

## Navik GD Physics Paper March 20, 2021 Shift

### 20 Questions

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**Que. 1** An electric bulb of 100 Watt operates 10 hour a day. What is the cost of energy to operate it for one day at Rs. 6 per kWh?

1. Rs. 60
2. Rs. 600
3. Rs. 0.6
4. Rs. 6

**Solution** Correct Option - 4

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**Que. 2** Unit of dipole moment is:

1. amp-m
2. coulomb-m
3. amp-m<sup>2</sup>
4. coulomb-m<sup>2</sup>

**Solution** Correct Option - 2

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**Que. 3** SI unit of permittivity is \_\_\_\_\_

1. C<sup>2</sup> m<sup>2</sup> N<sup>-1</sup>
2. C<sup>-1</sup> m<sup>2</sup> N<sup>-2</sup>
3. C<sup>2</sup> m<sup>2</sup> N<sup>2</sup>
4. C<sup>2</sup> m<sup>-2</sup> N<sup>-1</sup>

**Solution** Correct Option - 4

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**Que. 4** In Youngs experiment, when the distance between slit and screen is doubled, while separation of slit is halved, then fringe width will be:

1. 4 times
2. 1/4
3. doubled
4. unchanged

**Solution** Correct Option - 1

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**Que. 5** Rutherford's alpha ( $\alpha$ ) particle scattering experiment resulted into the discovery of

1. proton
2. nucleus in the atom
3. electron
4. atomic mass

**Solution** Correct Option - 2

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**Que. 6** When the distance between the two charges remains the same and the charges on them are increased by two times, then the force between the two charges

1. remains the same
2. becomes four times
3. Reduced to one-fourth
4. becomes double

**Solution** Correct Option - 2

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**Que. 7** When the distance between the two charges is reduced by half without changing the magnitude of charges. Then the force between the two charges

1. remains the same
2. becomes four times
3. becomes double
4. Reduced to one-fourth

**Solution** Correct Option - 2

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**Que. 8** If a dielectric is inserted between the parallel plate capacitor then capacitance will \_\_\_\_\_.

1. remains the same
2. increase
3. decrease
4. increase initially and then decrease

**Solution** Correct Option - 2

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**Que. 9** If the distance between the plates of a parallel plate capacitor is halved keeping other parameters unchanged. The the new capacitance will become-

1. Two times of the initial capacitance
2. One third of the initial capacitance
3. Nine times of the initial capacitance
4. Remains unchanged

**Solution** Correct Option - 1

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**Que. 10** Five capacitor of capacitance  $C$  are connected (I) in series and then (II) in parallel. The ratio of equivalent capacitance in case (I) to that in case (II) is:

1. 1 : 5
2. 5 : 1
3. 1 : 25
4. 25 : 5

**Solution** Correct Option - 3

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**Que. 11** If the mass of a body is doubled then what'll happen to its acceleration if the same force is applied?

1. It will become half
2. It will become double

3. It will remain the same
4. It will be reduced to one-fourth

**Solution** Correct Option - 1

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**Que. 12** When number of turns per unit length of a solenoid is doubled, its self inductance becomes:

1. 4 times
2. 8 times
3. Same
4. Doubled

**Solution** Correct Option - 1

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**Que. 13** Which of the following options is correct regarding transformer?

1. It can convert AC voltage into DC voltage and vice versa.
2. It can convert low voltage to high voltage and vice versa.
3. Both 1 and 2
4. Neither 1 nor 2

**Solution** Correct Option - 2

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**Que. 14** A ball is thrown vertically upwards with a velocity of 29.5 m/s. How high will the ball rise (in meters)? (use  $g = 10 \text{ m/s}^2$ )

1. 20.5 m
2. 31.5 m
3. 43.5 m
4. 56.5 m

**Solution** Correct Option - 3

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**Que. 15** A charge  $Q$  is placed at the centre of a cube. Find the flux of the electric field through the six surfaces of the cube.

1.  $Q/6\epsilon_0$
2.  $6Q/\epsilon_0$
3.  $Q/\epsilon_0$
4.  $5Q/6\epsilon_0$

**Solution** Correct Option - 3

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**Que. 16** The ratio of the drift velocity to the magnitude of electric field in a conductor is equal to the \_\_\_\_\_.

1. conductivity of the material
2. mobility of the electrons
3. resistivity of the material
4. permittivity of the material

**Solution** Correct Option - 2

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**Que. 17** When the length of the solenoid is doubled without any change in the number of turns and the area of the coil. Then its self-inductance will

1. Nine times
2. Half times
3. Doubled
4. Unchanged

**Solution** Correct Option - 2

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**Que. 18** Capacitive reactance is equal to \_\_\_\_\_.

1.  $2\pi\nu C$
2.  $\frac{1}{(2\pi\nu)C}$
3.  $\omega L$
4.  $\frac{C}{(2\pi\nu)}$

**Solution** Correct Option - 2

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**Que. 19** A man standing on a revolving platform spreading his hands outward. Then:

1. angular velocity increase
2. angular velocity decrease
3. angular momentum increase
4. angular momentum is zero

**olution** Correct Option - 2

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**Que. 20** The equation of a wave is given by  $y = 2 \sin (314t - 2x + \pi/2)$ m the wave length of the wave is:

1. 2.0 m
2. 1.57 m
3. 6.28 m
4. 3.14 m

**Solution** Correct Option - 4