OSSC
ATO

Previous Year Paper

30 Nov 2021

Question No.1 Marks: 1.00

Bookmark

Choose the word that is opposite in meaning to the given word.
Revive

(A) ○ **Extinguish (Correct Answer)** (Chosen option)

(B) ○ Rejuvenate

(C) ○ Divulge

(D) ○ Exposure

Case Study - 2 to 6 5.00

Read the following information carefully and answer the given questions.
Hydropower extracts the mechanical energy of water, transforming it into electrical energy to generate electricity. Water in the environment often has both gravitational potential energy and kinetic energy, which can generate electricity using a generator. Note that traditionally this does not refer to the energy obtained from flowing water in the form of tides. In the case of obtaining energy from the tides, the term tidal power is used.
Humans have been harnessing energy from water for millennia, although not explicitly for electricity generation. The ancient Greeks used water wheels to grind wheat over 2000 years ago. Hydropower continued to be exclusively converted directly into mechanical power up until the end of the 19th century when electrical dynamos were attached to the shaft to generate electricity. Dynamos were the first type of electrical generator.
Hydroelectricity is generated at a hydroelectric facility which for large-scale generation includes a hydroelectric dam. At these facilities a dam holds back a large volume of water, creating a reservoir. This reservoir holds water at a higher elevation than the water on the downstream side of the dam. Compared to the water in the river, the water in the reservoir has a greater amount of potential energy. When a gate is opened at the top of the dam, the water from the reservoir flows through channels called penstocks down to the turbines. When the water reaches the turbines the potential energy it contains is converted into kinetic energy. This flowing water is then used to turn the blades of the turbine. As the turbines spin, they move a generator and generate electricity.
Although many hydroelectric facilities utilize dams, there are some types of systems that do not use dams and have very little water storage (meaning there is no large reservoir of stored water). These types of systems are known as run-of-the-river systems, and have been gaining popularity as an alternative to large-scale reservoir dams.

Question No.2 Marks: 1.00

Bookmark

According to the passage, which of the following statements is correct?

(A) ○ **Run-of-the-river systems can be an alternative to large-scale reservoir dams. (Correct Answer)**

(B) ○ Humans have started harnessing energy from water after 19^{th} century. (Chosen option)

(C) ○ Water in the environment has only kinetic energy.
(D) ○ All hydroelectric facilities utilize dams for electricity generation.

Question No.3 Marks: 1.00
Bookmark

Dynamos were the first _____.
(A) ○ Portable generators
(B) ○ **Electric generators (Correct Answer)** (Chosen option)
(C) ○ Transformers
(D) ○ Photovoltaic cells

Question No.4 Marks: 1.00
Bookmark

When the water reaches the turbines the potential energy it contains is converted into _____.
(A) ○ Chemical energy
(B) ○ Gravitational energy
(C) ○ Heat energy
(D) ○ **Kinetic energy (Correct Answer)** (Chosen option)

Question No.5 Marks: 1.00
Bookmark

The given passage mainly talks about _____.
(A) ○ types of energy obtained from flowing water
(B) ○ difference between tidal power and hydropower
(C) ○ **process involved in generating hydroelectricity (Correct Answer)** (Chosen option)
(D) ○ hydroelectric dam and its usage

Question No.6 Marks: 1.00
Bookmark

Which of the following words means the same as the word 'generate' as used in the passage?
(A) ○ Collision
(B) ○ Impede
(C) ○ **Create (Correct Answer)** (Chosen option)
(D) ○ Gauge

Question No.7 Marks: 1.00
Bookmark

A sentence has been given with a blank to be filled with an appropriate word. Choose the correct alternative.
No one _____ deny that James was a devoted husband and father.
(A) ○ **could (Correct Answer)** (Chosen option)
(B) ○ must
(C) ○ might
(D) ○ will

Question No.8 Marks: 1.00

Bookmark

The gesture of 'Quick tilt head' during communication means _____.

(A) ○ Insecurity (Chosen option)

(B) ○ **Interest (Correct Answer)**

(C) ○ Defensiveness

(D) ○ Boredom

Question No.9 Marks: 1.00

Bookmark

Find the part of the given sentence that has an error in it. If there is no error, choose 'No error'.
She final (1)/ sent her application (2)/ for the job. (3)/ No error

(A) ○ **1 (Correct Answer)** (Chosen option)

(B) ○ 4

(C) ○ 2

(D) ○ 3

Question No.10 Marks: 1.00

Bookmark

Choose the word that can substitute the given sentence.
A person employed to drive a private automobile

(A) ○ Arsonist

(B) ○ Bohemian (Chosen option)

(C) ○ **Chauffeur (Correct Answer)**

(D) ○ Crusade

Computer Application - Computer Application

Question No.1 Marks: 1.00

Bookmark

Which files contains all relevant data for an application?

(A) ○ Output file

(B) ○ Redundancy file

(C) ○ **Master file (Correct Answer)** (Chosen option)

(D) ○ Transaction file

Question No.2 Marks: 1.00

Bookmark

Which of the following is the example of application software?

(A) ○ Operating system

(B) ○ **MS–Word (Correct Answer)** (Chosen option)

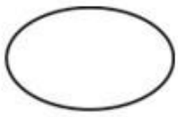
(C) ○ Utility software

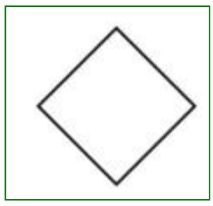
(D) ○ Compiler

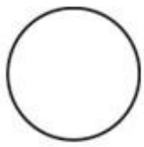
Question No.3 Marks: 1.00

Bookmark

Which symbol in flowchart is used for decision/condition?

(A) ○ 

(B) ○  **(Correct Answer)** (Chosen option)

(C) ○ 

(D) ○ 

Question No.4 Marks: 1.00

Bookmark

Rearrange the steps of software development life cycle. Design, Testing, Requirement analysis, Maintenance

(A) ○ Maintenance, Design, Requirement Analysis, Testing

(B) ○ Requirement analysis, Maintenance, Design, Testing

(C) ○ Maintenance, Testing, Requirement Analysis, Testing

(D) ○ **Requirement analysis, Design, Testing, Maintenance (Correct Answer)** (Chosen option)

Question No.5 Marks: 1.00

Bookmark

Which of the following is invalid variable name in C?

(A) ○ **1^{st} (Correct Answer)** (Chosen option)

(B) ○ Si3

(C) ○ Avg

(D) ○ cl_ass

Question No.6 Marks: 1.00

Bookmark

Which of the following is NOT an example of malicious software?

(A) ○ Virus

(B) ○ Worms

(C) ○ Torjan horse

(D) ○ **Firewalls (Correct Answer)** (Chosen option)

Question No.7 Marks: 1.00

Bookmark

What is the full form of HTTP?

(A) ○ HYPER TEXT TRANSMISSION PROTOCOL

(B) ○ **HYPER TEXT TRANSFER PROTOCOL (Correct Answer)** (Chosen option)

(C) ○ HIGH TEXT TRANSFER PROTOCOL

(D) ○ HIGH TEXT TRANSMISSION PROTOCOL

Question No.8

Marks: 1.00

Bookmark

In which line there is error in given code in C language.

```
void main(){
float x=5,y=2;
int c;
c=x%y;
printf("c=%d\n",c);
}
```

(A) ○ printf(“c=%d\n”,c);

(B) ○ int c;

(C) ○ **c=x%y; (Correct Answer)** (Chosen option)

(D) ○ float x=5,y=2;

Question No.9

Marks: 1.00

Bookmark

What is output of the given C language program?

```
void main()
{
int a=25,c;
float b=3.14;
c=a+b*b-35;
printf("%d",c);
}
```

(A) ○ **0 (Correct Answer)**

(B) ○ 1

(C) ○ −0.14

(D) ○ 0.14 (Chosen option)

Question No.10

Marks: 1.00

Bookmark

What is the full form of ALU?

(A) ○ Arithmetic linking unit

(B) ○ Arithmetical logical unit

(C) ○ Arithmetical logic unit

(D) ○ **Arithmetic logic unit (Correct Answer)** (Chosen option)

Question No.11

Marks: 1.00

Bookmark

Which data communication mode is shown in the given figure?

(A) ○ Full duplex transmission mode
(B) ○ Quarter duplex transmission mode
(C) ○ Half duplex transmission mode (Chosen option)
(D) ○ **Simplex transmission mode (Correct Answer)**

Question No.12 Marks: 1.00

Bookmark

The process of starting or restarting a computer is called _____.

(A) ○ Loading
(B) ○ Compiling
(C) ○ **Booting (Correct Answer)** (Chosen option)
(D) ○ Spooling

Question No.13 Marks: 1.00

Bookmark

Which component of a computer manages and controls all the components of computer system?

(A) ○ Output unit
(B) ○ **Control unit (Correct Answer)** (Chosen option)
(C) ○ Memory unit
(D) ○ Input unit

Question No.14 Marks: 1.00

Bookmark

_____ is the type of a software that is embedded in a hardware.

(A) ○ Middle ware
(B) ○ Adware
(C) ○ Malware
(D) ○ **Firmware (Correct Answer)** (Chosen option)

Question No.15 Marks: 1.00

Bookmark

What is output of the given C language code?

```
void main()
{
int i=3, *k, **j;
k=&i;
j=&k;
printf("%d",**j);
}
```

(A) ○ Address of j
(B) ○ Address of i (Chosen option)

(C) ○ Address of k

(D) ○ **3 (Correct Answer)**

Engineering Physics - Engineering Physics

Question No.1 Marks: 1.00

Bookmark

The maximum static friction that a body can exert on the other body in contact with it, is called _____.

(A) ○ Coefficient of friction

(B) ○ rolling friction

(C) ○ **limiting friction (Correct Answer)** (Chosen option)

(D) ○ kinetic friction

Question No.2 Marks: 1.00

Bookmark

The standard prefix for _____ power of 10 is tera.

(A) ○ **12^{th} (Correct Answer)** (Chosen option)

(B) ○ 9^{th}

(C) ○ 15^{th}

(D) ○ 18^{th}

Question No.3 Marks: 1.00

Bookmark

If f = 1.5 metre for a glass lens, then what is the power of that lens?

(A) ○ **0.667 dioptre (Correct Answer)** (Chosen option)

(B) ○ 0.35 dioptre

(C) ○ 0.45 dioptre

(D) ○ 0.55 dioptre

Question No.4 Marks: 1.00

Bookmark

What is the resistance of an aluminium wire of length 40 cm and cross sectional area 2 mm^2. The resistivity of aluminium is 2.6×10^{-8} Wm?

(A) ○ 0.065 W

(B) ○ 0.0065 W

(C) ○ 0.052 W

(D) ○ **0.0052 W (Correct Answer)** (Chosen option)

Question No.5 Marks: 1.00

Bookmark

An isolated sphere has a capacitance of 50 pF. What is its radius?

(A) ○ 40 cm

(B) ○ **45 cm (Correct Answer)** (Chosen option)

(C) ○ 50 cm

(D) ○ 30 cm

Question No.6 Marks: 1.00

Bookmark

When a particle is projected with a velocity u at an angle q with the horizontal, the total time taken by the particle in describing the path is called the _____.

(A) ○ **time of flight (Correct Answer)**

(B) ○ time of horizontal axis

(C) ○ time of projection (Chosen option)

(D) ○ time of maximum height

Question No.7 Marks: 1.00

Bookmark

In a beta decay process, a neutron converts itself into a _____ and a fresh _____ is created.

(A) ○ proton, neutron (Chosen option)

(B) ○ electron, neutron

(C) ○ electron, proton

(D) ○ **proton, electron (Correct Answer)**

Question No.8 Marks: 1.00

Bookmark

According to the law of tension of a string, the fundamental frequency of a string is proportional to the _____ of its tension provided its length and mass per unit length remain the same.

(A) ○ **square root (Correct Answer)** (Chosen option)

(B) ○ cube

(C) ○ square

(D) ○ cube root

Question No.9 Marks: 1.00

Bookmark

The average power transmitted through a given point on a string supporting a sine wave is 0.2 W when the amplitude of wave is 12 mm. What power will be transmitted through this point if the amplitude is decreased to 6 mm?

(A) ○ 0.04 W

(B) ○ 5 W

(C) ○ 2 W

(D) ○ **0.05 W (Correct Answer)** (Chosen option)

Question No.10 Marks: 1.00

Bookmark

What is the work done in bringing 3 particles, each having a mass of 400 gram from large distances to the vertices of an equilateral triangle of side 40 cm.

(A) ○ -5×10^{-11}J

(B) ○ -1×10^{-12}J

(C) ○ -5×10^{-12}J (Chosen option)

(D) ○ **-8×10^{-11}J (Correct Answer)**

Engineering Chemistry - Engineering Chemistry

Question No.1 Marks: 1.00

Bookmark

_____ is a class of highest rank coal.

(A) Bituminous coals

(B) **Anthracite coals (Correct Answer)** (Chosen option)

(C) Lignite coals

(D) Peat coals

Question No.2 Marks: 1.00

Bookmark

What is the other name of cup-greases?

(A) **Calcium-based greases (Correct Answer)**

(B) Soda-base greases

(C) Axle greases (Chosen option)

(D) Lithium-based greases

Question No.3 Marks: 1.00

Bookmark

Which rubber is used as “Solid propellant fuel” for rocket motors?

(A) Sponge rubber (Chosen option)

(B) Hard rubber

(C) **Polysulfide rubber (Correct Answer)**

(D) Foam rubber

Question No.4 Marks: 1.00

Bookmark

The most impure form of natural water is _____.

(A) **sea water (Correct Answer)** (Chosen option)

(B) underground water

(C) lake water

(D) river water

Question No.5 Marks: 1.00

Bookmark

The number of gram equivalents of the solute dissolved per litre of the solution is called _____.

(A) Molarity

(B) Molality

(C) **Normality (Correct Answer)** (Chosen option)

(D) Solubility

Question No.6 Marks: 1.00

Bookmark

Who said that atoms and molecules could emit or absorb energy only in discrete quantities, like small package or bundles?

(A) ○ Einstein
(B) ○ **Planck (Correct Answer)** (Chosen option)
(C) ○ Rutherford
(D) ○ Heisenberg

Question No.7 Marks: 1.00
Bookmark

What is the chemical formula of a natural abrasive corundum?
(A) ○ **Al_2O_3 (Correct Answer)** (Chosen option)
(B) ○ Fe_3O_4
(C) ○ SiO_2
(D) ○ $Fe_3Al_2(SiO_4)_3$

Question No.8 Marks: 1.00
Bookmark

Bleaching powder when added to water (1 kg per 1000 kilolitres of H_2O) and water is allowed to stand undisturbed for several hours. This chemical action produces _____.
(A) ○ hydrochloric acid
(B) ○ formic acid
(C) ○ acetic acid
(D) ○ **hypochlorous acid (Correct Answer)** (Chosen option)

Question No.9 Marks: 1.00
Bookmark

If in a molecule, one of the atoms has a low ionization energy and the other atom has high electron affinity, the bond formed will be _____.
(A) ○ **ionic bond (Correct Answer)** (Chosen option)
(B) ○ dative bond
(C) ○ hydrogen bond
(D) ○ covalent bond

Question No.10 Marks: 1.00
Bookmark

_____ is the combined effect of static tensile stresses and corrosive environment on a metal.
(A) ○ Pitting corrosion
(B) ○ **Stress corrosion (Correct Answer)** (Chosen option)
(C) ○ Intergranular corrosion
(D) ○ Waterline corrosion

Engineering Mathematics I - Engineering Mathematics I

Question No.1 Marks: 1.00
Bookmark

What is the value of $2\sin x\cos^2 x + \sin x - 2\sin^3 x$?
(A) ○ **sin3x (Correct Answer)**

(B) ○ 3sin2x
(C) ○ 2sin3x (Chosen option)
(D) ○ sin2x

Question No.2 Marks: 1.00
Bookmark

What is the value of $20^{o}30'$ into radian measure?
(A) ○ 40π/360
(B) ○ **41π/360 (Correct Answer)**
(C) ○ 20π/180 (Chosen option)
(D) ○ 21π/360

Question No.3 Marks: 1.00
Bookmark

What is the slope (m) of line passing through the points (1, 2) and (3, 8)?
(A) ○ 1
(B) ○ −3 (Chosen option)
(C) ○ −2
(D) ○ **3 (Correct Answer)**

Question No.4 Marks: 1.00
Bookmark

What is the equation of a circle with centre (4, 4) and passes through the point (8, 10)?
(A) ○ $x^2 + y^2 - 8x - 8y = -20$
(B) ○ $x^2 + y^2 - 4x - 4y - 20 = 0$ (Chosen option)
(C) ○ **$x^2 + y^2 - 8x - 8y - 20 = 0$ (Correct Answer)**
(D) ○ $x^2 + y^2 - 8x + 8y - 20 = 0$

Question No.5 Marks: 1.00
Bookmark

What are the intercepts of the line 7x − 3y = 21?
(A) ○ −3 and 7
(B) ○ 6 and 14
(C) ○ **3 and −7 (Correct Answer)** (Chosen option)
(D) ○ −3 and −7

Question No.6 Marks: 1.00
Bookmark

What is the centre and radius of circle $x^2 + y^2 - 4x - 12y + 36 = 0$?
(A) ○ (2, 2) and 4 (Chosen option)
(B) ○ (2, 1) and 4
(C) ○ **(2, 6) and 2 (Correct Answer)**
(D) ○ (6, 2) and 2

Question No.7 Marks: 1.00

Bookmark

What is the value of tan 7π/6?

(A) ○ −1/√3

(B) ○ **1/√3 (Correct Answer)**

(C) ○ 2/√3

(D) ○ √3 (Chosen option)

Question No.8 Marks: 1.00

Bookmark

What is the equation of the lines for which tanq = 1/3, where q is the inclination of the line and x intercept is 6?

(A) ○ −x − 3y + 6 = 0

(B) ○ x + 3y + 6 = 0 (Chosen option)

(C) ○ **−x + 3y + 6 = 0 (Correct Answer)**

(D) ○ x − 3y + 6 = 0

Question No.9 Marks: 1.00

Bookmark

$$\Delta = \begin{vmatrix} 3 & 1 & 2 \\ 0 & 2 & 5 \\ 1 & 2 & 3 \end{vmatrix}$$

What is the value of determinant ?

(A) ○ 4

(B) ○ 16

(C) ○ **−11 (Correct Answer)** (Chosen option)

(D) ○ 8

Question No.10 Marks: 1.00

Bookmark

If $A = \begin{vmatrix} 2 & 2 & 3 \\ 1 & 5 & 1 \\ 3 & 7 & 3 \end{vmatrix}$ and $B = \begin{vmatrix} 0 & 1 & 2 \\ 1 & 3 & 6 \\ 2 & 5 & 4 \end{vmatrix}$, then what is the value of $|AB|$?

(A) ○ **−48 (Correct Answer)**

(B) ○ 24

(C) ○ −24

(D) ○ 48 (Chosen option)

Engineering Mathematics II - Engineering Mathematics II

Question No.1 Marks: 1.00

Bookmark

What is the differentiation of $x^2 + 2x$ with respect to e^{2x}?

(A) $e^{-2x}(2x + 2)$

(B) $e^{2x}(2x + 2)$ (Chosen option)

(C) $e^{2x}(x + 1)$

(D) **$e^{-2x}(x + 1)$ (Correct Answer)**

Question No.2 Marks: 1.00

Bookmark

Additive identity for the vector addition is _____.

(A) 1 (Chosen option)

(B) **0 (Correct Answer)**

(C) 2

(D) −1

Question No.3 Marks: 1.00

Bookmark

What is the degree of differential equation $\left(\frac{d^2x}{dy^2}\right)^2 + \frac{dx}{dy} + y = 0$?

(A) **2 (Correct Answer)**

(B) 1 (Chosen option)

(C) 0

(D) Not defined

Question No.4 Marks: 1.00

Bookmark

What is the second order derivatives of x^2 logx?

(A) **2logx + 3 (Correct Answer)**

(B) xlogx + 3

(C) 2logx + 2 (Chosen option)

(D) logx + 3

Question No.5 Marks: 1.00

Bookmark

What is the general solution of differential equation $\frac{dy}{dx} = x + 1$?

(A) **$y = (x^2/2) + x + C$ (Correct Answer)**

(B) $y = (x^2/2) + x$

(C) $y = (x^2/2) + (x/2) + C$ (Chosen option)

(D) $y = x^2 + x + C$

Question No.6 Marks: 1.00

Bookmark

What is the value of $\lim_{x \to 1} \frac{(x)^{25} - (1)^{25}}{x - 1}$?

(A) ○ 5
(B) ○ 50 (Chosen option)
(C) ○ **25 (Correct Answer)**
(D) ○ 10

Question No.7 Marks: 1.00

Bookmark

What is the value of integral $\int \left(x^{\frac{3}{5}} + 2 \right) dx$?

(A) ○ $(5x^{8/5})/8 + 2x$
(B) ○ $(8x^{8/5})/5 + 2x + C$ (Chosen option)
(C) ○ **$(5x^{8/5})/8 + 2x + C$ (Correct Answer)**
(D) ○ $(8x^{8/5})/5 + 2x$

Question No.8 Marks: 1.00

Bookmark

What is the value of integral $\int_{\frac{\pi}{4}}^{\frac{\pi}{3}} \frac{\cot x dx}{\sqrt{1 - \cos^2 x}}$?

(A) ○ $\sqrt{2}(\sqrt{2}/3 + 2)$
(B) ○ **$\sqrt{2}(1 - \sqrt{2}/3)$ (Correct Answer)** (Chosen option)
(C) ○ $\sqrt{2}(1 + \sqrt{2}/3)$
(D) ○ $\sqrt{2}(-1 - \sqrt{2}/3)$

Question No.9 Marks: 1.00

Bookmark

What is the value of $\lim_{x \to \frac{\pi}{4}} \sin x$?

(A) ○ **$1/\sqrt{2}$ (Correct Answer)**
(B) ○ 2 (Chosen option)
(C) ○ 0
(D) ○ 1

Question No.10 Marks: 1.00

Bookmark

If $|\bar{a}| = 2, |\bar{b}| = 3$ and angle between them is 30°, then what is the value of $|\bar{a} \times \bar{b}|$?

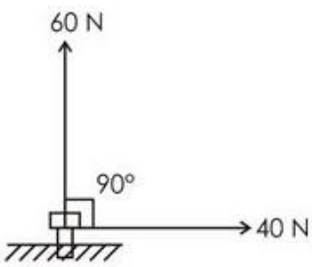
(A) ○ 6
(B) ○ 12
(C) ○ 2
(D) ○ **3 (Correct Answer)** (Chosen option)

Engineering Mechanics - Engineering Mechanics

Question No.1 Marks: 1.00

Bookmark

The two forces act on a bolt at point A at 90° as shown in figure.
What is the magnitude of their resultant?



(A) ○ **72.11 N (Correct Answer)** (Chosen option)
(B) ○ 135 N
(C) ○ 80.7 N
(D) ○ 130.58 N

Question No.2 Marks: 1.00

Bookmark

The centroid of semi-circular lamina of radius r is at a distance of _____ from the centre.

(A) ○ 2r/π
(B) ○ 3r/4π
(C) ○ **4r/3π (Correct Answer)** (Chosen option)
(D) ○ 4r/3

Question No.3 Marks: 1.00

Bookmark

_____ theorem states that the moment about a given point 'o' of the resultant of several concurrent forces is equal to the sum of the moments of the various forces about the same point 'o'.

(A) ○ **Varignon's theorem (Correct Answer)** (Chosen option)
(B) ○ Bernoulli's theorem
(C) ○ Buckingham p theorem
(D) ○ Lami's theorem

Question No.4 Marks: 1.00

Bookmark

Moment of inertia of areas are also called _____.

(A) ○ 1st moment of area

(B) ○ 4th moment of area

(C) ○ 3rd moment of area

(D) ○ **2nd moment of area (Correct Answer)** (Chosen option)

Question No.5 Marks: 1.00

Bookmark

If $\vec{F}$ force is applied at a point A, the position of A is defined as a vector $\vec{r}$ which join the fixed reference point O with A then moment of force $\vec{F}$ about 0 is _____.

(A) ○ $\vec{r} \times \vec{F}$ **(Correct Answer)**

(B) ○ $\vec{F} + \vec{r}$

(C) ○ $\vec{F} - \vec{r}$

(D) ○ $\vec{r}.\vec{F}$ (Chosen option)

Question No.6 Marks: 1.00

Bookmark

Which of the following is a vector quantity?

(A) ○ Energy

(B) ○ Mass

(C) ○ Volume

(D) ○ **Acceleration (Correct Answer)** (Chosen option)

Question No.7 Marks: 1.00

Bookmark

Mass moment of inertia of a thin circular disc about an axis passing through its centre and perpendicular to its plane is _____.

(A) ○ **$mr^2/2$ (Correct Answer)**

(B) ○ $mr^2/6$

(C) ○ $mr^2/8$

(D) ○ $mr^2/5$ (Chosen option)

Question No.8 Marks: 1.00

Bookmark

The area under the acceleration time curve gives _____.

(A) ○ Change in displacement
(B) ○ Change in momentum
(C) ○ Change in acceleration (Chosen option)
(D) ○ **Change in velocity (Correct Answer)**

Question No.9 Marks: 1.00

Bookmark

If V is the potential energy and is dependent on single independent variable q which denotes position, then the condition for stable equilibrium is _____.

(A) ○ **$dV/dq= 0$ and $d^2V/dq^2 > 0$ (Correct Answer)**
(B) ○ $dV/dq = 0$ and $d^2V/dq^2 < 0$
(C) ○ $dV/dq > 0$ and $d^2V/dq^2 = 0$
(D) ○ $dV/dq = 0$ and $d^2V/dq^2 = 0$ (Chosen option)

Question No.10 Marks: 1.00

Bookmark

Impact in which the mass centres of the colliding bodies are not located on the line of impact is called _____.

(A) ○ head-on impact
(B) ○ deep impact (Chosen option)
(C) ○ **eccentric impact (Correct Answer)**
(D) ○ random impact

Question No.11 Marks: 1.00

Bookmark

A machine in which input and output work are equal is said to be a/an _____.

(A) ○ transfer machine
(B) ○ **ideal machine (Correct Answer)** (Chosen option)
(C) ○ dynamic machine
(D) ○ real machine

Question No.12 Marks: 1.00

Bookmark

For perfectly elastic impact, coefficient of restitution is _____.

(A) ○ **1 (Correct Answer)** (Chosen option)
(B) ○ 0.1
(C) ○ 0.5
(D) ○ 0

Basic Electrical Engeneering - Basic Electrical Engeneering

Question No.1 Marks: 1.00

Bookmark

_____ has low melting point. It is included at many stages of the installation to protect the various circuits and complete wiring system against over currents and any type of faults.

(A) ○ **Fuse (Correct Answer)** (Chosen option)

(B) ○ Plug
(C) ○ Socket outlet
(D) ○ Switch

Question No.2 Marks: 1.00

Bookmark

_____ converts solar energy into electrical energy through a chemical action taking place in solar cells.

(A) ○ Electrolytic cell
(B) ○ Galvanic cell
(C) ○ Fuel cell
(D) ○ **Photo voltaic cell (Correct Answer)** (Chosen option)

Question No.3 Marks: 1.00

Bookmark

A capacitive reactance of 4 W is connected in series with a resistance of 3 W. The series circuit is connected across a 200 V, 50 Hz supply. What is the value of impedance?

(A) ○ 0.75 W
(B) ○ 7 W
(C) ○ **5 W (Correct Answer)** (Chosen option)
(D) ○ 1.33 W

Question No.4 Marks: 1.00

Bookmark

The speed of D.C motor is _____ proportional to the voltage applied to the armature or the back emf and it is _____ proportional to the flux per pole.

(A) ○ **directly, inversely (Correct Answer)**
(B) ○ directly, directly (Chosen option)
(C) ○ inversely, directly
(D) ○ inversely, inversely

Question No.5 Marks: 1.00

Bookmark

What is the velocity of charge leading to 1 A current which flows in a copper conductor of cross-section 1 cm^2 and length 10 km? (Free electron density of copper = 8.5×10^{28} per m^3)

(A) ○ 2.47 mm/s
(B) ○ 0.247 mm/s
(C) ○ **0.735 mm/s (Correct Answer)** (Chosen option)
(D) ○ 0.147 mm/s

Question No.6 Marks: 1.00

Bookmark

_____ is the power developed in the inductive reactance of the circuit?

(A) ○ Active power
(B) ○ Average power
(C) ○ Apparent power

(D) ○ **Reactive power (Correct Answer)** (Chosen option)

Question No.7 Marks: 1.00

Bookmark

A compound generator consists of _____.

(A) ○ three field windings

(B) ○ one field winding

(C) ○ **two field windings (Correct Answer)** (Chosen option)

(D) ○ four field windings

Question No.8 Marks: 1.00

Bookmark

Kirchhoff's laws are applicable _____.

(A) ○ To a.c voltage only

(B) ○ To d.c and a.c currents only

(C) ○ To a.c voltages and d.c currents only

(D) ○ **Both to d.c and a.c voltages and currents (Correct Answer)** (Chosen option)

Question No.9 Marks: 1.00

Bookmark

Which of the following is correct regarding resistance?

(A) ○ **It depends on the nature of the material (Correct Answer)** (Chosen option)

(B) ○ It does not depend on the temperature of the conductor

(C) ○ It varies directly as the cross-section area of the conductor

(D) ○ It varies inversely as its length

Question No.10 Marks: 1.00

Bookmark

_____ is due to the repulsive force between the two similarly magnetised iron rods or sheets.

(A) ○ Restoring torque

(B) ○ Controlling torque

(C) ○ Damping torque

(D) ○ **Deflecting torque (Correct Answer)** (Chosen option)

Question No.11 Marks: 1.00

Bookmark

_____ is defined as the flux emitted per unit solid angle from a uniform source of one candle power.

(A) ○ Luminous efficiency

(B) ○ Luminous flux

(C) ○ Luminous intensity (Chosen option)

(D) ○ **Lumen (Correct Answer)**

Question No.12 Marks: 1.00

Bookmark

A 220 V, 50 Hz series R-C circuit takes an R.M.S current of 10 A. The maximum value of the current occurs 1/900 second before the maximum value of the voltage. What is the value of average power?

(A) ○ 4128 W

(B) ○ **2067 W (Correct Answer)** (Chosen option)

(C) ○ 1250 W

(D) ○ 3998 W

Basic Electronics Engeneering - Basic Electronics Engeneering

Question No.1 Marks: 1.00

Bookmark

_____ diode acts as a variable capacitor under changing reverse bias.

(A) ○ Zener

(B) ○ **Varactor (Correct Answer)** (Chosen option)

(C) ○ Tunnel

(D) ○ Shockley

Question No.2 Marks: 1.00

Bookmark

Which of the following is a semi conduction material?

(A) ○ Copper

(B) ○ Glass

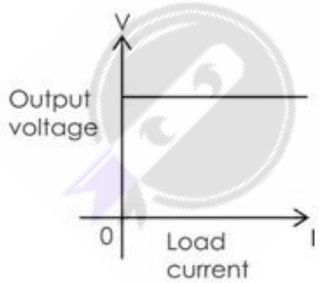
(C) ○ **Germanium (Correct Answer)** (Chosen option)

(D) ○ Nichrome

Question No.3 Marks: 1.00

Bookmark

Which source is represented by given diagram?



(A) ○ Constant current source

(B) ○ **Constant voltage source (Correct Answer)** (Chosen option)

(C) ○ Alternating voltage source

(D) ○ Alternating current source

Question No.4 Marks: 1.00

Bookmark

In a transistor _____.

(A) ○ IE = IB × IC (Chosen option)

(B) ○ **IE = IC + IB (Correct Answer)**
(C) ○ IC = IE + IB
(D) ○ IB = IE + IC

Question No.5 Marks: 1.00
Bookmark

Which of the following is known as π filter?
(A) ○ Choke input filter
(B) ○ Resistance input filter
(C) ○ Capacitor filer
(D) ○ **Capacitor input filter (Correct Answer)** (Chosen option)

Question No.6 Marks: 1.00
Bookmark

Which of the following is correct regarding Zener Diode?
(A) ○ **It has a sharp breakdown voltage. (Correct Answer)**
(B) ○ It is never connected in reverse.
(C) ○ It is not properly doped.
(D) ○ When reverse biased, its characteristics are of ordinary diode. (Chosen option)

Question No.7 Marks: 1.00
Bookmark

500 watts of input power is applied to a half-wave rectifier. Obtained power output is 100 watts. What is the rectification efficiency?
(A) ○ **20 percent (Correct Answer)** (Chosen option)
(B) ○ 25 percent
(C) ○ 50 percent
(D) ○ 40 percent

Question No.8 Marks: 1.00
Bookmark

_____ voltage, is the forward voltage at which the current through a junction starts to increase rapidly.
(A) ○ Shoulder
(B) ○ Minimum
(C) ○ Turn on
(D) ○ **Knee (Correct Answer)** (Chosen option)

Question No.9 Marks: 1.00
Bookmark

On the basis of energy band, a semiconductor has _____.
(A) ○ almost full conduction band
(B) ○ almost empty valence band
(C) ○ large energy gap between valence and conduction band
(D) ○ **almost full valence band (Correct Answer)** (Chosen option)

Question No.10 Marks: 1.00

Bookmark

A direct current source generate 600 V and has an internal resistance of 1000 W. What is the load current if the load resistance is 200 W?

(A) ○ 0.3 A

(B) ○ 0.2 A

(C) ○ **0.5 A (Correct Answer)** (Chosen option)

(D) ○ 0.4 A

Question No.11 Marks: 1.00

Bookmark

The process of conversion of a.c into d.c is known as _____.

(A) ○ **rectification (Correct Answer)** (Chosen option)

(B) ○ amplification

(C) ○ modulation

(D) ○ transmission

Save & Print