

1. Draw the labelled diagram of the following:-

- | | |
|--------------------|-----------------------|
| a. Nucleus | h. Chloroplast. |
| b. 70's ribosome. | i. Golgi body |
| c. 80's ribosome. | j. ER |
| d. Bacterial cell. | k. Fluid mosaic model |
| e. Animal cell | l. Chromosome |
| f. Plant cell | m. Vacuole |
| g. Mitochondria | n. Polyribosome |

2. Write the function of the following:-

- | | |
|------------------|---------------|
| a. Nucleus | i. Centriole |
| b. Mitochondria | j. Plastid |
| c. Chloroplast. | k. Peroxisome |
| d. Golgi body | l. Lysosome |
| e. ER | m. Mesosomes |
| f. Vacuole | |
| g. Cell membrane | |
| h. Cell wall | |

1. Differences between:-

- a. Plant cell and animal cell.
- b. Prokaryotic cell and eukaryotic cell.
- c. Unicellular and multicellular organisms.
- d. RER and SER.
- e. Cell wall and plasma membrane
- f. Mitochondria and chloroplast.
- g. 70's ribosome and 80's ribosome.
- h. Leucoplast and chromoplast.
- i. Chloroplast and chromoplast.
- j. Nucleus and nucleolus.
- k. Cell organelles and cell inclusion.
- l. Nucleus and nucleoid.
- m. Diffusion and osmosis.
- n. Phagocytosis and pinocytosis.
- o. Endocytosis and exocytosis.
- p. Plasmolysis and deplasmolysis.
- q. Ribosome and centriol.
- r. Protoplasm and protoplast.
- s. DNA and RNA.

Class – 9th

Assignment

- Find the value of $2.\overline{6} - 0.\overline{9}$
- Simplify : $5\sqrt[3]{250} + 7\sqrt[3]{16} - 14\sqrt[3]{54}$
- Express $0.\overline{235}$ in the form $\frac{p}{q}$, where P and q are integers and $q \neq 0$
- If $a = 9$ and $b = \sqrt{17}$ then find the value of $(a^2 - b^2)^{1/3}$
- Express the rational number $1/13$ in decimal form and hence, find the decimal expansion of $4\frac{4}{13}$.
- By taking $\pi = 3.141$, evaluate $\frac{2\pi+3\sqrt{2}}{5}$ upto three places of decimal.
- if $(\sqrt{6})^n = 216$, then find the value of $n^{3/2}$
- Which of the following is greater: $\frac{12}{\sqrt{2}}$ or $\frac{18}{\sqrt{3}}$?
- Find the value of x if $(5^2)^7 = (125)^x$
- Find an irrational number between $\frac{1}{7}$ and $\frac{2}{7}$.

NTSE Based Question

- The value of $(81)^{0.17} \times (81)^{0.08}$ is
 (a) 4 (b) 3 (c) 9 (d) 81.25
- If $4^{2y} = 256$ then 4^{-y} equals
 (a) $\frac{1}{16}$ (b) $\frac{-1}{16}$ (c) 16 (d) $\frac{1}{4}$
- The value of $\{3-2(7-8)^5\}^5$ is
 (a) 625 (b) $\frac{1}{5^5}$ (c) 1 (d) 3125
- The rationalizing factor of $5\sqrt{a^2b^3c^4}$ is.
 (a) $5\sqrt{a^3b^2c}$ (b) $4\sqrt{a^3b^2c}$ (c) $3\sqrt{a^3b^2c}$ (d) $\sqrt{a^3b^2c}$
- Rational number between $\sqrt{2}$ and $\sqrt{3}$ is
 (a) $\frac{\sqrt{2}+\sqrt{3}}{2}$ (b) $\frac{\sqrt{2}\times\sqrt{3}}{2}$ (c) 1.5 (d) 1.8
- If $m = \frac{cab}{a-b}$, then a equals
 (a) $\frac{m(a-b)}{ca}$ (b) $\frac{cab-ma}{-m}$ (c) $\frac{1}{1+c}$ (d) $\frac{ma}{m+ca}$

7. The value of $\left(\sqrt[6]{27} - \sqrt{6\frac{3}{4}}\right)^2$ equals.

(a) $\frac{\sqrt{3}}{2}$

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

(c) $\frac{\sqrt{3}}{4}$

(d) $\frac{3}{4}$

8. The rational number between $\frac{1}{2}$ and $\frac{1}{3}$ is

(a) $\frac{2}{5}$

(b) $\frac{1}{5}$

(c) $\frac{3}{5}$

(d) $\frac{4}{5}$

9. Simplify $\frac{2^{n+4} - 2(2^n)}{2(2^{n+3})}$

(a) $2^{n+1} - \frac{1}{8}$

(b) -2^{n+1}

(c) $1 - 2^n$

(d) $\frac{7}{8}$

10. If $\left(a + \frac{1}{a}\right)^2 = 9$ then $a^3 + \frac{1}{a^3}$ equals

(a) $\frac{10\sqrt{3}}{3}$

(b) $3\sqrt{3}$

(c) 18

(d) $7\sqrt{7}$

11. If $25^{x-1} = 5^{2x-1} - 100$ then the value of x is

(a) 3

(b) 2

(c) 4

(d) 1

12. If $x = 2 - \sqrt{3}$ then the value of $x^2 + \frac{1}{x^2}$ and $x^2 - \frac{1}{x^2}$ respectively are.

(a) 14, $8\sqrt{3}$

(b) -14, $-8\sqrt{3}$

(c) 14, $-8\sqrt{3}$

(d) -14, $8\sqrt{3}$

13. If $4^{44} + 4^{44} + 4^{44} + 4^{44} = 4^x$ then x is

(a) 45

(b) 44

(c) 176

(d) 11

14. Which of the following numbers can be represented as non - terminating repeating decimals?

(a) $\frac{39}{24}$

(b) $\frac{3}{16}$

(c) $\frac{3}{11}$

(d) $\frac{137}{25}$

15. Which of the following numbers has the terminating decimal representation?

(a) $\frac{1}{7}$

(b) $\frac{1}{3}$

(c) $\frac{3}{5}$

(d) $\frac{7}{3}$

16. If $g = t^{2/3} + 4t^{-1/2}$ what is the value of g when $t = 64$?

(a) $\frac{31}{2}$

(b) $\frac{33}{2}$

(c) $\frac{257}{16}$

(d) 16

17. If $x = 9 + 4\sqrt{5}$ find the value of $\sqrt{x} - \frac{1}{\sqrt{x}}$

(a) 1

(b) 2

(c) 3

(d) 4

18. The smallest rational number by which $\frac{1}{3}$ should be multiplied so that its decimal expansion terminates after one place of decimal is

(a) $\frac{3}{100}$

(b) $\frac{3}{10}$

(c) 3

(d) 30

19. Evaluate : $(27)^{-\frac{1}{3}} \cdot (27)^{-\frac{1}{3}} [(27)^{\frac{1}{3}} - (27)^{2/3}]$

(a) $\frac{-2}{3}$

(b) $\frac{1}{3}$

(c) $\frac{-1}{3}$

(d) $\frac{2}{3}$

20. Find the value of $\frac{4}{(216)^{\frac{-2}{3}}} - \frac{1}{(256)^{\frac{-3}{4}}}$

(a) 144

(b) 64

(c) 80

(d) 36

21. Find the value of $\frac{(x^{a+b})^2 (x^{b+c})^2 (x^{c+a})^2}{(x^a x^b x^c)^4}$

(a) 1

(b) 4

(c) -1

(d) 2

22. If $3^{5x} \times \frac{81^2 \times 6561}{3^{2x}} = 3^7$ then $x =$

(a) 3

(b) -3

(c) $\frac{1}{3}$

(d) $\frac{-1}{3}$

23. If $x = \frac{\sqrt{3}+1}{2}$ then $x^3 + \frac{1}{x^3} =$

(a) $\frac{28\sqrt{3}+15}{8}$

(b) $\frac{27\sqrt{3}-35}{4}$

(c) $\frac{28\sqrt{3}-15}{8}$

(d) $\frac{27\sqrt{3}+35}{4}$

24. If $x = \frac{\sqrt{p+q} + \sqrt{p-q}}{\sqrt{p+q} - \sqrt{p-q}}$ Then find the value of $qx^2 - 2px + q$

(a) 0

(b) 1

(c) -1

(d) 2

25. If $a = \frac{\sqrt{2}+1}{\sqrt{2}-1}$ and $b = \frac{\sqrt{2}-1}{\sqrt{2}+1}$ then value of $a^2 + ab + b^2$ is

(a) 70

(b) 35

(c) 40

(d) 34



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SUMMER HOLIDAY WORK

CLASS – 9th

Subject – Physics

Q.1 The velocity of a body moving at an initial speed of 20m/s and having an acceleration of 4 m/s^2 after 2 sec. will be:-

- a. 24m/s b. 28m/s c. 32m/s d. 40m/s

Q.2 A body moving uniformly along a circular path has :-

- a. constant velocity b. constant speed
c. variable speed d. none of these.

Q.3 The distance travelled by a body in certain time is equal to the ____ under the velocity – time graph for the given time interval.

Q.4 The magnitude of average velocity is always ____ than or equal to the average speed.

Q.5 Tick true or false:-

- a. The velocity of an object can be uniform or variable.
b. The slope of a speed – time graph of a moving body gives its acceleration.
c. Negative value of acceleration shows that velocity of the body is increasing.

Q.6 The following questions consist of two statements-

Assertion (A) and Reason (R) . Answer these questions selecting the appropriate options given below:-

- 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 correct explanation of A.

c. A is true but R is false.

d. A is false but R is true.

i. Assertion (A) : A body on a circular path is accelerated.

Reason (R) : The motion of a body on circular path is under gravity.

ii. Assertion (A) : The displacement of a body may be zero, when distance travelled by it is non-zero.

Reason (R) : Displacement is the longest distance between initial and final positions.

Q.7 Under what condition the magnitude of average velocity is equal to the average speed.

Q.8 Give the other name of negative acceleration.

Q.9 A body moves in a circular path with uniform speed. Does its velocity change, if so, how?

Q.10 What is SI unit of velocity?

Q.11 What do you mean by acceleration Derive relation $S = ut + \frac{1}{2}at^2$.

Q.12 Define uniform circular motion.

Q.13 Using velocity – time graph derive:- $v^2 - u^2 = 2as$.

Q.14 An object undergoes an acceleration of 10m/s^2 starting from rest. Find the distance travelled in 5s.

Q.15 A train starting from rest attains a velocity of 72kmh^{-1} in 5 min.

Assuming that the acceleration is uniform, Find :- i. Acceleration

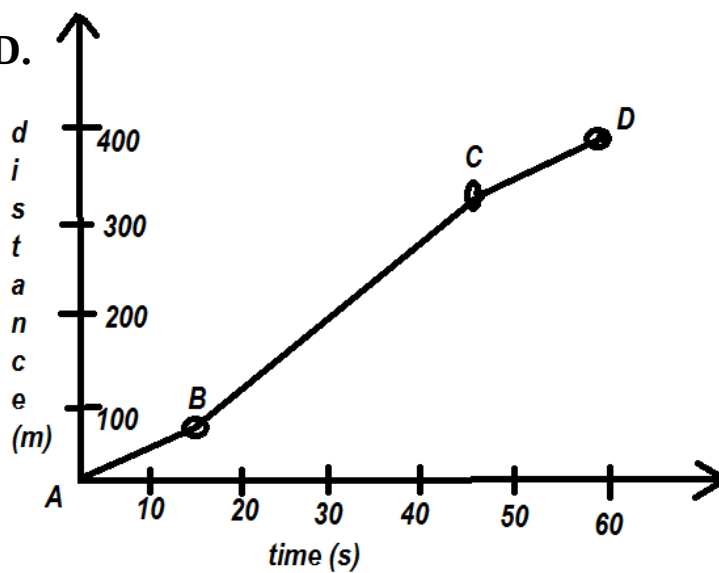
ii. The distance travelled by the train for attaining this velocity.

- Q.16** A bullet moving with 10m/s hits a wooden plank. The bullet stops after penetrating the plank 2cm deep. Calculate the retardation of the bullet.
- Q.17** An object starting from rest travels 20m in first 2s and 160m in next 4s . What will be the velocity after 7s from the start?
- Q.18** What is the nature of distance - time graphs for uniform and non- uniform motion of an object?
- Q.19** What is the quantity which is measured by the area occupied below the velocity-time graph?
- Q.20** A car has a uniform acceleration of 4ms^{-2} . What distance will it cover in 10s after start?
- Q.21** An athlete completes one round of a circular track of diameter 200m in 40sec . What will be the distance covered and the displacement at the end of 2min and 20 seconds?
- Q.22** Abdul while walking to school computes the average speed for his trip to be 20km/h^{-1} . On his return trip along the same route, there is less traffic and average speed is 30km/h^{-1} . What is average speed for Abdul's trip?
- Q.23** A ball is dropped gently from a height 10m . If its velocity increases uniformly at the rate of 20m/s^{-2} , with what velocity will it strike to the ground? After what time will it strike the ground?
- Q.24** How will equation of motions moving with a constant velocity will change?
- Q.25** Prachi rides her bicycle along a straight level road. Fig shows a graph of her distance moved against time.
- a. Describe her motion:-
- i. from A to B
 - ii. from B to C
 - iii. from C to D

b. Calculate:-

i. her average speed from A to D.

ii. her maximum speed.





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Unit Test - IV

Class – 9th
Max Marks:20

Subject : S.St NTSE
Time : 1 Hour

1. भारत का सबसे पूर्वी देशांतर कौन-सा है?
अ) 97° 25' पू० ब) 77° 6' पू० स) 68° 7' पू० द) 82° 32' पू०
2. कर्क रेखा किस राज्य से नहीं गुजरती है?
अ) राजस्थान ब) उड़ीसा स) छत्तीसगढ़ द) हरियाणा
3. उत्तर से दक्षिण भारत की कुल लंबाई कितनी है?
अ) 2214 कि०मी० ब) 3214 कि०मी० स) 4214 कि०मी० द) 5214 कि०मी०
4. भारत में गंगा की कुल लंबाई कितने कि०मी० है?
अ) 2025 कि०मी० ब) 3125 कि०मी० स) 2525 कि०मी० द) 5225 कि०मी०
5. ग्रीष्मवकाश में आप यदि कवरत्ती जाना चाहते हैं तो किस केन्द्र शासित क्षेत्र में जाएंगे?
अ) लक्षद्वीप ब) अंडमान और निकोबार स) पुंडुचेरी द) द्वीव और दमन
6. लुई सोहलवे को फ्रांस का सम्राट कब बनाया गया था?
अ) 1674 में ब) 1774 में स) 1874 में द) 1947 में
7. सन् 1715 में फ्रांस की कुल जनसंख्या कितने करोड़ थी?
अ) 2.3 करोड़ ब) 3.8 करोड़ स) 4.3 करोड़ द) 5.3 करोड़
8. एस्टेटस जेनराल की बैठक कब बुलाई गई थी?
अ) 5 मई 1789 ब) 5 मई 1689 स) 5 मई 1889 द) 5 मई 1989
9. फ्रांस में नैशनल असेंबली ने संविधान का पूरा प्रारूप तैयार कब किया था।
अ) सन् 1591 में ब) सन् 1691 में स) सन् 1791 में द) सन् 1891 में
10. लुई 16 वें को फांसी कब दी गई?
अ) 21 जनवरी 1593 ब) 21 जनवरी 1693 स) 21 जनवरी 1793 द) 21 जनवरी 1893