Question Paper Preview

Notations :

1.Options shown in green color and with ✔ icon are correct.

2.Options shown in red color and with ✖ icon are incorrect.

Question Paper Name :	Mechanical Engineering 31st Aug 2020 Shift 2
Subject Name :	Mechanical Engineering
Creation Date :	2020-09-01 11:53:56
Duration :	180
Total Marks :	200
Display Marks:	No
Share Answer Key With Delivery Engine :	Yes
Actual Answer Key :	Yes
Calculator :	None
Magnifying Glass Required? :	No
Ruler Required? :	No
Eraser Required? :	No
Scratch Pad Required? :	No
Rough Sketch/Notepad Required? :	No
Protractor Required? :	No
Show Watermark on Console? :	Yes
Highlighter :	No
Auto Save on Console? :	Yes

Mechanical Engineering

Group Number :	1
Group Id :	76439055
Group Maximum Duration :	0
Group Minimum Duration :	180
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	200
Is this Group for Examiner? :	No

Mathematics

Section Id :	764390211
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	50
Number of Questions to be attempted :	50
Section Marks :	50
Display Number Panel :	Yes
Group All Questions :	Yes
Mark As Answered Required? :	Yes

Sub-Section Number : 1
Sub-Section Id : 764390241
Question Shuffling Allowed : Yes

Question Number : 1 Question Id : 76439010825 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Let A, B be two distinct square matrices of same order such that AB=A, BA=B, then

Options :

76439043201. ✔ $A^2 = A,\ B^2 = B$

76439043202. ✖ $A^2 = A,\ B^2 \neq B$

76439043203. ✖ $A^2 \neq A,\ B^2 = B$

76439043204. ✖ $A^2 \neq A,\ B^2 \neq B$

Question Number : 2 Question Id : 76439010826 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Which of the following statements is not correct?

Options :

76439043205. ✖ Every square matrix can be expressed as a sum of a symmetric and a skew-symmetric matrices.

76439043206. ✖ If A is non singular matrix , then so is adj A

76439043207. ✖ If A , B , C are nxn matrices , then (AB)C=A(BC)

76439043208. ✔ Let O denote the nxn null matrix. If A,B are nxn matrices and AB=O, then A=O or B=O

Question Number : 3 Question Id : 76439010827 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

If A is a square matrix of order 4, then $|adj(adjA^2)| =$

Options :

76439043209. ✖ $|A|^3$

76439043210. ✖ $|A|^6$

76439043211. ✖ $|A|^{27}$

76439043212. ✔ $|A|^{18}$

Question Number : 4 Question Id : 76439010828 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

If the system of equations $x = cy + bz$, $y = az + cx$, $z = bx + ay$ has a non-zero solution, then $a^2 + b^2 + c^2 + 2abc =$

Options :

76439043213. ✖ 0

76439043214. ✖ 2

76439043215. ✔ 1

76439043216. ✖ 3

Question Number : 5 Question Id : 76439010829 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

If $\frac{x^2+x+1}{x^2+2x+1} = A + \frac{B}{x+1} + \frac{C}{(x+1)^2}$, then $(A,B,C) =$

Options :

76439043217. ✔ (1,-1,1)

76439043218. ✖ (1,-1,-1)

76439043219. ✖ (-1,1,-1)

76439043220. ✖ (-1,-1,-1)

Question Number : 6 Question Id : 76439010830 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If x,y,z are three distinct positive real numbers and $\frac{\log x}{y-z}=\frac{\log y}{z-x}=\frac{\log z}{x-y}$, then $xyz=$

Options :

76439043221. ✖ 0

76439043222. ✔ 1

76439043223. ✖ 2

76439043224. ✖ 3

Question Number : 7 Question Id : 76439010831 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In $\triangle ABC$, if $\cot\frac{A}{2}=\frac{b+c}{a}$, $then\ \angle A+\angle C=$

Options :

76439043225. ✖ 60°

76439043226. ✔ 90°

76439043227. ✖ 120°

76439043228. ✖ 150°

Question Number : 8 Question Id : 76439010832 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In $\triangle ABC$, if $\cot\frac{A}{2}:\cot\frac{B}{2}:\cot\frac{C}{2}=3:5:7$, then $a:b:c=$

Options :

76439043229. ✖ 5:4:6

76439043230. ✔ 6:5:4

76439043231. ✖ 4:6:5

76439043232. ✖ 12:5:4

Question Number : 9 Question Id : 76439010833 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

If $A-B=\frac{3\pi}{4}$, then $(1-\tan A)(1+\tan B) =$

Options :

76439043233. ✖ 0

76439043234. ✖ 1

76439043235. ✔ 2

76439043236. ✖ 3

Question Number : 10 Question Id : 76439010834 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

$\sqrt{3}\csc 20^0 - \sec 20^0 =$

Options :

76439043237. ✖ 1

76439043238. ✖ 2

76439043239. ✖ 3

76439043240. ✔ 4

Question Number : 11 Question Id : 76439010835 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

$\cos A \cos 2A \cos 4A \cos 8A =$

Options :

76439043241. ✔ $\frac{\sin 16A}{16 \sin A}$

76439043242. ✖ $\frac{\sin 32A}{32\sin A}$

76439043243. ✖ $\frac{\sin 48A}{48\sin A}$

76439043244. ✖ $\frac{\sin 64A}{64\sin A}$

Question Number : 12 Question Id : 76439010836 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The general solution set of $\sin 2x + \sin 4x = 2\sin 3x$ is

Options :

76439043245. ✔ $\left\{\frac{n\pi}{3} \middle/ n \in \mathbb{Z}\right\}$

76439043246. ✖ $\{2n\pi / n \in \mathbb{Z}\}$

76439043247. ✖ $\{n\pi / n \in \mathbb{Z}\}$

76439043248. ✖ $\left\{\frac{n\pi}{3} + 2n\pi \middle/ n \in \mathbb{Z}\right\}$

Question Number : 13 Question Id : 76439010837 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If x, y, z have same sign such that $xy + yz + zx < 1$ and $\tan^{-1}x + \tan^{-1}y + \tan^{-1}z = \pi$,

then $\frac{1}{xy} + \frac{1}{yz} + \frac{1}{zx} =$

Options :

76439043249. ✖ $\frac{1}{xyz}$

76439043250. ✔ 1

76439043251. ✖ xyz

76439043252. ✖ $\frac{1}{x^2y^2z^2}$

Question Number : 14 Question Id : 76439010838 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

If $\sinh x = 5$, then $e^x =$

Options :

76439043253. ✖ $5 - \sqrt{26}$

76439043254. ✔ $5 + \sqrt{26}$

76439043255. ✖ $5 \pm \sqrt{26}$

76439043256. ✖ $\sqrt{26} - 5$

Question Number : 15 Question Id : 76439010839 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

If α and β are two distinct complex numbers such that $\left|\frac{\beta-\alpha}{1-\bar{\alpha}\beta}\right| = 1$, then

Options :

76439043257. ✖ $|\alpha| = 1$

76439043258. ✖ $|\beta| = 1$

76439043259. ✔ $|\alpha| = 1$ or $|\beta| = 1$

76439043260. ✖ $|\alpha| = 1$ and $|\beta| = 1$

Question Number : 16 Question Id : 76439010840 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

If $\left(\frac{1+\sin\theta+i\cos\theta}{1+\sin\theta-i\cos\theta}\right)^n = \cos k\theta + i\sin k\theta$, then $k =$

Options :

76439043261. ✖ $\frac{n\pi}{2}-\theta$

76439043262. ✖ $\frac{n\pi}{2}-n\theta$

76439043263. ✖ $n\pi-n\theta$

76439043264. ✔ $\frac{1}{2\theta}(n\pi-2n\theta)$

Question Number : 17 Question Id : 76439010841 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

If the perpendicular distance of the straight line $\frac{x}{a}+\frac{y}{b}=1, a>0, b>0$ from the origin is p then

Options :

76439043265. ✖ $\frac{1}{p^2}=\frac{1}{a^2}-\frac{1}{b^2}$

76439043266. ✖ $p^2=b^2-a^2$

76439043267. ✔ $\frac{1}{p^2}=\frac{1}{a^2}+\frac{1}{b^2}$

76439043268. ✖ $p^2=a^2+b^2$

Question Number : 18 Question Id : 76439010842 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The line $lx+my+n=0$ is a normal to the circle $x^2+y^2-4x-6y+11=0$ if

Options :

76439043269. ✔ $2l+3m+n=0$

76439043270. $2l+3m-n=0$

76439043271. $2l-3m-n=0$

76439043272. $2l-3m+n=0$

Question Number : 19 Question Id : 76439010843 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The centre of the circle passing through origin and (0,4) & (4,0) is

Options :

76439043273. $(4,4)$

76439043274. $(4,2)$

76439043275. $(2,4)$

76439043276. $(2,2)$

Question Number : 20 Question Id : 76439010844 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

$\lim_{x\to\frac{\pi}{2}} \frac{e^{\cos x}-1}{x-\frac{\pi}{2}} =$

Options :

76439043277. 0

76439043278. 1

76439043279. -1

76439043280. $\pi/2$

Question Number : 21 Question Id : 76439010845 Question Type : MCQ Option Shuffling : Yes Display Question Number

: Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The derivative of $\log_a x$, with respect to a^x is

Options :

76439043281. ✖ 1

76439043282. ✖ xa^x

76439043283. ✔ $\dfrac{1}{xa^x(\log a)^2}$

76439043284. ✖ $\dfrac{1}{xa^x}$

Question Number : 22 Question Id : 76439010846 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If $y = x + \tan x$, then $\cos^2 x \dfrac{d^2y}{dx^2} + 2x =$

Options :

76439043285. ✖ $2y'$

76439043286. ✔ $2y$

76439043287. ✖ y'

76439043288. ✖ y

Question Number : 23 Question Id : 76439010847 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The set of all points at which the curve $y = \sin x$ has horizontal tangents are

Options :

76439043289. ✔ $\left((2n+1)\dfrac{\pi}{2}, (-1)^n\right)\ n \in \mathbb{Z}$

$\left(n\pi,(-1)^n\right)\ n\in\mathbb{Z}$

76439043290. ✖

$\left(n\frac{\pi}{2},(-1)^n\right)\ n\in\mathbb{Z}$

76439043291. ✖

$\left((2n+1)\pi,(-1)^n\right)\ n\in\mathbb{Z}$

76439043292. ✖

Question Number : 24 Question Id : 76439010848 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The interval in which $f(x)=x^x,(x>0)$ is increasing is

Options :

76439043293. ✖ $\left(0,1/e\right)$

76439043294. ✖ $(0,e)$

76439043295. ✖ (e,∞)

76439043296. ✔ $\left(1/e,\infty\right)$

Question Number : 25 Question Id : 76439010849 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The extreme values of $f(x)=4x-\frac{x^2}{2}$ on $\left[-2,\frac{9}{2}\right]$ are

Options :

76439043297. ✔ absolute minimum = -10; absolute maximum = 8

76439043298. ✖ absolute minimum = 8; absolute maximum = 12

76439043299. ✖ absolute minimum = -10; absolute maximum = 12

76439043300. ✖ absolute minimum = -2; absolute maximum = 9/2

Question Number : 26 Question Id : 76439010850 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

If $\sin u = \frac{x+y}{\sqrt{x}+\sqrt{y}}$, then $2\left(x\frac{\partial u}{\partial x}+y\frac{\partial u}{\partial y}\right)\cos u =$

Options :

76439043301. ✔ $\sin u$

76439043302. ✖ $\frac{1}{2}\sin u$

76439043303. ✖ $\tan u$

76439043304. ✖ $\sin 2u$

Question Number : 27 Question Id : 76439010851 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

$\int \frac{\sin 2x}{(\sin 5x)(\sin 3x)}dx =$

Options :

76439043305. ✖ $\log|\sin 3x| - \log|\sin 5x| + C$

76439043306. ✖ $\frac{1}{3}\log|\sin 3x| + \frac{1}{5}\log|\sin 5x| + C$

76439043307. ✔ $\frac{1}{3}\log|\sin 3x| - \frac{1}{5}\log|\sin 5x| + C$

$3\log|\sin 3x| - 5\log|\sin 5x| + C$

76439043308. ✖

Question Number : 28 Question Id : 76439010852 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

$\int x(\sin x)(\sec^3 x)dx =$

Options :

$\frac{1}{2}[\sec^2 x - \tan x] + C$

76439043309. ✖

76439043310. ✔ $\frac{1}{2}[x\sec^2 x - \tan x] + C$

$\frac{1}{2}[x\sec^2 x + \tan x] + C$

76439043311. ✖

$\frac{1}{2}[\sec^2 x + \tan x] + C$

76439043312. ✖

Question Number : 29 Question Id : 76439010853 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

$\int \sqrt{e^x - 1}\, dx =$

Options :

76439043313. ✔ $2\left[\sqrt{e^x - 1} - \tan^{-1}\sqrt{e^x - 1}\right] + C$

$\sqrt{e^x - 1} - \tan^{-1}\sqrt{e^x - 1} + C$

76439043314. ✖

$\sqrt{e^x - 1} + \tan^{-1}\sqrt{e^x - 1} + C$

76439043315. ✖

$$2\left[\sqrt{e^x-1}+\tan^{-1}\sqrt{e^x-1}\right]+C$$

76439043316.

Question Number : 30 Question Id : 76439010854 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

$$\int \frac{\ln(\tan x)}{\sin x \cos x}\,dx =$$

Options :

76439043317. $\frac{1}{2}ln\,(\tan x)+C$

76439043318. $\frac{1}{2}ln\,(\tan^2 x)\ +C$

76439043319. ✔ $\frac{1}{2}[\ln(\tan x)]^2\ +C$

76439043320. 0

Question Number : 31 Question Id : 76439010855 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The area of the region (in square units) bounded by the parabola $y = x^2 + 1$ and the straight-line $x + y = 3$ is

Options :

76439043321. ✔ $\frac{9}{2}$

76439043322. 3

76439043323. $\frac{9}{4}$

76439043324. 0

Question Number : 32 Question Id : 76439010856 Question Type : MCQ Option Shuffling : Yes Display Question Number

: Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The values of a function f at different points are given in the following table.

x	-4	-3	-2	-1	0	1	2
$f(x)$	0	4	5	3	10	11	2

The approximate value of $\int_{-4}^{2} f(x)dx$ is

Options :

76439043325. ✖ 32

76439043326. ✔ 34

76439043327. ✖ 26

76439043328. ✖ 40

Question Number : 33 Question Id : 76439010857 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The degree of the differential equation $(1+x^2)\left(\frac{dy}{dx}\right)^2 - 2xy\frac{dy}{dx} + (1+y^2) = 0$ is

Options :

76439043329. ✖ 1

76439043330. ✔ 2

76439043331. ✖ 3

76439043332. ✖ 0

Question Number : 34 Question Id : 76439010858 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Solution of $\frac{dy}{dx} + \frac{1+y^2}{1+x^2} = 0$ is

Options :

$\sin^{-1} x + \sin^{-1} y = C$

76439043333. ✖

$\tan^{-1} x - \tan^{-1} y = C$

76439043334. ✖

$\tan^{-1} x + \tan^{-1} y = C$

76439043335. ✔

$\sin^{-1} x - \sin^{-1} y = C$

76439043336. ✖

Question Number : 35 Question Id : 76439010859 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Solution of $(1+x^2)\frac{dy}{dx} + 2xy = \cos x$ is

Options :

76439043337. ✖ $(1+x^2)y + \sin x = C$

76439043338. ✖ $(1+x^2)y = \cos x + C$

76439043339. ✔ $(1+x^2)y = \sin x + C$

76439043340. ✖ $(1+x^2)y + \cos x = C$

Question Number : 36 Question Id : 76439010860 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A particular integral of $(D^2 - 1) = cosh\ x$

Options :

76439043341. ✔ $\frac{x}{2}\sinh x$

76439043342. ✖ $\frac{x}{2}\cosh x$

76439043343. ✖ $\sinh x$

76439043344. ✖ $\cosh x$

Question Number : 37 Question Id : 76439010861 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A particular integral of $\left(D^3+4D\right)y=\sin 2x$ is

Options :

76439043345. ✖ $\frac{x\sin 2x}{2}$

76439043346. ✖ $\frac{x\sin 2x}{4}$

76439043347. ✖ $\frac{x\sin 2x}{8}$

76439043348. ✔ $\frac{-x\sin 2x}{8}$

Question Number : 38 Question Id : 76439010862 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A particular integral of $(D^2 - 2D+4)y = x^2$ is

Options :

76439043349. ✖ $\frac{1}{4}(x^2-x)$

76439043350. ✔ $\frac{1}{4}(x^2+x)$

76439043351. ✖ $\frac{1}{4}(x^2+x+1)$

76439043352. ✖ $\frac{1}{4}(x^2+x-1)$

Question Number : 39 Question Id : 76439010863 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A particular integral of $(D^2 - 4)y = \cos^2 x$ is

Options :

76439043353. ✔ $\frac{-1}{8} - \frac{\cos 2x}{16}$

76439043354. ✖ $\frac{1}{8} - \frac{\cos 2x}{16}$

76439043355. ✖ $\frac{-1}{8} + \frac{\cos 2x}{16}$

76439043356. ✖ $\frac{1}{8} - \frac{\cos 2x}{16}$

Question Number : 40 Question Id : 76439010864 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Complementary function of $(D^3 - D^2 + D - 1)\, y = 0$ is

Options :

76439043357. ✖ $y_c = c_1 e^{-x} + c_2 \cos x + c_3 \sin x$

76439043358. ✖ $y_c = c_1 \cos x + c_2 \sin x$

76439043359. ✔ $y_c = c_1 e^{x} + c_2 \cos x + c_3 \sin x$

76439043360. ✖ $y_c = c_1 e^{2x} + c_2 \cos 2x + c_3 \sin 2x$

Question Number : 41 Question Id : 76439010865 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A differential equation formed by eliminating the constants a and b in $y = ae^{bx}$ is

Options :

76439043361. $y\frac{d^2y}{dx^2} = \frac{dy}{dx}$

76439043362. $y\left(\frac{d^2y}{dx^2}\right)^2 = \left(\frac{dy}{dx}\right)^2$

76439043363. $y\frac{dy}{dx} = \left(\frac{d^2y}{dx^2}\right)^2$

76439043364. $y\frac{d^2y}{dx^2} = \left(\frac{dy}{dx}\right)^2$

Question Number : 42 Question Id : 76439010866 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Solution of the differential equation $x\frac{dy}{dx} = y\,(\log y - \log x + 1)$ is

Options :

76439043365. $y = xe^{cx}$

76439043366. $y = x^2e^{cx}$

76439043367. $x = ye^{cy}$

76439043368. $x = y^2e^{cy}$

Question Number : 43 Question Id : 76439010867 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

If $F(s)$ denotes the Laplace transform of $t\sin t$, then $F(2) =$

Options :

76439043369. ✔ 4/25

76439043370. ✖ -4/25

76439043371. ✖ 4/5

76439043372. ✖ -4/5

Question Number : 44 Question Id : 76439010868 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If $F(s)$ denotes the Laplace transform of $\frac{\sin t}{t}$, then $F(1) =$

Options :

76439043373. ✖ $\pi/2$

76439043374. ✔ $\pi/4$

76439043375. ✖ $-\pi/2$

76439043376. ✖ $-\pi/4$

Question Number : 45 Question Id : 76439010869 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If $F(s)$ denotes the Laplace transform of $e^{-t}\sin t$, then $\lim_{s\to o} F(s) =$

Options :

76439043377. ✖ 0

76439043378. ✖ 2

76439043379. ✔ 1/2

76439043380. ✖ -1/2

Question Number : 46 Question Id : 76439010870 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

If $f(t)$ denotes the inverse Laplace transform of $\left[\frac{s+2}{(s+1)(s-2)}\right]$, then $\lim_{t\to o} f(t) =$

Options :

76439043381. ✖ -1

76439043382. ✖ 0

76439043383. ✖ 1/2

76439043384. ✔ 1

Question Number : 47 Question Id : 76439010871 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The inverse Laplace transform of $\log\frac{s+1}{s-1}$ is

Options :

76439043385. ✖ $\frac{e^t + e^{-t}}{t}$

76439043386. ✖ $\frac{-e^t - e^{-t}}{t}$

76439043387. ✖ $\frac{e^{-t} - e^t}{t}$

76439043388. ✔ $\frac{e^t - e^{-t}}{t}$

Question Number : 48 Question Id : 76439010872 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The inverse Laplace Transform of $\frac{1}{s^2(s+5)}$ is

Options :

76439043389. $t*t*e^t$

76439043390. ✔ $1*1*e^{-5t}$

76439043391. $\int_0^t \left(1-e^{-5\sigma}\right)d\sigma$

76439043392. $\int_0^t \left(\int_0^\sigma e^{-5\tau}d\tau\right)d\sigma$

Question Number : 49 Question Id : 76439010873 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Assertion (A): $\frac{1}{1^2}+\frac{1}{2^2}+\frac{1}{3^2}+\frac{1}{4^2}+\ldots\ldots\ldots=\frac{\pi^2}{12}$

Reason (R): The Fourier series to represent $x-x^2$ from $x=-\pi$ to $x=\pi$ is

$$-\frac{\pi^2}{3}+4\left[\frac{\cos x}{1^2}-\frac{\cos 2x}{2^2}+\frac{\cos 3x}{3^2}-\ldots\ldots\ldots\right]+2\left[\frac{\sin x}{1}-\frac{\sin 2x}{2}+\frac{\sin 3x}{3}-\ldots\ldots\ldots\right]$$

Options :

76439043393. Both A and (R) are true and (R) is correct explanation of (A)

76439043394. ✔ Both A and (R) are true but (R) is not correct explanation of (A)

76439043395. Statement (A) is true , Statement (R) is false

76439043396. Statement (A) is false , Statement (R) is true

Question Number : 50 Question Id : 76439010874 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The coefficient of $\cos x$ in the Fourier expansion of $f(x)=|\cos x|,\ x\in[-\pi,\pi]$ is

Options :

76439043397. ✖ $4/\pi$

76439043398. ✖ $-4/\pi$

76439043399. ✖ $2/\pi$

76439043400. ✔ 0

Physics

Section Id :	764390212
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	25
Number of Questions to be attempted :	25
Section Marks :	25
Display Number Panel :	Yes
Group All Questions :	Yes
Mark As Answered Required? :	Yes
Sub-Section Number :	1
Sub-Section Id :	764390242
Question Shuffling Allowed :	Yes

Question Number : 51 Question Id : 76439010875 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

$ML^2T^{-3}$is the dimensional formula of

Options :

76439043401. ✖ Energy

76439043402. ✖ Force

76439043403. ✔ Power

76439043404. ✖ Density

Question Number : 52 Question Id : 76439010876 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Distance 'd' covered by a particle in time 't' is given by

$$d = xt + yt^2 + zt^3$$

The dimensions of x, y, z are

Options :

76439043405. ✖ x=L, y=L, z=LT^{-1}

76439043406. ✖ x=L, y=LT^{-1}, z=LT^{-2}

76439043407. ✖ x=L, y=LT^{2}, z=LT^{3}

76439043408. ✔ x=LT^{-1}, y=LT^{-2}, z=LT^{-3}

Question Number : 53 Question Id : 76439010877 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The work function of Al, K and Pt is 4.38 eV, 2.36 eV and 5.60 eV respectively. Their respective threshold frequencies would be

Options :

76439043409. ✖ Al>Pt>K

76439043410. ✖ K>Al>Pt

76439043411. ✖ Al>K>Pt

76439043412. ✔ Pt>Al>K

Question Number : 54 Question Id : 76439010878 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The critical angle of a denser medium of refraction index $\sqrt{2}$ is

Options :

76439043413. ✖ 60°

76439043414. ✔ 45°

76439043415. ✖ 30°

76439043416. ✖ 0°

Question Number : 55 Question Id : 76439010879 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

During an adiabatic operation the pressure and density (P_1, d_1) of a diatomic gas change to (P_2, d_2). if $\frac{d2}{d1} = 243$, then $\frac{P_2}{P_1}$ is ($r=\frac{7}{5}$)

Options :

76439043417. ✔ 2187

76439043418. ✖ 3187

76439043419. ✖ 4187

76439043420. ✖ 1187

Question Number : 56 Question Id : 76439010880 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A gas is heated through 1° C in a closed vessel. Its pressure is increased by 0.4%. The initial temperature of the gas is

Options :

76439043421. ✖ 23° C

76439043422. ✔ -23° C

76439043423. ✖ 33° C

76439043424. ✖ -33° C

Question Number : 57 Question Id : 76439010881 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Find the cross product of the two vectors 2i + 3j + k and 3i + 2j + k.

Options :

76439043425. ✔ i + j – 5k

76439043426. ✖ 2i + 3j + k

76439043427. ✖ i + 2j + k

76439043428. ✖ 2i – j – 5k

Question Number : 58 Question Id : 76439010882 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Find the angle between two vectors $\bar{A}$= 2i + j–k and $\bar{B}$ = i–k

Options :

76439043429. ✖ 90°

76439043430. ✖ 45°

76439043431. ✖ 60°

76439043432. ✔ 30°

Question Number : 59 Question Id : 76439010883 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A car moving on a straight road accelerates from a speed of 4.1 m/s to a speed of 6.9 m/s in

5.0 s. What was its average acceleration?

Options :

76439043433. $5.6\ m/s^2$

76439043434. $1.2\ m/s^2$

76439043435. ✔ $0.56\ m/s^2$

76439043436. $1.56\ m/s^2$

Question Number : 60 Question Id : 76439010884 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A body is projected with an initial velocity 40 m/s at 60° to the horizontal. Find its initial velocity vector (given $g=10m/s^2$).

Options :

76439043437. $20i - 20j$

76439043438. ✔ $20i + 20\sqrt{3}\ j$

76439043439. $20\sqrt{3}\ i + 20j$

76439043440. $10i + 10\sqrt{3}\ j$

Question Number : 61 Question Id : 76439010885 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A bomb is dropped from an aircraft travelling horizontally at 150 ms^{-1} at a height of 490 m. The horizontal distance travelled by the bomb before it hits the ground is

Options :

76439043441. $1800\ m$

76439043442. ✔ $1500\ m$

76439043443. ✖ 1200 m

76439043444. ✖ 1000 m

Question Number : 62 Question Id : 76439010886 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Find the force required to move a body of mass 5 kg on a rough surface with a uniform velocity. If the coefficient of friction is 0.4

Options :

76439043445. ✖ 15N

76439043446. ✖ 16.5 N

76439043447. ✖ 18 N

76439043448. ✔ 19.6 N

Question Number : 63 Question Id : 76439010887 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A body of mass 20 kg moving with a velocity of 4m/s on a horizontal rough surface stops after covering a distance 5 m, the coefficient of friction is

Options :

76439043449. ✔ 0.16

76439043450. ✖ 0.32

76439043451. ✖ 1.6

76439043452. ✖ 3.2

Question Number : 64 Question Id : 76439010888 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A machine gun fires 240 bullets per minute with a velocity of 500 m/s. If the mass of each of the bullet is 5×10^{-2} kg. then the power of the gun is

Options :

76439043453. ✖ 30,000 watts

76439043454. ✖ 20,000 watts

76439043455. ✔ 25,000 watts

76439043456. ✖ 35,000 watts

Question Number : 65 Question Id : 76439010889 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A body of mass 200 kg is moving on a horizontal plane with an acceleration 2 m/s^2, what is the work done in moving the body through a distance of 50 m.

Options :

76439043457. ✖ 3×10^4 J

76439043458. ✔ 2×10^4 J

76439043459. ✖ 4×10^4 J

76439043460. ✖ 1×10^4 J

Question Number : 66 Question Id : 76439010890 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Find the kinetic energy of a bullet of mas 0.05 kg. if it moves with a velocity of 100 m/s.

Options :

76439043461. ✖ 120 J

76439043462. ✖ 200 J

76439043463. ✔ 250 J

76439043464. ✖ 150 J

Question Number : 67 Question Id : 76439010891 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A particle is executing SHM with an amplitude of 0.2m. At what distance from the mean position the potential energy of the particle will be equal to its kinetic energy

Options :

76439043465. ✖ $\pm 0.34\ meters$

76439043466. ✖ $\pm 0.24\ meters$

76439043467. ✔ $\pm 0.1414\ meters$

76439043468. ✖ $\pm 0.521\ meters$

Question Number : 68 Question Id : 76439010892 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A seconds pendulum oscillates with an amplitude of 0.4m. If the mass of the pendulum is 0.2 kg. Then kinetic energy of the pendulum at mean position

Options :

76439043469. ✔ 0.157 J

76439043470. ✖ 2.15 J

76439043471. ✖ 1.5 J

76439043472. ✖ 3 J

Question Number : 69 Question Id : 76439010893 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Velocity of sound wave in air at 0°C is

Options :

76439043473. ✖ 350 m/s

76439043474. ✔ 330 m/s

76439043475. ✖ 360 m/s

76439043476. ✖ 380 m/s

Question Number : 70 Question Id : 76439010894 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The minimum distance to hear an echo at 0°C is

Options :

76439043477. ✖ 15 meters

76439043478. ✔ 16.5 meters

76439043479. ✖ 17 meters

76439043480. ✖ 14 meters

Question Number : 71 Question Id : 76439010895 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Read the following statements about the viscosity, then choose the correct option

A: The viscosity of liquids increases as the temperature increases

B: The viscosity of gases increases as the temperature increases

Options :

76439043481. ✖ Only A is correct

76439043482. ✖ Only B is correct

76439043483. ✔ Both A and B are correct

76439043484. ✖ Both A and B are not correct

Question Number : 72 Question Id : 76439010896 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A Copper wire of length 2m is stretched by 2cm them find then the strain on the wire

Options :

76439043485. ✖ 0.02

76439043486. ✖ 0.2

76439043487. ✖ 0.1

76439043488. ✔ 0.01

Question Number : 73 Question Id : 76439010897 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Choose the correct expression for ohm's law

Options :

76439043489. ✔ $I = \frac{V}{R}$

76439043490. ✖ $I = \frac{R}{V}$

76439043491. ✖ $V = \frac{R}{I}$

76439043492. ✖ $V = \frac{I}{R}$

Question Number : 74 Question Id : 76439010898 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

1A, 2A and 3A currents are flowing a junction then find out how much current will flow out from that junction

Options :

76439043493. ✔ 6A

76439043494. ✖ 3A

76439043495. ✖ 2A

76439043496. ✖ 1A

Question Number : 75 Question Id : 76439010899 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Read the following statements about magnetism,

A: The two poles of a magnet will have equal pole strength

B: Like poles of magnet will attract each other

C: Magnetic poles can be isolated from each other

D: The magnetism in the middle of a bar magnet is minimum

Choose the correct option from the following:

Options :

76439043497. ✖ A and B are correct

76439043498. ✖ A, B and C are correct

76439043499. ✖ A, B, C and D are correct

76439043500. ✔ A and D are correct

Chemistry

Section Id : 764390213
Section Number : 3

Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	25
Number of Questions to be attempted :	25
Section Marks :	25
Display Number Panel :	Yes
Group All Questions :	Yes
Mark As Answered Required? :	Yes
Sub-Section Number :	1
Sub-Section Id :	764390243
Question Shuffling Allowed :	Yes

Question Number : 76 Question Id : 76439010900 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The electronic configuration of Na^{+}

Options :

76439043501. ✖ $1S^2 2S^2 2P^6 3S^1$

76439043502. ✖ $1S^2 2S^2 2P^6 3S^2$

76439043503. ✔ $1S^2 2S^2 2P^6 3S^0$

76439043504. ✖ $1S^2 2S^2 2P^6 3S^2 3P^1$

Question Number : 77 Question Id : 76439010901 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Number of sigma (σ) and Pi (π) bonds present in Nitrogen molecule

Options :

76439043505. ✖ $1\sigma, 1\pi$

76439043506. ✖ $2\sigma, 1\pi$

76439043507. ✖ $2\sigma, 2\pi$

76439043508. ✔ $1\sigma, 2\pi$

Question Number : 78 Question Id : 76439010902 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

What is the oxidation numbers of Mn in $KMnO_4$

Options :

76439043509. ✔ +7

76439043510. ✖ +6

76439043511. ✖ -7

76439043512. ✖ -6

Question Number : 79 Question Id : 76439010903 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Find the molarity of the solution which contain 20 g of sodium hydroxide (NaOH) in 100 ml solution

Options :

76439043513. ✔ 5 M

76439043514. ✖ 2 M

76439043515. ✖ 1 M

76439043516. ✖ 0.5 M

Question Number : 80 Question Id : 76439010904 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Equivalent weight of sulphuric acid (H_2SO_4) is

Options :

76439043517. ✖ 98 g

76439043518. ✔ 49 g

2 g

76439043519.

100 g

76439043520.

Question Number : 81 Question Id : 76439010905 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is not a buffer solution?

Options :

76439043521. $CHCOOH + CH_3COONa$

76439043522. $NH_4Cl + NH_4OH$

76439043523. ✔ $NaOH + NaCl$

76439043524. $CH_3COOH + CH_3COOK$

Question Number : 82 Question Id : 76439010906 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Statement a: Ionic Product of water is 1×10^{-14}

Statement b: pH value of neutral Solution is 7

Options :

76439043525. Both the statements are incorrect

76439043526. ✔ Both the statements are correct

76439043527. Statement ' a' is correct, 'b' is incorrect

76439043528. Statement 'a' is incorrect ,' b' is correct

Question Number : 83 Question Id : 76439010907 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What is the pH of 10^{-3} M HCl Solution?

Options :

76439043529. ✔ 3

76439043530. ✖ 10

76439043531. ✖ 10^{-3}

76439043532. ✖ -3

Question Number : 84 Question Id : 76439010908 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Statement a: flux +slag = gangue

Statement b: flux + gangue = slag

Options :

76439043533. ✖ Both the statements are incorrect

76439043534. ✖ Both the statements are correct

76439043535. ✖ Statement 'a' is correct, 'b' is incorrect

76439043536. ✔ Statement 'a' is incorrect, 'b' is correct

Question Number : 85 Question Id : 76439010909 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Composition of brass alloy is

Options :

76439043537. ✖ Ni-60%, Al-40%

76439043538. ✖ Cu- 60%, Ni -40%

76439043539. ✔ Cu- 60%, Zn- 40%

76439043540. ✖ Cu- 40%, Zn- 60%

Question Number : 86 Question Id : 76439010910 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The EMF of the following cell Pt, $H_2(g)$ | Hcl (sol)|| AgCl $_{(s)}$ |$Ag_{(s)}$ is

(given that $E^o_{Agcl/Ag} = +0.222v$)

Options :

76439043541. ✔ + 0.222 v

76439043542. ✖ -0.222 v

76439043543. ✖ +0.44 v

76439043544. ✖ -0.44 v

Question Number : 87 Question Id : 76439010911 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Standard reduction potential of Zn is

Options :

76439043545. ✔ -0.76 v

76439043546. ✖ +0.76 v

76439043547. ✖ +0.44 v

76439043548. ✖ + 0.642 v

Question Number : 88 Question Id : 76439010912 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Which of the following is a primary factor influencing on rate of corrosion

Options :

76439043549. ✖ pH

76439043550. ✖ Temperature

76439043551. ✖ Polarization of electrode

76439043552. ✔ Nature of the metal

Question Number : 89 Question Id : 76439010913 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Formation of rust on iron is an example of

Options :

76439043553. ✖ Chemical corrosion

76439043554. ✔ Electrochemical corrosion

76439043555. ✖ Liquid metal corrosion

76439043556. ✖ Galvanic corrosion

Question Number : 90 Question Id : 76439010914 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Impressed voltage method is an example of

Options :

76439043557. ✔ Cathodic protection

76439043558. ✖ Anodic protection

76439043559. ✖ Metal coating

76439043560. ✖ Organic coating

Question Number : 91 Question Id : 76439010915 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Indicate the right chemical equation for the removal of temporary handness of water?

Options :

76439043561. ✔ $Ca(HCO_3)_2 \rightarrow CaCO_3 + CO_2 + H_2O$

76439043562. ✖ $Na_2Z + MgSo_4 \rightarrow MgZ + Na_2SO_4$

76439043563. ✖ $Cl_2 + H_2O \rightarrow HCl + HClO$

76439043564. ✖ $Na_2Z + CaCl_2 \rightarrow CaZ + 2NaCl$

Question Number : 92 Question Id : 76439010916 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Indicate the hardness of water in degree French and degree Clark when the degree of hardness of water is 250 ppm?

Options :

76439043565. ✖ 250° Fr & 19.5° Clark

76439043566. ✖ 20.5° Fr & 14.7° Clark

76439043567. ✔ 25° Fr & 17.5° Clark

76439043568. ✖ 20.5° Fr & 17.5° Clark

Question Number : 93 Question Id : 76439010917 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

What is the hardness of a sample of water in ppm (in equivalents of $CaCO_3$) which contains 29.2 mg of $Mg(HCO_3)_2$ per litre

Options :

76439043569. ✖ 30 mg

19 mg

76439043570. ✖

25 mg

76439043571. ✖

20 mg

76439043572. ✔

Question Number : 94 Question Id : 76439010918 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following statements is false?

Options :

76439043573. ✖

In addition polymerisation, polymer molecular weight rises steadily through the reaction

Addition polymerisation requires the presence of double bond in monomer

76439043574. ✖

In addition polymerisation, growth of chain is at one active centre

76439043575. ✔

No by-product is formed in addition polymerisation

76439043576. ✖

Question Number : 95 Question Id : 76439010919 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which catalyst is used in the preparation of Bakelite

Options :

76439043577. ✖ Benzoyl peroxide

76439043578. ✖ Isobutylene with $TiCl_4$

76439043579. ✔ Acidic /Alkaline

76439043580. ✖ Metal Chloride

Question Number : 96 Question Id : 76439010920 Question Type : MCQ Option Shuffling : Yes Display Question Number

: Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Which rubber is used for preparing gloves and aprons?

Options :

76439043581. ✖ Buna-S rubber

76439043582. ✔ Neoprene rubber

76439043583. ✖ Butyl rubber

76439043584. ✖ Silicone rubber

Question Number : 97 Question Id : 76439010921 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Which of the following is not character of a good fuel?

Options :

76439043585. ✖ The fuel must burn with a moderate velocity

76439043586. ✔ It should possess low ignition temperature

76439043587. ✖ It should have the highest pyrometric effect

76439043588. ✖ It should possess high calorific value

Question Number : 98 Question Id : 76439010922 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Match the following and choose the right answer

1. Atmosphere	A. It covers sea, rivers, oceans, lakes
2. Hydrosphere	B. It contains life saving oxygen
3. Lithosphere	C. The domain of living organism
4. Biosphere	D. The solid component of the earth

Choose the correct option from the following:

Options :

76439043589. ✖ 1-B, 2-D, 3-A, 4-C

76439043590. ✔ 1-B, 2-A, 3-D, 4-C

76439043591. ✖ 1-D, 2-A, 3-B, 4-C

76439043592. ✖ 1-B, 2-C, 3-D, 4-A

Question Number : 99 Question Id : 76439010923 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The permissible level of a poisonous pollutant in atmosphere is known as

Options :

76439043593. ✖ Gaseous Pollutant

76439043594. ✖ Aerosol pollutant

76439043595. ✔ Threshold limit value

76439043596. ✖ Biological contaminant

Question Number : 100 Question Id : 76439010924 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Which pollutants form smog that limits the visibility of roads?

Options :

76439043597. ✖ Carbon monoxide and hydrocarbons

76439043598. ✖ Sulphur oxides and hydrocarbons

76439043599. ✖ Peroxy acetyl nitrates

76439043600. ✔ Nitrogen oxides and hydrocarbons

Mechanical Engineering

Section Id :	764390214
Section Number :	4
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	100
Number of Questions to be attempted :	100
Section Marks :	100
Display Number Panel :	Yes
Group All Questions :	Yes
Mark As Answered Required? :	Yes
Sub-Section Number :	1
Sub-Section Id :	764390244
Question Shuffling Allowed :	Yes

Question Number : 101 Question Id : 76439010925 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The Cross- Section of chisel is usually

Options :

76439043601. ✖ Rectangular

76439043602. ✖ Square

76439043603. ✖ Hexagonal

76439043604. ✔ Octagonal

Question Number : 102 Question Id : 76439010926 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is not true for cold working of metals

Options :

76439043605. ✖ Residual stresses are set up in the metal

76439043606. ✔ Stress required to cause deformation is less than hot working of metals

76439043607. ✖ It reduces the corrosion resistance of the metal

76439043608. ✖ Distortion of grains takes place in most of the cold working process

Question Number : 103 Question Id : 76439010927 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The term applied to the first operation in an impression die forging is

Options :

76439043609. ✔ Fullering

76439043610. ✖ Blocking

76439043611. ✖ Trimming

76439043612. ✖ Coining

Question Number : 104 Question Id : 76439010928 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

There is no need for the withdrawal of pattern from the mould in case of

Options :

76439043613. ✖ Wax patterns

76439043614. ✖ Hollow patterns

76439043615. ✖ Patterns with core

76439043616. ✔ Consumable patterns

Question Number : 105 Question Id : 76439010929 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A Twist drill is specified by it's shank, material and the

Options :

76439043617. ✖ Length of its body

76439043618. ✔ Diameter

76439043619. ✖ Lip angle

76439043620. ✖ Size of flute

Question Number : 106 Question Id : 76439010930 Question Type : MCQ Option Shuffling : Yes Display Question Number

: Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Bevel protractor is used for

Options :

76439043621. ✔ Angular Measurements

76439043622. ✖ Linear Measurements

76439043623. ✖ Height Measurements

76439043624. ✖ Flatness Measurements

Question Number : 107 Question Id : 76439010931 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Surfaces Produced by straight and cylindrical grinding tools tends to create, which type of roughness

Options :

76439043625. ✖ Regularly Spaced but directional roughness

76439043626. ✖ Regularly Spaced but non directional roughness

76439043627. ✔ irregularly Spaced but directional roughness

76439043628. ✖ irregularly Spaced but non-directional roughness

Question Number : 108 Question Id : 76439010932 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Which of the following option is correct for the given statements about interferometry applied to flatness testing

Statement 1: If the angle between optical flat and surface is too large then there will be largely spaced fringe pattern is observed

Statement2: Quartz flats are very sensitive to heat

Choose the correct option regarding the Statement 1and Statement 2 respectively

Options :

76439043629. ✖ True, True

76439043630. ✖ False, True

76439043631. ✖ True, False

76439043632. ✔ False, False

Question Number : 109 Question Id : 76439010933 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The method of_____ projection is universally adopted for the purpose of engineering drawing

Options :

76439043633. ✔ Orthographic

76439043634. ✖ Isometric

76439043635. ✖ Oblique

76439043636. ✖ Perspective

Question Number : 110 Question Id : 76439010934 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Which of the following option is correct for given statements

Statement 1: Bilateral tolerances are used in mass production

Statement 2: The basic size should be equal to the upper and lower limits

Choose the correct option regarding the Statement 1and Statement 2 respectively

Options :

76439043637. ✖ True, True

76439043638. ✖ False, False

76439043639. ✔ True, False

76439043640. ✖ False, True

Question Number : 111 Question Id : 76439010935 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Bolt which consists of only a cylindrical shank threaded at both ends is called

Options :

76439043641. ✖ Headless to period bolt

76439043642. ✖ Tap bolt or cap screw

76439043643. ✔ Stud -bolt or stud

76439043644. ✖ Countersunk – headed bolt

Question Number : 112 Question Id : 76439010936 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Which of the following non-destructive testing is used to detect change in composition of any material

Options :

76439043645. ✖ Liquid penetration test

76439043646. ✖ Ultrasonic test

76439043647. ✖ Eddy Current test

76439043648. ✔ Radiography

Question Number : 113 Question Id : 76439010937 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Structural Constituents of equilibrium cooling of plain carbon steel (0.4%c) at room temperature are

Options :

76439043649. ✖ Austenite and ferrite

76439043650. ✔ Austenite and Pearlite

76439043651. ✖ Cementite and pearlite

76439043652. ✖ Ferrite and martensite

Question Number : 114 Question Id : 76439010938 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Match the following

List -I	List – II
(P) Annealing	(i) Surface hardening
(Q) Normalising	(ii) Relieving stress
(R) Martempering	(iii) Refining grain size
(S) Nitriding	(iv) Hard & Brittle structure

Choose the correct option from the following:

Options :

76439043653. ✖ P-iii, Q-ii, R-iv, S-i

76439043654. ✔ P-ii, Q-iii, R-iv, S-i

76439043655. ✖ P-ii, Q-iv, R-iii, S-i

P-i, Q-iii, R-iv, S-ii

76439043656. ✖

Question Number : 115 Question Id : 76439010939 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Powders of various ferrous and non -ferrous material which becomes brittle on heating can be formed using

Options :

Atomization

76439043657. ✖

Reduction

76439043658. ✖

Crushing

76439043659. ✔

Electrolysis

76439043660. ✖

Question Number : 116 Question Id : 76439010940 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

According to Lami's theorem, a body is in equilibrium condition if each force, among three_____ are proportional to sine angle between other two

Options :

Coplanar, Collinear forces

76439043661. ✖

Collinear, Non-concurrent forces

76439043662. ✖

Coplanar, non – concurrent forces

76439043663. ✖

Coplanar, concurrent forces

76439043664. ✔

Question Number : 117 Question Id : 76439010941 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

It is difficult to put a cycle into motion than to maintain the motion because of

Options :

Limiting friction

76439043665. ✔

Kinetic friction

76439043666. ✖

Rolling friction

76439043667. ✖

Static friction

76439043668. ✖

Question Number : 118 Question Id : 76439010942 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following needs to zero for the perfect equilibrium

Options :

$\sum F=0, \sum M=0, \sum \theta=0$

76439043669. ✖

$\sum F=0, \sum M \neq 0, \sum \theta=0$

76439043670. ✖

$\sum F \neq 0, \sum M =0, \sum \theta=0$

76439043671. ✖

$\sum F=0, \sum M=0, \sum \theta \neq 0$

76439043672. ✔

Question Number : 119 Question Id : 76439010943 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If two forces each equal to 'P' in magnitude, act at right angles, their effect may be neutralised by a third force acting along their bisector in the opposite direction with a magnitude of

Options :

76439043673. ✖ 2P

76439043674. ✖ P/2

76439043675. ✖ $P/\sqrt{2}$

76439043676. ✔ $\sqrt{2}\,P$

Question Number : 120 Question Id : 76439010944 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

D 'Alembert's principle is used for

Options :

76439043677. ✔ Reducing the problem of kinetics to equivalent statics problem

76439043678. ✖ Determining stress in the truss

76439043679. ✖ Stability of floating bodies

76439043680. ✖ Designing of safe structure

Question Number : 121 Question Id : 76439010945 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Variation of bending moment in cantilever, carrying a load intensity of which varies uniformly from zero at free end to w per unit length at fixed end is given by

Options :

76439043681. ✔ Cubic

76439043682. ✖ Parabolic

76439043683. ✖ Linear

76439043684. ✖ Constant

Question Number : 122 Question Id : 76439010946 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A simply supported beam of length l carries a uniformly distributed load "w" per unit length. Find the bending moment at x=0, x=l/2, x=l

Options :

$0, \frac{wl^2}{4}, 0$

76439043685. ✖

$\frac{wl}{2}, 0, \frac{-wl}{2}$

76439043686. ✖

$0, \frac{wl^2}{8}, 0$

76439043687. ✔

$\frac{-wl^2}{2}, 0, \frac{wl^2}{2}$

76439043688. ✖

Question Number : 123 Question Id : 76439010947 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The relation between Young's modulus (E) and Bulk modulus (K) is given by

(E= young modules, K= bulk modules, 1/m = positions ratio)

Options :

$K=\frac{3m-2}{mE}$

76439043689. ✖

$K=\frac{3E}{3m-2}$

76439043690. ✖

$K=\frac{3(m-2)}{mE}$

76439043691. ✖

$K=\frac{mE}{3(m-2)}$

76439043692. ✔

Question Number : 124 Question Id : 76439010948 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Prismatic bar of length "L", cross sectional area "A" which has "W" of weight per unit volume is hanging freely under its own weight. What is the total strain energy in the bar.

Options :

76439043693. ✖ $\frac{w^2AL^2}{6E}$

76439043694. ✔ $\frac{w^2AL^3}{6E}$

76439043695. ✖ $\frac{w^2AL^3}{3E}$

76439043696. ✖ $\frac{w^2AL^2}{3E}$

Question Number : 125 Question Id : 76439010949 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A cantilever beam "A" of length "L" carries a point load "W" at the end and another cantilever beam "B" of same length is loaded with UDL such that total load on the beam is "W". The ratio of maximum deflection between beams of B and A is _____ .

Options :

76439043697. ✖ 8/3

76439043698. ✔ 3/8

76439043699. ✖ 6/15

76439043700. ✖ 15/16

Question Number : 126 Question Id : 76439010950 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The ratio of diameters of two shafts joined in series is 1:2. If the two shafts have same material and are of same lengths, find the ratio of shear stress

Options :

76439043701. ✖ 2

76439043702. ✖ 4

76439043703. ✔ 8

76439043704. ✖ 16

Question Number : 127 Question Id : 76439010951 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The predominant effect of an axial tensile force on a helical spring is _____ .

Options :

76439043705. ✖ Bending

76439043706. ✖ Tension

76439043707. ✖ Compression

76439043708. ✔ Twisting

Question Number : 128 Question Id : 76439010952 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The application for which a point – to – point numerical control system can be used in a

Options :

76439043709. ✖ Lathe machine

76439043710. ✖ Milling machine

76439043711. ✔ Punching machine

76439043712. ✖ Shaping machine

Question Number : 129 Question Id : 76439010953 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

In a CNC part programming, G03 function is

Options :

Circular interpolation clockwise

76439043713. ✖

Circular interpolation anticlockwise

76439043714. ✔

Linear interpolation

76439043715. ✖

Specifies absolute input dimensions

76439043716. ✖

Question Number : 130 Question Id : 76439010954 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Joint notation of SCARA robot is _____

(where L=linear joint, T=Twisting joint, R= Rotational joint, O= Orthogonal joint, V=Revolving joint)

Options :

TRL

76439043717. ✖

TLO

76439043718. ✖

LOO

76439043719. ✖

VRO

76439043720. ✔

Question Number : 131 Question Id : 76439010955 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In case of biaxial state of normal stress, the normal stress on 45^0 planes is equal to_____

Options :

Sum of the normal stress

76439043721. ✖

Difference of the normal stress

76439043722. ✖

Half the sum of the normal stress

76439043723. ✔

Half the difference of the normal stress

76439043724. ✖

Question Number : 132 Question Id : 76439010956 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The mechanism used in a shaping machine is

Options :

76439043725. ✖ A closed 4 bar chain having 4 revolute pairs

76439043726. ✔ An inversion of the single slider crank chain

76439043727. ✖ A closed 6 bar chain having 6 revolute pairs

76439043728. ✖ A closed 4 bar chain having 2 revolute and 2 sliding pairs

Question Number : 133 Question Id : 76439010957 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

If a body is subjected to stresses in xy plane with stresses of 60 N/mm^2 and 80 N/mm^2 acting along x and y axes respectively.Also the shear stress acting is 10 N/mm^2. Find the inclination of the plane in which shear stress is zero.

Options :

76439043729. ✔ $22.5^0, 112.5^0$

76439043730. ✖ $45^0, 135^0$

76439043731. ✖ $15^0, 75^0$

76439043732. ✖ $75^0, 135^0$

Question Number : 134 Question Id : 76439010958 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

How can shock absorbing capacity of a bolt be increased

Options :

76439043733. ✖ By tightening it properly

76439043734. ✖ By increasing the shank

76439043735. ✖ By grinding the shank

76439043736. ✔ By making the shank equal to the core diameter

Question Number : 135 Question Id : 76439010959 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Match the following

List I	List II
P) Woodruff key	i) Loose fitting and light duty
Q) Kennedy key	ii) Heavy duty
R) Feather key	iii) Self aligning
S) Flat key	iv) Normal industrial use

Choose the correct option from the following:

Options :

76439043737. ✖ P – ii, Q – iii, R – iv, S – i

76439043738. ✔ P – iii, Q – ii, R – i, S – iv

76439043739. ✖ P – iii, Q – i, R – ii, S – iv

76439043740. ✖ P – iv, Q – iii, R – i, S - ii

Question Number : 136 Question Id : 76439010960 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Match the following

List 1	List2
P) Rigid flange coupling	i) Unsuitable for shock loads
Q) Clamp coupling	ii) Difficult to assemble / dissemble
R) Muffle coupling	iii) Prevents transmission of shock from one shaft to another
S) Bush pin flexible coupling	iv) High torque transmission

Choose the correct option from the following:

Options :

76439043741. ✔ P-iv, Q-i, R-ii, S-iii

76439043742. ✖ P-iv, Q-i, R-iii, S-ii

76439043743. ✖ P-iv, Q-ii, R-i, S-iii

76439043744. ✖ P-ii, Q-iv, R-i, S-iii

Question Number : 137 Question Id : 76439010961 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The life of a ball bearing at a load of 10KN is 8000hours. Its life in hours, if the load is increased to 20KN, keeping all other conditions same is _____ .

Options :

76439043745. ✖ 400

76439043746. ✖ 2000

76439043747. ✔ 1000

76439043748. ✖ 500

Question Number : 138 Question Id : 76439010962 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In multiple disc clutch, if there are 6 discs on the driving shaft and 5 discs on the driven shaft, then the number of pairs of contact surfaces will be equal to ___ .

Options :

76439043749. ✖ 11

76439043750. ✖ 12

76439043751. ✔ 10

76439043752. ✖ 22

Question Number : 139 Question Id : 76439010963 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What is the value of the radius of gyration of disc type of flywheel as compared to rim type of flywheel for the same mass and diameter

Options :

76439043753. ✖ $\sqrt{2}\ times$

76439043754. ✔ $\frac{1}{\sqrt{2}}\ times$

76439043755. ✖ 2 times

76439043756. ✖ $\frac{1}{2}\ times$

Question Number : 140 Question Id : 76439010964 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Calculate the tail stock set-over for turning a taper on a Job such that its two diameters are 80 mm and 50mm. Total length of the Job is 300mm and the length of tapered portion is 200mm only.

Note: For this question, discrepancy is found in question/answer. Full Marks is being awarded to all candidates.

Options :

76439043757. 5mm

76439043758. 10mm

76439043759. 15mm

76439043760. 20mm

Question Number : 141 Question Id : 76439010965 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In the following machine, head is usually circular, equispaced along its periphery

Options :

76439043761. ✖ Turret Lathe

76439043762. ✖ Automatic Lathe

76439043763. ✔ Capstan Lathe

76439043764. ✖ Engine Lathe

Question Number : 142 Question Id : 76439010966 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

It is required to divide the periphery of a Job into 60 equal divisions. Find the crank moment

Options :

76439043765. ✔ 12 holes on 18 holes circle

76439043766. ✖ 12 holes on 27 holes circle

76439043767. ✖ 12 holes on 33 holes circle

76439043768. ✖ 12 holes on 47 holes circle

Question Number : 143 Question Id : 76439010967 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Oxygen and acetylene gas combination is most widely used in gas welding due to

_____

Options :

76439043769. ✖ Easily available

76439043770. ✖ Low cost

76439043771. ✖ Moderate heat is produced

76439043772. ✔ Maximum heat is produced

Question Number : 144 Question Id : 76439010968 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

By using the following welding process, welding can be done in virtually any position

Options :

76439043773. ✖ TIG

76439043774. ✖ MIG

76439043775. ✔ MMAW

76439043776. ✖ SAW

Question Number : 145 Question Id : 76439010969 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A Machine rated at 100A at 60% duty cycle is accelerated to 150A.Determin the % duty cycle?

Options :

76439043777. ✖ 26.27

76439043778. ✖ 26.47

76439043779. ✔ 26.67

76439043780. ✖ 26.87

Question Number : 146 Question Id : 76439010970 Question Type : MCQ Option Shuffling : Yes Display Question Number

: Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Match the following

P. Mineral Oils	i. Petroleum products
Q. Conventional emulsions	ii. Soaps and salts solution in water
R. Aqueous solutions	iii. Soluble oils in water
S. Waxes	iv. Composed of Hydrocarbons

Choose the correct option from the following:

Options :

76439043781. ✖ P-ii, Q-iii, R-iv, S-i

76439043782. ✔ P-iv, Q-iii, R-ii, S-i

76439043783. ✖ P-iii, Q-ii, R-iv, S-i

76439043784. ✖ P-i, Q-iii, R-iv, S-ii

Question Number : 147 Question Id : 76439010971 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Standardized code used for grinding -wheel marking is 9A-463J5-V22AE where 'V' represents_____

Options :

76439043785. ✖ Abrasive type

76439043786. ✔ Bond type

76439043787. ✖ Grade type

76439043788. ✖ Abrasive size

Question Number : 148 Question Id : 76439010972 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The following precision -finishing process is easily adapted to high -volume production

Options :

76439043789. ✖ Lapping

76439043790. ✖ Honing

76439043791. ✖ Lapping and honing

76439043792. ✔ Superfinishing

Question Number : 149 Question Id : 76439010973 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

_____ jigs are employed to drill holes on large parts maintaining accurate spacing with each other

Options :

76439043793. ✔ Plate

76439043794. ✖ Channel

76439043795. ✖ Leaf

76439043796. ✖ Ring

Question Number : 150 Question Id : 76439010974 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

___ process is used for machining of electrically conductive materials only

Options :

76439043797. ✔ Electrical Discharge machining

76439043798. ✖ Electro chemical Machining

76439043799. ✖ Electro chemical Grinding

76439043800. ✖ ultrasonic machining

Question Number : 151 Question Id : 76439010975 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Absolute zero temperature is taken as

Options :

76439043801. ✖ +273.15 ºC

76439043802. ✖ -373.15 ºC

76439043803. ✖ 0 ºC

76439043804. ✔ -273.15 ºC

Question Number : 152 Question Id : 76439010976 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A System comprising a single phase is called as

Options :

76439043805. ✖ Open system

76439043806. ✖ Heterogeneous System

76439043807. ✔ Homogeneous system

76439043808. ✖ Closed system

Question Number : 153 Question Id : 76439010977 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The best practice of increasing the Carnot cycle efficiency is

Options :

76439043809. ✖ increasing the highest temperature

76439043810. ✖ Decreasing the highest temperature

76439043811. ✔ decreasing the lowest temperature

76439043812. ✖ Keeping the lowest temperatures

Question Number : 154 Question Id : 76439010978 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

For the same maximum pressure and maximum temperature, the efficiencies of Otto, Dual and diesel cycle are in the order of

Options :

76439043813. $\eta_{otto} > \eta_{Dual} > \eta_{diesel}$ ✖

76439043814. $\eta_{Dual} > \eta_{otto} > \eta_{diesel}$ ✖

76439043815. $\eta_{diesel} > \eta_{otto} > \eta_{Dual}$ ✖

76439043816. ✔ $\eta_{diesel} > \eta_{Dual} > \eta_{otto}$

Question Number : 155 Question Id : 76439010979 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The ratio of specific heats $\gamma(=\frac{c_p}{c_v})$ values of monatomic, Diatomic and polyatomic molecules are respectively

Options :

76439043817. ✔ 5/3, 7/5, 4/3

76439043818. ✖ 4/3, 7/5, 5/3

76439043819. ✖ 5/3, 7/5, 1/3

76439043820. ✖ 7/5, 5/3, 4/3

Question Number : 156 Question Id : 76439010980 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

When the fuel is burned and water is released in the liquid phase, the heating value of fuel is called

Options :

76439043821. ✖ Lower heating value

76439043822. ✔ Higher heating value

76439043823. ✖ Enthalpy of formation

76439043824. ✖ Enthalpy of oxidation

Question Number : 157 Question Id : 76439010981 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The lower heating value of propane at constant pressure and 25°c is 2044009 KJ/Kg mol.

The higher heating value at constant pressure is

(Take latent heat of vaporization as 2442 KJ/Kg at 25° C)

Options :

76439043825. ✖ 2200500 KJ/Kg

76439043826. ✖ 2600100 KJ/Kg

76439043827. ✔ 2219833 KJ/Kg

76439043828. ✖ 2500000 KJ/Kg

Question Number : 158 Question Id : 76439010982 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Cetane number of the fuel used commercially for diesel engine in India is in the range

Options :

76439043829. ✖ 85 to 95

76439043830. ✖ 60 to 80

76439043831. ✔ 45 to 55

76439043832. ✖ 65 to 75

Question Number : 159 Question Id : 76439010983 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Morse test is used to determine the Indicated power of a

Options :

76439043833. ✖ Single cylinder petrol engine

76439043834. ✖ Single cylinder diesel engine

76439043835. ✔ Multi-cylinder engine

76439043836. ✖ Four stroke engine

Question Number : 160 Question Id : 76439010984 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

For petrol engines, the method of governing employed is

Options :

76439043837. ✖ Quality governing

76439043838. ✔ Quantity governing

76439043839. ✖ Hit and Miss governing

76439043840. ✖ flywheel

Question Number : 161 Question Id : 76439010985 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Mechanical efficiency of reciprocating air compressor is expressed as

Options :

76439043841. ✖ $\frac{BP}{IP}$

76439043842. ✔ $\frac{IP}{BP}$

76439043843. ✖ $\frac{FP}{BP}$

76439043844. ✖ $\frac{FP}{IP}$

Question Number : 162 Question Id : 76439010986 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Work done in a two-stage reciprocating air compressor with perfect intercooling is given by

Note: For this question, discrepancy is found in question/answer. Full Marks is being awarded to all candidates.

Options :

76439043845. $\frac{n}{n-1}p_1v_1\left[\left(\frac{p_2}{p_1}\right)^{\frac{n-1}{n}}+\left(\frac{p_3}{p_1}\right)^{\frac{n-1}{n}}-2\right]$

76439043846. $\frac{n}{n-1}p_1v_1\left[\left(\frac{p_3}{p_1}\right)^{\frac{n-1}{n}}-1\right]$

76439043847. $\frac{2n}{n-1}p_1v_1\left[\left(\frac{p_3}{p_1}\right)^{\frac{n-1}{n}}-1\right]$

76439043848. $\frac{n}{n-1}p_1v_1\left[\left(\frac{p_2}{p_1}\right)^{\frac{n-1}{n}}\left(\frac{p_3}{p_2}\right)^{\frac{n-1}{n}}-2\right]$

Question Number : 163 Question Id : 76439010987 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Thermal efficiency of a gas turbine plant as compared to diesel engine plant is

Options :

76439043849. ✖ Higher

76439043850. ✔ Lower

76439043851. ✖ Same

76439043852. ✖ May be higher or lower

Question Number : 164 Question Id : 76439010988 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In a turbojet engine compared to momentum thrust, pressure thrust is

Options :

76439043853. ✔ Quite low

76439043854. ✖ Quite high

76439043855. ✖ Almost equal

76439043856. ✖ No pressure trust

Question Number : 165 Question Id : 76439010989 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

At triple point the vapour pressure of solid as compared to the vapour pressure of liquid of the same component will be

Options :

76439043857. ✖ More

76439043858. ✔ Same

76439043859. ✖ Less

76439043860. ✖ More or less depending on the system

Question Number : 166 Question Id : 76439010990 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The pressure and temperatures at the critical point of water are

Options :

76439043861. ✖ 221.2 kpa ; 374.15°C

76439043862. ✖ 221.2 bar; 374.15 k

76439043863. ✖ 221.2 mpa; 374.15°C

76439043864. ✔ 221.2 bar; 374.15°C

Question Number : 167 Question Id : 76439010991 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In order to compare the capacity of boilers, the feed water temperature and working pressure are taken as

Options :

76439043865. ✖ 50 °C and 1.1 bar pressure

76439043866. ✖ 100 °C and 1.1 bar pressure

76439043867. ✖ 50 °C and normal atmospheric pressure

76439043868. ✔ 100 °C and normal atmospheric pressure

Question Number : 168 Question Id : 76439010992 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The critical pressure ratio of convergent nozzle is defined as

Options :

76439043869. ✖ The ratio of outlet pressure to inlet pressure of nozzle

76439043870. ✖ The ratio of inlet pressure to out let pressure of nozzle

76439043871. ✔ The ratio of outlet pressure to inlet pressure only when mass flow rate per unit area is maximum

76439043872. ✖ The ration of outlet pressure to inlet pressure only when mass flow rate per unit area is minimum

Question Number : 169 Question Id : 76439010993 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The maximum efficiency for parson's reaction turbine is given by

Options :

$$\eta_{max} = \frac{\cos\alpha}{1+\cos\alpha}$$

76439043873. ✖

$$\eta_{max} = \frac{2\cos\alpha}{1+\cos\alpha}$$

76439043874. ✖

$$\eta_{max} = \frac{2\cos^2\alpha}{1+\cos^2\alpha}$$

76439043875. ✔

$$\eta_{max} = \frac{1+\cos^2\alpha}{2\cos^2\alpha}$$

76439043876. ✖

Question Number : 170 Question Id : 76439010994 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Reteau steam turbine is

Options :

76439043877. ✖ Reaction steam turbine

76439043878. ✖ Velocity compounded impulse turbine

76439043879. ✔ Pressure compounded impulse steam turbine

76439043880. ✖ Pressure velocity compounded steam turbine

Question Number : 171 Question Id : 76439010995 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In a shell and tube surface condenser

Options :

76439043881. ✖ Steam and cooling water mix to give the condensate

76439043882. ✔ Cooling water passes through the tubes and steam surrounds them

76439043883. ✖ Steam passes through the cooling tubes and cooling water surrounds them

76439043884. ✖ Steam and cooling water flow through the tubes and air surrounds them

Question Number : 172 Question Id : 76439010996 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

what is the minimum size of glass tube that can be used to measure water level. If the capillary rise in a tube is not to exceed 0.25 cm. Take the surface tension of water in contact with the air as 0.0075 kgf /m

Options :

76439043885. ✖ 0.6 cm

76439043886. ✔ 0.12 cm

76439043887. ✖ 0.06 cm

76439043888. ✖ 1.20 cm

Question Number : 173 Question Id : 76439010997 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The continuity equation for the flow of fluid is given in terms of density 'ρ' cross sectional area 'A' and velocity 'V'

Options :

76439043889. ✖ ρ/AV= Constant

76439043890. ✖ $\rho A/V$= Constant

76439043891. ✖ $\rho V/A$ = Constant

76439043892. ✔ ρAV= Constant

Question Number : 174 Question Id : 76439010998 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The Bernoulli's equation for the steady flow, incompressible, non-viscous fluid in a stream tube is given by

Options :

76439043893. ✔ $\frac{p}{w}+\frac{v^2}{2g}+z$= Constant

$$\frac{p}{m}+\frac{v^2}{2}+z=\text{Constant}$$

76439043894. ✖

$$\frac{p}{w}+\frac{v^2}{2g}+gz=\text{Constant}$$

76439043895. ✖

$$\frac{p}{m}+\frac{v^2}{2g}+Z=\text{Constant}$$

76439043896. ✖

Question Number : 175 Question Id : 76439010999 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The major loss of energy in the pipe is due to

Options :

76439043897. ✖ Sudden enlargement

76439043898. ✔ Friction

76439043899. ✖ Bends

76439043900. ✖ Gradual contraction

Question Number : 176 Question Id : 76439011000 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The force exerted by the jet of fluid on a stationary plate in the direction normal to the Jet is given by

Options :

76439043901. ✔ $\frac{wav^2}{g}$

76439043902. ✖ $\frac{mav^2}{g}$

76439043903. ✖ $\frac{mv^2}{ag}$

76439043904. ✖ $\frac{wv^2}{ag}$

Question Number : 177 Question Id : 76439011001 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

For High head more than 300 m, the type of hydraulic turbine generally used

Options :

76439043905. ✔ Pelton wheel

76439043906. ✖ Francis turbine

76439043907. ✖ Propeller Turbine

76439043908. ✖ Kaplan Turbine

Question Number : 178 Question Id : 76439011002 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The fluctuations in the velocity of flow in suction and delivery pipes of reciprocating pump are eliminated by

Options :

76439043909. ✖ Surging

76439043910. ✖ Priming

76439043911. ✖ Indicator

76439043912. ✔ Air Vessels

Question Number : 179 Question Id : 76439011003 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In a pneumatic control system the control valve used as final control element converts

Options :

76439043913. ✖ Pressure signal to electric signal

76439043914. ✖ Electric signal to pressure signal

76439043915. ✖ Position change to pressure signal

76439043916. ✔ Pressure signal to Position change

Question Number : 180 Question Id : 76439011004 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Under which condition the pneumatic system is preferred rather than hydraulic system

Options :

76439043917. ✖ Large amount of pressure requires speed, fairly accurate feed

76439043918. ✔ Medium amount of pressure requires speed, fairly accurate feed

76439043919. ✖ Large amount of pressure requires less speed, normal feed

76439043920. ✖ Large amount of pressure requires high speed, normal feed

Question Number : 181 Question Id : 76439011005 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Hydraulic and pneumatic systems are always

Options :

76439043921. ✖ Open loop system

76439043922. ✔ Closed loop system

76439043923. ✖ Semi closed loop system

76439043924. ✖ Isolated system

Question Number : 182 Question Id : 76439011006 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The process of planning, organising, directing and controlling the activities of the production is known as

Options :

76439043925. ✖ Manufacturing Schedule

76439043926. ✖ Production Systems

76439043927. ✖ Functional Operation

76439043928. ✔ Production management

Question Number : 183 Question Id : 76439011007 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The person in the industry is responsible for sales enquiries, quotations, orders and supervision of salesmen's effort is_____

Options :

76439043929. ✖ Works Manager

76439043930. ✖ Commercial Manger

76439043931. ✔ Sales Manager

76439043932. ✖ Personal Manager

Question Number : 184 Question Id : 76439011008 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The relative inventory control in which attention can be given based on the cost of the items and also based on the quantity of consumption is

Options :

76439043933. ✔ A-B-C Analysis

76439043934. ✖ S-D-E Analysis

76439043935. ✖ VED Analysis

76439043936. ✖ MNG Analysis

Question Number : 185 Question Id : 76439011009 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

In Marketing Management of the company, the main focal point is_____

Options :

76439043937. ✖ Product

76439043938. ✖ Profit

76439043939. ✖ Sales

76439043940. ✔ Customer

Question Number : 186 Question Id : 76439011010 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The main objective of ISO 9000 family of quality Management is

Options :

76439043941. ✖ Skill enhancement

76439043942. ✖ Employee Satisfaction

76439043943. ✖ Environmental sustainability

76439043944. ✔ Customer Satisfaction

Question Number : 187 Question Id : 76439011011 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

An individual who starts, creates and manages a new business can be called as_____

Options :

76439043945. ✖ A Manager

76439043946. ✖ A Professional

76439043947. ✔ An entrepreneur

76439043948. ✖ A Shopkeeper

Question Number : 188 Question Id : 76439011012 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The statistical quality control charts which are used for the process control are

Options :

76439043949. ✔ $\bar{X}$ and R charts

76439043950. ✖ P chart and C chart

76439043951. ✖ Y chart and Gantt chart

76439043952. ✖ nP chart and Z

Question Number : 189 Question Id : 76439011013 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In process charts, the symbol used for the storage is

Options :

76439043953. ✖ Square

76439043954. ✖ Circle

76439043955. ✔ Triangle

76439043956. ✖ Rectangle

Question Number : 190 Question Id : 76439011014 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A Work study is concerned with

Options :

76439043957. ✖ Motivation of workers

76439043958. ✖ Improving production planning and control

76439043959. ✖ Improving production capability

76439043960. ✔ Improve the method and finding standard time

Question Number : 191 Question Id : 76439011015 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The symbols developed by Gilbreth for different elementary motions of manual operations in method study are

Options :

76439043961. ✔ Therbligs

76439043962. ✖ Motion symbols

76439043963. ✖ Strings

76439043964. ✖ Winks

Question Number : 192 Question Id : 76439011016 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Coeffient of performance (COP) of refrigerator is

(Where Q is amount of heat extracted in the refrigerator and W is amount of work done)

Options :

76439043965. ✔ $\frac{Q}{W}$

76439043966. ✖ $\frac{Q-W}{Q}$

76439043967. ✖ $\frac{Q-W}{W}$

76439043968. ✖ $\frac{w}{Q}$

Question Number : 193 Question Id : 76439011017 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

In a simple vapour compression system, the vapour at low temperature and pressure enters into

Options :

76439043969. ✖ Condenser

76439043970. ✔ Evaporator

76439043971. ✖ Expansion valve

76439043972. ✖ Compressor

Question Number : 194 Question Id : 76439011018 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The energy supply for a vapour absorption system when compared to vapor compression system is

Options :

76439043973. ✖ low

76439043974. ✔ high

76439043975. ✖ same

76439043976. ✖ Not comparable

Question Number : 195 Question Id : 76439011019 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Air refrigeration system works on

Options :

76439043977. ✖ Carnot cycle

76439043978. ✖ Dual cycle

76439043979. ✖ Rankine cycle

76439043980. ✔ Reversed Brayton cycle

Question Number : 196 Question Id : 76439011020 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The difference between dry bulb temperature and dew point temperature of air is

Options :

76439043981. ✔ Dew point depression

76439043982. ✖ Wet bulb depression

76439043983. ✖ Degree of saturation

76439043984. ✖ Absolute humidity

Question Number : 197 Question Id : 76439011021 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which refrigerant is highly toxic and flammable?

Options :

76439043985. ✖ Carbon dioxide

76439043986. ✖ Sulphur dioxide

76439043987. ✔ Ammonia

76439043988. ✖ Freon-12

Question Number : 198 Question Id : 76439011022 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Flat plate collectors are used for

Options :

76439043989. ✔ water heating

76439043990. ✖ Refrigeration

76439043991. ✖ Cooling

76439043992. ✖ Steam engines

Question Number : 199 Question Id : 76439011023 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The function of a moderator in a nuclear reactor is to

Options :

76439043993. ✔ Slow down neutrons

76439043994. ✖ Speed up neutrons

76439043995. ✖ Scatter the neutrons

76439043996. ✖ Absorb the neutrons

Question Number : 200 Question Id : 76439011024 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Economiser is used to heat

Options :

76439043997. ✖ Flue gases

76439043998. ✖ Air

76439043999. ✔ Feed water

76439044000. ✖ Solid particles