National Testing Agency

Question Paper Name :	PGQP28 15th Sep 2021 Shift 1
Subject Name :	PGQP28
Creation Date :	2021-09-15 17:32:43
Duration :	120
Total Marks :	400
Display Marks:	Yes

PGQP28

Group Number :	1
Group Id :	19088917
Group Maximum Duration :	0
Group Minimum Duration :	120
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	400
Is this Group for Examiner? :	No

PART A - General

Section Id :	19088954
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory

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Number of Questions :	25
Number of Questions to be attempted :	25
Section Marks :	100
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Sub-Section Number :	1
Sub-Section Id :	19088980
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 1908892092 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Select the correct word that can best complete the given sentence:

A well-balanced diet can be a/an ———— for stress.

(1) spirit (2) buffer

(3) antidote (4) medicine

Options :

1908898301. 1

1908898302. 2

1908898303. 3

1908898304. 4

Question Number : 2 Question Id : 1908892093 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

From the choices given below, select the pair which exhibits the same relationship as the one in capitalized pair of words:

HERBS : MEDICINE

(1) books : knowledge (2) sound : radio

(3) time : watch (4) juice : orange

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Options :

1908898305. 1

1908898306. 2

1908898307. 3

1908898308. 4

Question Number : 3 Question Id : 1908892094 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Select the most suitable synonym:

ADEPT

(1) devious (2) wily

(3) clumsy (4) dexterous

Options :

1908898309. 1

1908898310. 2

1908898311. 3

1908898312. 4

Question Number : 4 Question Id : 1908892095 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Identify the part of the body with which the disease is associated:

Hepatitis

(1) gall bladder (2) diaphragm

(3) stomach (4) liver

Options :

1908898313. 1

1908898314. 2

1908898315. 3

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1908898316. 4

Question Number : 5 Question Id : 1908892096 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Identify the meaning of the expression below from the options given:

ex officio

(1) unofficial
(2) as a result of one's status
(3) a retired official
(4) make public

Options :

1908898317. 1

1908898318. 2

1908898319. 3

1908898320. 4

Question Number : 6 Question Id : 1908892097 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Identify the meaning of the underlined word:

Confidence in government hospitals has <u>eroded</u> considerably in the past decade.

(1) gradually destroyed
(2) been reimposed
(3) corroded
(4) withered

Options :

1908898321. 1

1908898322. 2

1908898323. 3

1908898324. 4

Question Number : 7 Question Id : 1908892098 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

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Correct Marks : 4 Wrong Marks : 1

Identify the meaning of the phrase below from the options given:

A person who helps others specially those who are poor or in trouble

(1) philhellene
(2) philadelphus
(3) philanderer
(4) philanthropist

Options :

1908898325. 1

1908898326. 2

1908898327. 3

1908898328. 4

Question Number : 8 Question Id : 1908892099 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Select the most suitable antonym:

ERRATIC

(1) loose
(2) faulty
(3) regular
(4) brave

Options :

1908898329. 1

1908898330. 2

1908898331. 3

1908898332. 4

Question Number : 9 Question Id : 1908892100 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

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Identify the meaning of the idiom from the options given:

A bird's-eye view

(1) without care

(2) within the walls

(3) an overall view

(4) out of place

Options :

1908898333. 1

1908898334. 2

1908898335. 3

1908898336. 4

Question Number : 10 Question Id : 1908892101 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Select the correct word from the answer:

Farmers know that changing winds _____ rain or drought.

(1) bring

(2) create

(3) form

(4) present

Options :

1908898337. 1

1908898338. 2

1908898339. 3

1908898340. 4

Question Number : 11 Question Id : 1908892102 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

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The H.C.F. (Highest Common Factor) of 3556 and 3444 is :

(1) 23 (2) 25

(3) 26 (4) 28

Options :

1908898341. 1

1908898342. 2

1908898343. 3

1908898344. 4

Question Number : 12 Question Id : 1908892103 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

If $a + b = 5$ and $3a + 2b = 20$, then $(3a + b)$ will be :

(1) 10 (2) 15

(3) 20 (4) 25

Options :

1908898345. 1

1908898346. 2

1908898347. 3

1908898348. 4

Question Number : 13 Question Id : 1908892104 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

If the sum of a number and its square is 182, what is the number?

(1) 15 (2) 26

(3) 28 (4) None of these

Options :

1908898349. 1

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1908898350. 2

1908898351. 3

1908898352. 4

Question Number : 14 Question Id : 1908892105 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

88% of 370 + 24% of 210 – ? = 118

(1) 256 (2) 258

(3) 268 (4) 358

Options :

1908898353. 1

1908898354. 2

1908898355. 3

1908898356. 4

Question Number : 15 Question Id : 1908892106 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Choose the correct alternative based on relationship:

Tractor : Trailer : : Horse : ?

(1) Stable (2) Cart

(3) Saddle (4) Engine

Options :

1908898357. 1

1908898358. 2

1908898359. 3

1908898360. 4

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Question Number : 16 Question Id : 1908892107 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Choose the word which is least like the other words in the group:

(1) Geometry
(2) Algebra
(3) Trigonometry
(4) Mathematics

Options :

1908898361. 1

1908898362. 2

1908898363. 3

1908898364. 4

Question Number : 17 Question Id : 1908892108 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Choose the number which is different from others in the group.

(1) 8314
(2) 2709
(3) 1315
(4) 2518

Options :

1908898365. 1

1908898366. 2

1908898367. 3

1908898368. 4

Question Number : 18 Question Id : 1908892109 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

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If PALE is coded as 2134, EARTH is coded as 41590, how is PEARL coded in that code?

(1) 29530 (2) 24153

(3) 25413 (4) 25430

Options :

1908898369. 1

1908898370. 2

1908898371. 3

1908898372. 4

Question Number : 19 Question Id : 1908892110 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Rahul told Anand, 'Yesterday I defeated the only brother of the daughter of my grandmother.' Whom did Rahul defeat?

(1) Son (2) Father

(3) Brother (4) Father-in-law

Options :

1908898373. 1

1908898374. 2

1908898375. 3

1908898376. 4

Question Number : 20 Question Id : 1908892111 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Arrange the given words in alphabetical order and choose the one that comes first.

(1) Science (2) Scrutiny

(3) Scripture (4) Scramble

Options :

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1908898377. 1

1908898378. 2

1908898379. 3

1908898380. 4

Question Number : 21 Question Id : 1908892112 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

If Atul finds that he is twelfth from the right in a line of boys and fourth from the left, how many boys should be added to the line such that there are 28 boys in the line?

(1) 12 (2) 13

(3) 14 (4) 20

Options :

1908898381. 1

1908898382. 2

1908898383. 3

1908898384. 4

Question Number : 22 Question Id : 1908892113 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The India Energy Outlook 2021 is a new special report from the

(1) NITI Aayog

(2) Ministry of Power

(3) International Energy Agency

(4) Ministry of New and Renewable Energy

Options :

1908898385. 1

1908898386. 2

1908898387. 3

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1908898388. 4

Question Number : 23 Question Id : 1908892114 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Who among the following wrote the famous book titled 'We the people'?

(1) T. N. Seshan
(2) KiranBedi
(3) Nanabhoy Palkhivala
(4) Khushwant Singh

Options :

1908898389. 1

1908898390. 2

1908898391. 3

1908898392. 4

Question Number : 24 Question Id : 1908892115 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of following committees is related to 'Personal Data Protection'?

(1) B. N. Srikrishna Committee
(2) C. Rangarajan Committee
(3) Bimal Jalan Committee
(4) Bhurelal Committee

Options :

1908898393. 1

1908898394. 2

1908898395. 3

1908898396. 4

Question Number : 25 Question Id : 1908892116 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

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Galathea National Park is located in

(1) Andaman and Nicobar

(2) Lakshadweep

(3) Coromandel Coast

(4) Konkan Coast

Options :

1908898397. 1

1908898398. 2

1908898399. 3

1908898400. 4

PART B - PHYSICS

Section Id :	19088955
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	75
Number of Questions to be attempted :	75
Section Marks :	300
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Sub-Section Number :	1
Sub-Section Id :	19088981
Question Shuffling Allowed :	Yes

Question Number : 26 Question Id : 1908892117 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

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A scalar potential field is given by: $V = -6x + 8y - 12xy^2 + 7yz^2 - 5y^2$ *joule/coulomb*

The force on a 4 coulomb charge, placed at origin (0,0,0) will be

(1) 20 Newton (2) 40 Newton

(3) 60 Newton (4) 10 Newton

Options :

1908898401. 1

1908898402. 2

1908898403. 3

1908898404. 4

Question Number : 27 Question Id : 1908892118 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A ball is tied to a chord and set in rotation in a vertical circle. The tension in the chord at the lowest point exceeds that at the highest point by:

(1) Two time the weight of the body (2) Three times the weight of the body

(3) Four times the weight of the body (4) Six times the weight of the body

Options :

1908898405. 1

1908898406. 2

1908898407. 3

1908898408. 4

Question Number : 28 Question Id : 1908892119 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

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A particle of mass m_1 moving with velocity $\vec{u_1}$ collides elastically with another particle of mass m_2 at rest. After collision, the two particles move with equal speeds in opposite directions. The two masses are related as:

(1) $m_2 = m_1$ (2) $m_2 = 2m_1$

(3) $m_2 = 3m_1$ (4) $m_2 = 4m_1$

Options :

1908898409. 1

1908898410. 2

1908898411. 3

1908898412. 4

Question Number : 29 Question Id : 1908892120 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A string under tension carries transverse waves travelling at speed v. If the tension in the string is halved and the linear density of the string is doubled, the wave speed

(1) is unchanged (2) is halved

(3) is quadrupled (4) decreases to about 71% of v.

Options :

1908898413. 1

1908898414. 2

1908898415. 3

1908898416. 4

Question Number : 30 Question Id : 1908892121 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

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The relaxation time of a damped harmonic oscillator is 50 seconds. The time in which the energy of the oscillator falls to 1/*e* times its initial value will be

(1) 50 seconds
(2) 100 seconds
(3) Infinite
(4) 0.001 seconds

Options :

1908898417. 1

1908898418. 2

1908898419. 3

1908898420. 4

Question Number : 31 Question Id : 1908892122 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

When two mutually perpendicular simple harmonic motions of same frequency, amplitude and phase are superimposed:

(1) The resulting motion is uniform circular motion
(2) The resulting motion is a linear SHM along a straight line inclined equally to the straight lines of the motion of the components ones
(3) Resulting motion is an elliptical motion, symmetrical about the lines of motion of the components
(4) The two SHMs will cancel each other

Options :

1908898421. 1

1908898422. 2

1908898423. 3

1908898424. 4

Question Number : 32 Question Id : 1908892123 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

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A particle of mass 100 gm is placed in a field of potential $U=5x^2+10\frac{ergs}{gm}$. The frequency of oscillation of the particle will be

(1) 0.01 Hz
(2) 0.5 Hz
(3) 0.1 Hz
(4) 0.05 Hz

Options :

1908898425. 1

1908898426. 2

1908898427. 3

1908898428. 4

Question Number : 33 Question Id : 1908892124 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The Doppler width for an orange line of krypton is 550×10^{-13} m. If the wavelength of light is 605.8 nm, the coherent length will be:

(1) 0.6673 m
(2) 0.8873 m
(3) 0
(4) 605.8 nm

Options :

1908898429. 1

1908898430. 2

1908898431. 3

1908898432. 4

Question Number : 34 Question Id : 1908892125 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

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The ratio of intensities of the two waves that produce interference pattern is 16:1. The ratio of maximum to minimum intensities in fringe system will be:

(1) 16:1 (2) 4:1

(3) 5:3 (4) 25:9

Options :

1908898433. 1

1908898434. 2

1908898435. 3

1908898436. 4

Question Number : 35 Question Id : 1908892126 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The thickness of the soap film (refractive index 1.463) that will result in constructive interference in the reflected light, with the film is illuminated normally with a light of free space wavelength 600 nm:

(1) $0.1025\ \mu m$ (2) $0.2050\ \mu m$

(3) $0.0505\ \mu m$ (4) $0.4100\ \mu m$

Options :

1908898437. 1

1908898438. 2

1908898439. 3

1908898440. 4

Question Number : 36 Question Id : 1908892127 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In which of the following is the interference produced by the division of amplitude?

(1) Lloyd's mirror (2) Newton's rings

(3) Young's double slit experiment (4) Fresnel's biprism

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Options :

1908898441. 1

1908898442. 2

1908898443. 3

1908898444. 4

Question Number : 37 Question Id : 1908892128 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In Newton's rings arrangement, bright and dark rings are obtained using sodium yellow light. What happens if the top surface of the glass plate on which the lens is kept is highly silvered:

(1) Fringes disappear
(2) Fringe width remain unchanged
(3) Fringe width decreases
(4) Fringe width increases

Options :

1908898445. 1

1908898446. 2

1908898447. 3

1908898448. 4

Question Number : 38 Question Id : 1908892129 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A single slit is illuminated by a light composed of two wavelengths, λ_1 and λ_2. Due to Fraunhoffer diffraction, one observes that the first minimum obtained for λ_1 coincides with the second minimum of λ_2. The relationship between λ_1 and λ_2 is

(1) $\lambda_1 = \lambda_2$
(2) $\lambda_1 = 2\lambda_2$
(3) $2\lambda_1 = \lambda_2$
(4) $\lambda_1 = 3\lambda_2$

Options :

1908898449. 1

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1908898450. 2

1908898451. 3

1908898452. 4

Question Number : 39 Question Id : 1908892130 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The orders observed by a grating having 4000 lines per cm when illuminated normally by visible light of wavelength range 400 nm to 700 nm:

(1) 2 to 4 (2) 1 to 2

(3) 1 to 3 (4) 3 to 6

Options :

1908898453. 1

1908898454. 2

1908898455. 3

1908898456. 4

Question Number : 40 Question Id : 1908892131 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Significant diffraction of X-rays can be obtained

(1) by a single slit (2) by a double slit

(3) by an atomic crystal (4) plane transmission grating

Options :

1908898457. 1

1908898458. 2

1908898459. 3

1908898460. 4

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Question Number : 41 Question Id : 1908892132 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A ray of light is incident on a glass plate of refractive index 1.732 at polarizing angle. The angle of refraction will be:

(1) 60° (2) 30°

(3) 90° (4) 0°

Options :

1908898461. 1

1908898462. 2

1908898463. 3

1908898464. 4

Question Number : 42 Question Id : 1908892133 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Quartz has refractive indices 1.553 and 1.544. The thickness of the quarter wave plate for sodium light of wavelength 589 nm will be

(1) $0.163\ \mu m$ (2) $0.326\ \mu m$

(3) $0.0815\ \mu m$ (4) $0.652\ \mu m$

Options :

1908898465. 1

1908898466. 2

1908898467. 3

1908898468. 4

Question Number : 43 Question Id : 1908892134 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

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A satellite moves around the earth in a circular orbit of radius R centered at the earth. A second satellite moves in an elliptic orbit of major axis 8 R, with the earth at one of the foci. If the former takes 1 day to complete a revolution, the latter would take

(1) 21.6 days
(2) 8 days
(3) 3 hours
(4) 1.1 hour

Options :

1908898469. 1

1908898470. 2

1908898471. 3

1908898472. 4

Question Number : 44 Question Id : 1908892135 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The unit of pressure of one bar is

(1) 1 Pascal
(2) 1 kilo Pascal
(3) 100 kPascal
(4) 1000 kPascal

Options :

1908898473. 1

1908898474. 2

1908898475. 3

1908898476. 4

Question Number : 45 Question Id : 1908892136 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Stress strain relationship for Newtonian fluid is

(1) Parabolic
(2) Hyperbolic
(3) Linear
(4) Inverse type

Options :

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1908898477. 1

1908898478. 2

1908898479. 3

1908898480. 4

Question Number : 46 Question Id : 1908892137 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The function

$$f(x)=\begin{cases}-\pi & for\ -\pi<x\le 0\\ \pi & for\ 0<x\le\pi\end{cases}$$

Be a periodic function of period 2π. The coefficient of $\sin 5x$ in the Fourier series expansion of $f(x)$ in the interval $[-\pi, \pi]$ is

(1) 4/5 (2) 5/4

(3) 4/3 (4) 3/4

Options :

1908898481. 1

1908898482. 2

1908898483. 3

1908898484. 4

Question Number : 47 Question Id : 1908892138 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The Fourier series of an odd periodic function will consist of

(1) Sine terms only (2) Cosine terms only

(3) Constant terms only (4) All the three terms

Options :

1908898485. 1

1908898486. 2

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1908898487. 3

1908898488. 4

Question Number : 48 Question Id : 1908892139 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Let $\vec{a}$ and $\vec{b}$ be two distinct three dimensional vectors. The component of $\vec{b}$ that is perpendicular to $\vec{a}$ is given by

(1) $\frac{\vec{a}\times(\vec{b}\times\vec{a})}{a^2}$

(2) $\frac{\vec{b}\times(\vec{a}\times\vec{b})}{b^2}$

(3) $\frac{\vec{a}(\vec{b}.\vec{a})}{a^2}$

(4) $\frac{\vec{b}(\vec{b}.\vec{a})}{b^2}$

Options :

1908898489. 1

1908898490. 2

1908898491. 3

1908898492. 4

Question Number : 49 Question Id : 1908892140 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which one the following is Dirichlet condition

(1) Function must have a finite number of maxima and minima in expansion interval

(2) Function can have an infinite number of finite discontinuities in expansion interval

(3) $(f(t))^2$ must be absolutely summable

(4) $\int_{t_1}^{\infty} f(t)\,dt < \infty$

Options :

1908898493. 1

1908898494. 2

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1908898495. 3

1908898496. 4

Question Number : 50 Question Id : 1908892141 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following functions can be used as an integrating factor to turn the following non-exact equation into an exact equation?

$$(3y\cos x - xy\sin x) + 2x\cos x\frac{dy}{dx} = 0?$$

(1) x^2 (2) x^2y

(3) y^2 (4) xy^2

Options :

1908898497. 1

1908898498. 2

1908898499. 3

1908898500. 4

Question Number : 51 Question Id : 1908892142 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The value of integral $\int_0^\infty \frac{x^{a-1}}{1+x}dx$, where $0<a<1$; will be

(1) $\frac{\pi}{\sin \pi a}$ (2) $\frac{2\pi}{\sin \pi a}$

(3) $\frac{\pi}{\sin 2\pi a}$ (4) $\frac{\pi}{2\sin \pi a}$

Options :

1908898501. 1

1908898502. 2

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1908898503. 3

1908898504. 4

Question Number : 52 Question Id : 1908892143 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The value of m, so that $2x-x^2+my^2$ may be harmonic is:

(1) 0 (2) 2

(3) 3 (4) 1

Options :

1908898505. 1

1908898506. 2

1908898507. 3

1908898508. 4

Question Number : 53 Question Id : 1908892144 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The solution of $\frac{\partial u}{\partial t}=4\frac{\partial u}{\partial x}$ is

(1) Ae^{kx+t} (2) $Ae^{k(x+t)}$

(3) Ae^{x+t} (4) $Ae^{k\left(\frac{x}{4}+t\right)}$

Options :

1908898509. 1

1908898510. 2

1908898511. 3

1908898512. 4

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Question Number : 54 Question Id : 1908892145 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following matrices is skew Hermitian:

(1) $\begin{bmatrix} 0 & i \\ i & 0 \end{bmatrix}$

(2) $\begin{bmatrix} 0 & i \\ -i & 0 \end{bmatrix}$

(3) $\begin{bmatrix} i & 0 \\ 0 & i \end{bmatrix}$

(4) $\begin{bmatrix} i & 0 \\ 0 & -i \end{bmatrix}$

Options :

1908898513. 1

1908898514. 2

1908898515. 3

1908898516. 4

Question Number : 55 Question Id : 1908892146 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The solution of differential equation

$x \log x \frac{dy}{dx} + y = 2 \log x$ is:

(1) $y \log x = (\log x)^2 + C$

(2) $y = (\log x)^2 + C$

(3) $y = 2 \log x + C$

(4) $y = x(\log x)^2 + C$

Options :

1908898517. 1

1908898518. 2

1908898519. 3

1908898520. 4

Question Number : 56 Question Id : 1908892147 Question Type : MCQ Option Shuffling : No Is

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Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A charge q is placed at a distance 3R from the center of a grounded conducting sphere of radius R. The image charge and its distance are respectively:

(1) $\frac{-q}{3}$ and $\frac{R}{3}$

(2) $\frac{-q}{3}$ and $\frac{R}{6}$

(3) $-q$ and $\frac{R}{3}$

(4) $\frac{q}{3}$ and $\frac{R}{3}$

Options :

1908898521. 1

1908898522. 2

1908898523. 3

1908898524. 4

Question Number : 57 Question Id : 1908892148 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The Laplace's equation in CGS Gaussian system is:

(1) $\nabla^2 V = -\frac{\rho_0}{\varepsilon_0}$

(2) $\nabla^2 V = -4\pi\rho$

(3) $\nabla^2 V = -4\pi\sigma$

(4) $\nabla^2 V = 0$

Options :

1908898525. 1

1908898526. 2

1908898527. 3

1908898528. 4

Question Number : 58 Question Id : 1908892149 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

ZOLLEGE.in

The ratio of the intensity of magnetic field at the center of a very long solenoid to that at the extreme ends is:

(1) 2 (2) 1/2

(3) 4 (4) 1/4

Options :

1908898529. 1

1908898530. 2

1908898531. 3

1908898532. 4

Question Number : 59 Question Id : 1908892150 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The electric field associated with an electromagnetic wave propagating in free space is given as:

$$\vec{E}=E_0\cos(kz-\omega t)\hat{l}+E_0\cos(kz+\omega t)\hat{l}$$

The average energy carried by the wave is

(1) 0 (2) $\frac{E_0 B_0}{\mu_0}$

(3) $\frac{2E_0 B_0}{\mu_0}$ (4) $\frac{E_0 B_0}{2\mu_0}$

Options :

1908898533. 1

1908898534. 2

1908898535. 3

1908898536. 4

Question Number : 60 Question Id : 1908892151 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

ZOLLEGE.in

In an electromagnetic wave, the electric field of amplitude 6.2 V/m oscillates with a frequency of 2.4×10^{10} Hz. The Energy density of the wave is:

(1) $1.4 \times 10^{-10} J/m^3$

(2) $2.4 \times 10^{-10} J/m^3$

(3) $3.4 \times 10^{-10} J/m^3$

(4) $4.4 \times 10^{-10} J/m^3$

Options :

1908898537. 1

1908898538. 2

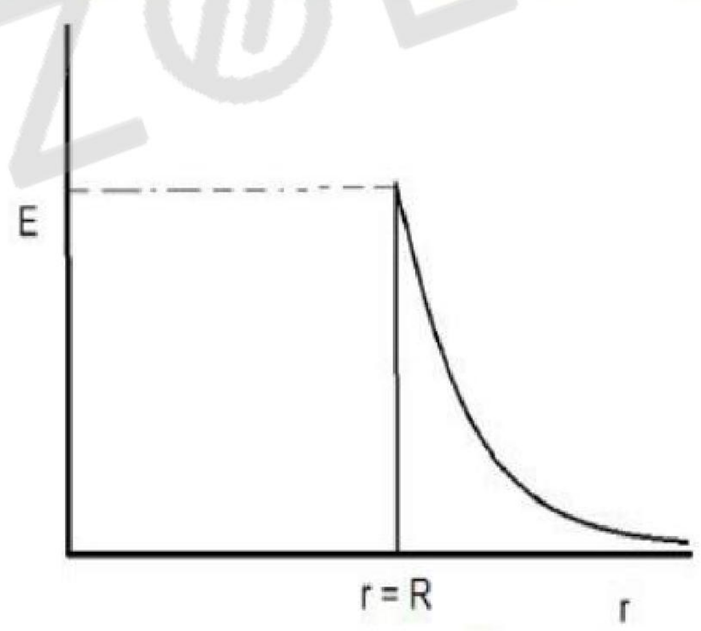
1908898539. 3

1908898540. 4

Question Number : 61 Question Id : 1908892152 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

This variation of electric field with distance is observed in which of the following objects:



(1) Line of charge

(2) Sheet of charge

(3) Solid Sphere

(4) Spherical Shell

Options :

1908898541. 1

1908898542. 2

1908898543. 3

1908898544. 4

Question Number : 62 Question Id : 1908892153 Question Type : MCQ Option Shuffling : No Is

ZOLLEGE.in

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The plane electromagnetic wave has the magnetic field

$\vec{B}(x,y,z)=B_0\sin\left[(x+y)\frac{k}{\sqrt{2}}+\omega t\right]\hat{k}$; where, k is wave number and $\hat{l},\hat{J}$ and $\hat{k}$ are the unit vectors along x, y and z directions respectively. The average pointing vector is:

(1) $-\frac{B_o^2C^2k}{2\mu_0\omega}\left(\frac{\hat{l}+\hat{J}}{2}\right)$ units

(2) $\frac{B_o^2C^2k}{2\mu_0\omega}\left(\frac{\hat{l}+\hat{J}}{2}\right)$ units

(3) $-\frac{B_o^2C^2k}{2\mu_0\omega}\left(\frac{\hat{l}+\hat{k}}{2}\right)$ units

(4) $\frac{B_o^2C^2k}{2\mu_0\omega}\left(\frac{\hat{l}+\hat{k}}{2}\right)$ units

Options :

1908898545. 1

1908898546. 2

1908898547. 3

1908898548. 4

Question Number : 63 Question Id : 1908892154 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The state of polarization of the electromagnetic wave with field components

$E_x=E_0\sin\left(kz-\omega t+\frac{\pi}{4}+90^\circ\right)$

$E_y=\frac{1}{\sqrt{2}}E_0\sin(kz-\omega t)$

is

(1) Linearly polarized

(2) Right circularly polarized

(3) Left circularly polarized

(4) Left elliptically polarized

Options :

1908898549. 1

1908898550. 2

1908898551. 3

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1908898552. 4

Question Number : 64 Question Id : 1908892155 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A monochromatic electromagnetic wave in vacuum is incident normally on a substance of refractive index 1.5, the ratio of magnitude of the electric vector which is reflected to that of incident wave is:

(1) 1/2 (2) 1/3

(3) 1/4 (4) 1/5

Options :

1908898553. 1

1908898554. 2

1908898555. 3

1908898556. 4

Question Number : 65 Question Id : 1908892156 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

For a given dielectric, the electronic polarizability α_e

(1) Increases with temperature

(2) Decreases with temperature

(3) Is not affected by the temperature change

(4) May increase or decrease with temperature

Options :

1908898557. 1

1908898558. 2

1908898559. 3

1908898560. 4

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Question Number : 66 Question Id : 1908892157 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

All natural processes are irreversible. This is a direct consequence of

(1) First law of thermodynamics
(2) Second law of thermodynamics
(3) Third law of thermodynamics
(4) Gibb's paradox

Options :

1908898561. 1

1908898562. 2

1908898563. 3

1908898564. 4

Question Number : 67 Question Id : 1908892158 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In a cyclic process

(1) Work done is zero
(2) Work done by the system is equal to the quantity of heat given to the system
(3) Work done does not depend on the quantity of heat given to the system
(4) The internal energy of the system increases

Options :

1908898565. 1

1908898566. 2

1908898567. 3

1908898568. 4

Question Number : 68 Question Id : 1908892159 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

ZOLLEGE.in

A Carnot engine operating between 27° C and 127° C has efficiency equal to

(1) 21%

(2) 22%

(3) 24%

(4) 25%

Options :

1908898569. 1

1908898570. 2

1908898571. 3

1908898572. 4

Question Number : 69 Question Id : 1908892160 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The area of Carnot cycle on T-S diagram represents

(1) Heat absorbed by the source

(2) Work done in a cycle

(3) Heat rejected to the sink

(4) Efficiency of the engine

Options :

1908898573. 1

1908898574. 2

1908898575. 3

1908898576. 4

Question Number : 70 Question Id : 1908892161 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Under equilibrium conditions, the thermodynamic variable associated with black body radiation at temperature T which reduces to zero is

(1) Entropy

(2) Helmholtz free energy

(3) Gibb's free energy

(4) Pressure

Options :

ZOLLEGE.in

1908898577. 1

1908898578. 2

1908898579. 3

1908898580. 4

Question Number : 71 Question Id : 1908892162 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which statistics will be applied to deuterons and α particles?

(1) Bose Einstein

(2) Fermi Dirac

(3) Maxwell Boltzmann

(4) None

Options :

1908898581. 1

1908898582. 2

1908898583. 3

1908898584. 4

Question Number : 72 Question Id : 1908892163 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The total number of accessible states of N non interacting particles of spin 1/2 is

(1) 2^N

(2) N^2

(3) $2^{\frac{N}{2}}$

(4) N

Options :

1908898585. 1

1908898586. 2

1908898587. 3

1908898588. 4

ZOLLEGE.in

Question Number : 73 Question Id : 1908892164 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Einstein's formula for heat capacity

(1) Fails at higher temperature

(2) Fails at lower temperature because it goes as T instead of T^3

(3) Fails at lower temperature because it decreases exponentially instead of T^3

(4) Falls at all temperature range

Options :

1908898589. 1

1908898590. 2

1908898591. 3

1908898592. 4

Question Number : 74 Question Id : 1908892165 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The ratio of two specific heats of a diatomic gas is

(1) 1.66 (2) 1.33

(3) 1.40 (4) 1.52

Options :

1908898593. 1

1908898594. 2

1908898595. 3

1908898596. 4

Question Number : 75 Question Id : 1908892166 Question Type : MCQ Option Shuffling : No Is

ZOLLEGE.in

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

An oil bath kept at 27° C is being supplied heat at the rate of 100 Js^{-1}. Assuming the process to be quasi-static, the rate of increase of entropy of the system is approximately

(1) 3.7 $JK^{-1}s^{-1}$

(2) 3.7 $JK^{-1}s^{-2}$

(3) 0.33 $JK^{-1}s^{-1}$

(4) 0.33 $JK^{-1}s^{-2}$

Options :

1908898597. 1

1908898598. 2

1908898599. 3

1908898600. 4

Question Number : 76 Question Id : 1908892167 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Ten milligrams of a radioactive substance of life period 2 years is kept for four years. How much of the substance remained unchanged?

(1) 5 mg

(2) 2 mg

(3) 2.5 mg

(4) 0 mg

Options :

1908898601. 1

1908898602. 2

1908898603. 3

1908898604. 4

Question Number : 77 Question Id : 1908892168 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

ZOLLEGE.in

Which of the following disintegration series of heavy elements will give Bi^{209} as stable nucleus?

(1) Thorium series
(2) Neptunium series
(3) Uranium series
(4) Actinium series

Options :

1908898605. 1

1908898606. 2

1908898607. 3

1908898608. 4

Question Number : 78 Question Id : 1908892169 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The ratio of the sizes of $^{208}_{82}Pb$ and $^{26}_{12}Mg$ nuclei is approximately

(1) 2
(2) 4
(3) 8
(4) 16

Options :

1908898609. 1

1908898610. 2

1908898611. 3

1908898612. 4

Question Number : 79 Question Id : 1908892170 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

ZOLLEGE.in

What is second nearest neighbor distance in bcc crystal whose conventional unit cell parameter is a ?

(1) a

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

(3) $a\sqrt{2}$

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

Options :

1908898613. 1

1908898614. 2

1908898615. 3

1908898616. 4

Question Number : 80 Question Id : 1908892171 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In a simple cubic lattice $d_{100} : d_{110} : d_{111}$ is

(1) 6:3:2

(2) $6 : 3 : \sqrt{2}$

(3) $\sqrt{6} : \sqrt{3} : \sqrt{2}$

(4) $\sqrt{6} : \sqrt{3} : \sqrt{4}$

Options :

1908898617. 1

1908898618. 2

1908898619. 3

1908898620. 4

Question Number : 81 Question Id : 1908892172 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

ZOLLEGE.in

If the angle between the direction of incident X-ray and diffracted one is 16°, the angle of incidence (glancing) will be

(1) 32° (2) 24°

(3) 90° (4) 82°

Options :

1908898621. 1

1908898622. 2

1908898623. 3

1908898624. 4

Question Number : 82 Question Id : 1908892173 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

If $\vec{K}$ is wave vector of incident X-ray and $\vec{G}$ be the reciprocal lattice vector then condition for Bragg reflections is given by

(1) $\vec{K} = \vec{G}$ (2) $|\vec{K}| = |\vec{G}|$

(3) $2\vec{K} \cdot \vec{G} = G^2$ (4) $\vec{K} = -\vec{G}$

Options :

1908898625. 1

1908898626. 2

1908898627. 3

1908898628. 4

Question Number : 83 Question Id : 1908892174 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

ZOLLEGE.in

The temperature dependence of the electrical resistivity of a metal according to classical free electron theory

(1) $\rho \propto T^2$

(2) $\rho \propto T^{-1}$

(3) $\rho \propto T^{1/2}$

(4) $\rho \propto T^{-2}$

Options :

1908898629. 1

1908898630. 2

1908898631. 3

1908898632. 4

Question Number : 84 Question Id : 1908892175 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The Fermi level of an intrinsic semiconductor is pinned at the center of the band gap. The probability of occupation of the highest electron state in valence band at room temperature, will be

(1) Zero

(2) Between zero and half

(3) Half

(4) One

Options :

1908898633. 1

1908898634. 2

1908898635. 3

1908898636. 4

Question Number : 85 Question Id : 1908892176 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

ZOLLEGE.in

The form factor of a half wave rectifier is

(1) $\frac{\pi}{2}$ (2) $\frac{\pi}{\sqrt{2}}$

(3) $\frac{\pi}{2\sqrt{2}}$ (4) π

Options :

1908898637. 1

1908898638. 2

1908898639. 3

1908898640. 4

Question Number : 86 Question Id : 1908892177 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following gates has the exact inverse output of the OR gate for all possible input combinations?

(1) AND (2) NOT

(3) NOR (4) NAND

Options :

1908898641. 1

1908898642. 2

1908898643. 3

1908898644. 4

Question Number : 87 Question Id : 1908892178 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

ZOLLEGE.in

The decimal equivalent of hexadecimal E 5 is

(1) 279 (2) 229

(3) 427 (4) 3000

Options :

1908898645. 1

1908898646. 2

1908898647. 3

1908898648. 4

Question Number : 88 Question Id : 1908892179 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In case of wave function $\psi = \frac{e^{ikr}}{r}$, the probability current density is

(1) $\frac{\hbar k}{mr^2}$ (2) $\frac{\hbar k}{mr}$

(3) $\frac{\hbar k}{r^2}$ (4) $\frac{\hbar k}{r}$

Options :

1908898649. 1

1908898650. 2

1908898651. 3

1908898652. 4

Question Number : 89 Question Id : 1908892180 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

ZOLLEGE.in

A particle is described by a wave function $\psi(x) = e^{-|x|}$ in one dimension. The probability that it will be found in the region $|x| \leq a, a > 0$ is

(1) e^{-a} (2) e^{-2a}

(3) $1-e^{-a}$ (4) $1-e^{-2a}$

Options :

1908898653. 1

1908898654. 2

1908898655. 3

1908898656. 4

Question Number : 90 Question Id : 1908892181 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Two's complement (decimal) of the binary number 1000001 is

(1) + 63 (2) – 63

(3) + 62 (4) – 62

Options :

1908898657. 1

1908898658. 2

1908898659. 3

1908898660. 4

Question Number : 91 Question Id : 1908892182 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

ZOLLEGE.in

Two particles are moving towards each other with equal velocities $c/2$. Their velocity of approach will be

(1) C

(2) $\frac{C}{2}$

(3) $\frac{4C}{5}$

(4) $\frac{C}{4}$

Options :

1908898661. 1

1908898662. 2

1908898663. 3

1908898664. 4

Question Number : 92 Question Id : 1908892183 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

If the momentum of an electron moving with a velocity 0.9c is increased by 1% then the increase in its energy is

(1) 1%

(2) 0.9%

(3) 0.81%

(4) 0.5%

Options :

1908898665. 1

1908898666. 2

1908898667. 3

1908898668. 4

Question Number : 93 Question Id : 1908892184 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

ZOLLEGE.in

The phase-shift between input and output voltages of CE amplifier

(1) 90° (2) 120°

(3) 180° (4) 270°

Options :

1908898669. 1

1908898670. 2

1908898671. 3

1908898672. 4

Question Number : 94 Question Id : 1908892185 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The purpose of capacitors in a transistor amplifier is to

(1) Protect the transistor (2) Cool the transistor

(3) Provide biasing (4) Couple or bypass a.c. component

Options :

1908898673. 1

1908898674. 2

1908898675. 3

1908898676. 4

Question Number : 95 Question Id : 1908892186 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

ZOLLEGE.in

If the binding energy per nucleon in $^{7}_{3}Li$ and $^{4}_{2}He$ nuclei are 5.60 MeV and 7.06 MeV respectively, then in the reaction $p + ^{7}_{3}Li \rightarrow ^{4}_{2}He + ^{4}_{2}He$; energy of proton must be

(1) 28.24 MeV

(2) 17.28 MeV

(3) 1.46 MeV

(4) 39.2 MeV

Options :

1908898677. 1

1908898678. 2

1908898679. 3

1908898680. 4

Question Number : 96 Question Id : 1908892187 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

According to Einstein's photoelectric equation, the plot of the kinetic energy of the emitted photo electrons from a metal vs. the frequency of the incident radiation gives straight line whose slope

(1) depends on the nature of the metal used

(2) depends on the intensity of the radiation

(3) depends both on the intensity of the radiation and the metal used

(4) is the same for all metals and independent of the intensity of the radiation

Options :

1908898681. 1

1908898682. 2

1908898683. 3

1908898684. 4

Question Number : 97 Question Id : 1908892188 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

ZOLLEGE.in

For a transistor amplifier in common emitter configuration having load impedance of 1 kΩ (h_{fe} = 50 and h_{oe} = 25 × 10^{-6} S) the current gain is

(1) – 5.2

(2) – 15.7

(3) – 24.8

(4) – 48.78

Options :

1908898685. 1

1908898686. 2

1908898687. 3

1908898688. 4

Question Number : 98 Question Id : 1908892189 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Curie temperature is the temperature above which

(1) a ferromagnetic material becomes paramagnetic

(2) a paramagnetic material becomes diamagnetic

(3) a ferromagnetic material becomes diamagnetic

(4) a paramagnetic material becomes ferromagnetic

Options :

1908898689. 1

1908898690. 2

1908898691. 3

1908898692. 4

Question Number : 99 Question Id : 1908892190 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

ZOLLEGE.in

If $\psi = \sqrt{\frac{2}{L}} \cos\frac{\pi x}{L} e^{-i\varepsilon t/\hbar}$, then $< x >$ in the limit $\frac{-L}{2} < x < \frac{L}{2}$ is

(1) $\frac{3}{4L}$

(2) 0

(3) $\frac{1}{4L}$

(4) $\frac{L}{2}$

Options :

1908898693. 1

1908898694. 2

1908898695. 3

1908898696. 4

Question Number : 100 Question Id : 1908892191 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following phenomenon can be explained by quantum mechanical tunneling through the barrier?

(1) α–decay

(2) emission of photo electrons from metal surface

(3) γ–decay

(4) β–decay

Options :

1908898697. 1

1908898698. 2

1908898699. 3

1908898700. 4

ZOLLEGE.in