-3}{7}$ and $\frac{-1}{7}$ are :

- (A) $\frac{4}{14}, \frac{3}{14}$ (B) $\frac{-4}{14}, \frac{3}{14}$
(C) $\frac{4}{14}, \frac{-3}{14}$ (D) $\frac{-4}{14}, \frac{-3}{14}$

73. The difference between compound and simple interest on ₹ 5,000 at 10% p.a. for 2 years is:

- (A) ₹ 50 (B) ₹ 55
(C) ₹ 60 (D) ₹ 65

74. Nikita invests ₹6000 for 2 years at a certain rate of interest compounded annually. At the end of the first year, it amounts to ₹6720. The rate of interest p.a. is:

- (A) 8% (B) 10%
(C) 12% (D) 14%

75. Find the square of: $3 + 2\sqrt{5}$

- (A) $25 + 12\sqrt{6}$
(B) $29 + 12\sqrt{5}$
(C) $29 + 12\sqrt{6}$
(D) $25 + 12\sqrt{5}$

76. The compound interest on a certain sum of money at 5% p.a. for two years is ₹246. The simple interest on the same sum for three years at 6% p.a. will be :

- (A) ₹432
(B) ₹430.50
(C) ₹432.75
(D) ₹431.75

77. Find the values of 'a' and 'b' in each of the following

- $\frac{2 + \sqrt{3}}{2 - \sqrt{3}} = a + b\sqrt{3}$
(A) $a = 7, b = 7$
(B) $a = 4, b = 7$
(C) $a = 7, b = 4$

(D) $a = 6, b = 4$

78. Find the value of:

$$\frac{1}{\sqrt{2}+1} + \frac{1}{\sqrt{3}+\sqrt{2}} + \frac{1}{2+\sqrt{3}} \text{ is}$$

- (A) 1 (B) 0
(C) $2\sqrt{3}$ (D) -1

79. If $m = \frac{1}{3-2\sqrt{2}}$ and $n = \frac{1}{3+2\sqrt{2}}$, find mn

- (A) 0 (B) 2
(C) -1 (D) 1

80. A sum of money doubles itself in 5 years at a certain rate of compound interest. In how many years will it become 8 times itself at the same rate?

- (A) 10 years
(B) 12 years
(C) 15 years
(D) 20 years



