HPCL

Previous Year Paper

Mechanical Engineer
04 Nov 2022 Shift 2

Adda247

Test Prime

ALL EXAMS, ONE SUBSCRIPTION

80,000+
Mock Tests

Personalised
Report Card

Unlimited
Re-Attempt

600+
Exam Covered

20,000+ Previous
Year Papers

500%
Refund

IBPS

NABARD

INDIAN RAILWAYS

ATTEMPT FREE MOCK NOW

HPCL-01st & 04th Nov 22

me	
ame	
	04/11/2022
	2:00 PM - 4:30 PM
	MECHANICAL ENGINEER

anguage

ost appropriate antonym of the given word.

s

ved

rful

ıant

Question ID : **8401605732**
Status : **Answered**
Chosen Option : **3**

ost appropriate option to fill in the blank.

Mahmud Gazni _____ an attack on the Somnath temple in order _____ at had gathered within the temple.

ıch ; stealing

h ; stole

hing ; steal

:hed ; to steal

Question ID : **8401605742**
Status : **Answered**
Chosen Option : **4**

ost appropriate option to fill in the blank.

_____ different from her mother.

ery

very

Question ID : **8401605747**
Status : **Answered**

ost appropriate meaning of the given idiom.

down

firm about something

ash an insect

ke great effort

into trouble

Question ID : 8401605737
Status : Answered
Chosen Option : 3

ost appropriate option to fill in the blank.

ip was _____ by the king's soldiers but the other one _____.

oped ; deserted

cted ; arived

ured ; escaped

cted ; broke

Question ID : 8401605741
Status : Answered
Chosen Option : 3

are four jumbled sentences. Select the option that gives their correct order
eaningful and coherent paragraph.

rice is ever found, it may be possible to retrieve the ancient sarcophagus.
Os, English military officer Howard Vyse explored the Giza pyramids.
to ship the sarcophagus to England in 1838 aboard the merchant ship
the ship sank during its journey and took the ornate sarcophagus down

e a number of discoveries at Giza, including an ornate sarcophagus found
s pyramid.

)

A

B

Question ID : 8401605740
Status : Answered
Chosen Option : 3

ost appropriate option to fill in the blank.

t week, they _____ in Canada.

been

e

ost appropriate option to fill in the blank.

quite prepared that day _____ the demolition of the Supertech Twin
)IDA.

Question ID : 8401605745
Status : Answered
Chosen Option : 3

ost appropriate synonym of the given word.

omical

olent

agant

gal

Question ID : 8401605735
Status : Answered
Chosen Option : 3

ost appropriate option to fill in the blank.

nurag is one year _____ than your brother Rohit.

t

Question ID : 8401605746
Status : Answered
Chosen Option : 3

ost appropriate meaning of the given idiom.

t

e from problems

ithout thinking

b an existing situation

a boat ride

Question ID : 8401605736

ıtion which is NOT an antonym of another word by way of adding the prefix

ıerable

ensive

ous

utable

Question ID : **8401605733**
Status : **Answered**
Chosen Option : **3**

ost appropriate option to fill in the blank.

ner homework yet; she cannot go out to play.

not finish

ot finish

ıot finished

finishing

Question ID : **8401605744**
Status : **Answered**
Chosen Option : **3**

rrect option to fill in the blanks.

ıistory, fantastic treasures from various cultures have been stolen or e missing.

iously

erously

riously

eriously

Question ID : **8401605738**
Status : **Answered**
Chosen Option : **4**

ost appropriate synonym of the given word.

t

ıle

ate

Question ID : **8401605734**
Status : **Answered**
Chosen Option : **4**

gment which has a spelling error in the given sentence. If there is no error, ror'.

Education Policy, 2020, is based on the foundational principals of access, y, affordability and accountability..

ess, equity, quality, affordability and accountability..

lational Education Policy, 2020

ror

sed on the foundational principals

Question ID : 8401605739
Status : Answered
Chosen Option : 3

tion that completes the given proverb correctly.

ll trades is master of none.

aker

k

g

kman

Question ID : 8401605748
Status : Answered
Chosen Option : 2

ve Aptitude

ar fraction of $0.\overline{32} + 0.2\overline{6} - 0.\overline{53}$ is:

Question ID : 8401605752
Status : Not Answered
Chosen Option : --

are drawn in succession from a box containing 10 red, 30 white, 20 blue
e marbles. Find the probability that the first drawn marble is red and the
n marble is white.

Question ID : **8401605777**
Status : **Answered**
Chosen Option : **2**

ength of tape to be used to measure a room's sides, whose distances are
1m 52 cm and 16m 20 cm is:

Question ID : **8401605751**
Status : **Answered**
Chosen Option : **2**

ns 25% profit on selling his goods at Rs.2,355. The cost price of the goods

88
348
384
184

Question ID : **8401605760**
Status : **Answered**
Chosen Option : **3**

a cube is $6\sqrt{3}$ ft. If 1 kg paint covers 12 sq ft, how much will it cost to paint the exterior of the cube if per kg is Rs.320?

760
570
706
507

Question ID : **8401605780**

ers are in the ratio 3 : 5 and their LCM is 45, then the sum of those numbers

Question ID : 8401605750
Status : Answered
Chosen Option : 4

salary of teaching and non-teaching staff at a college is in the ratio of 5 :
to contribute 3% and 2% of their salaries to a welfare society. If each non-
f member contributes Rs.390, then the teaching staff salary is:

,500

,050

,200

,020

Question ID : 8401605765
Status : Answered
Chosen Option : 2

train A is 100 m more than the length of a platform. What is the time taken
cross train B travelling in the opposite direction if the speed of train B is 70
speed of train A is 90 km/h and the time taken by train A and B to cross
tform is 24 seconds and 36 seconds, respectively?

conds

conds

conds

conds

Question ID : 8401605770
Status : Answered
Chosen Option : 2

between two stations, Mathura and Haridwar, is 356 km. Train ABC
ch is running at a speed of 72 km/h, leaves Mathura station at 10:50 p.m.
press, which is running at the speed of 82 km/h, leaves Haridwar station at
what time will ABC Express and XYZ Express meet each other?

.m.

.m.

a.m.

a.m.

Question ID : 8401605771
Status : Answered

d a faulty weighing machine and measured 950 g instead of 1 kg and
l his goods at cost price. His profit percentage is:

5

6

%

6

Question ID : 8401605761
Status : Answered
Chosen Option : 2

installment will discharge a debt of Rs.1,431 due in three years at 6%
st?

45

50

50

50

Question ID : 8401605767
Status : Answered
Chosen Option : 4

am are working in an IT company with salaries of Rs.23,500 and Rs.32,500,
The chairman of the company wishes to give increments of 6%
e to their salaries. Their new salaries will be in the ratio of:

Question ID : 8401605766
Status : Answered
Chosen Option : 2

is two-fifth of B's income. The expenditure of A is 50% of B's
and the income, expenditures of B are Rs. 48250, 28% of the income of A,
Then the savings of A is:

,598

,985

,589

,895

shows the increase in weight of a boy over the given years. Study the given chart and answer the
lows.

entage change in weight of the boy from 2018 to 2019?

Question ID : **8401605772**
Status : **Answered**
Chosen Option : **2**

face area of a right circular cylinder is 3696 cm^2 and the circumference of its base is 88 cm, then find

56 cm^3

372 cm^3

18 cm^3

24 cm^3

Question ID : **8401605781**
Status : **Answered**
Chosen Option : **2**

must water be mixed with milk to gain 20% by selling the mixture at cost

Question ID : **8401605755**
Status : **Answered**
Chosen Option : **1**

A and B take average wickets of 28 and 34 in a series of 8 and 12
pectively. If they took 5 wickets in the 9th match and 1 wicket in the 13th
the average number of wickets of both the bowlers is:

Question ID : **8401605754**
Status : **Answered**
Chosen Option : **1**

alary was increased by 8% in the first year and then increased by 9% in the
the third year, he earned Rs.2,536 for working overtime. If his initial salary
)0, his total salary drawn in the third year is:

,975

),795

,579

,979

Question ID : **8401605757**
Status : **Answered**
Chosen Option : **2**

risation of the equation $2x^2 + 7x + 6 = 0$ is:

$-3)(x+2)=0$

$+3)(x+2)=0$

$+3)(x-2)=0$

$-3)(x-2)=0$

Question ID : **8401605779**
Status : **Answered**
Chosen Option : **2**

of the percentage $16\frac{2}{3}\%$ is:

Adda247 GET IT ON Google Play

e trains travelling from Delhi to Ahmedabad at speeds of 45 km/h, 55 km/h in 3 hours, 2 hours and 1 hour, respectively. Their average speed is:

/h

/h

/h

/h

Question ID : **8401605769**
Status : **Answered**
Chosen Option : **2**

the following three schemes running for products in his store. Which of the maximum discount percentage?

ssive discounts of 15% and 20%

3

6

and III

III

I

Question ID : **8401605764**
Status : **Answered**
Chosen Option : **1**

e of $\sqrt{14+2\sqrt{45}}$ is:

$+\sqrt{5}$

$\sqrt{5}$

$-\sqrt{5}$

$\sqrt{5}$

Question ID : **8401605749**
Status : **Answered**
Chosen Option : **3**

circular field is 3850 m^2, then the cost of fencing it at the rate of Rs.52 per metre is:

440

230

220

560

Question ID : **8401605782**

of 5-digit numbers that can be formed by the digits 2, 2, 3, 3 and 4 is:

Question ID : 8401605774
Status : Answered
Chosen Option : 2

o number in the ration 5 : 3. If the difference between the two numbers is
arger number.

Question ID : 8401605776
Status : Answered
Chosen Option : 1

ser sells bananas and apples at a gain of 20% on bananas and at a loss of
s. If the cost price of both fruits is Rs.5,000 and he earned 6% on the
he cost price of bananas is:

200

300

320

500

Question ID : 8401605759
Status : Answered
Chosen Option : 1

ies to attend a party 150 km away from their home. They travel at an
ed of 50 km/h and return at a speed of 75 km/h. Their average speed for
urney is:

n/h

n/h

n/h

n/h

Question ID : 8401605753
Status : Answered
Chosen Option : 1

he nature of the roots of $3x^2 - 6x + 5 = 0$?

oots are real and more than 2.

oots are real and distinct.

ots are real and equal.

e are no real roots.

Question ID : **8401605778**
Status : **Answered**
Chosen Option : **3**

instalment will discharge a debt of Rs.16550 due in three years at 10% terest annually?

556

665

,655

566

Question ID : **8401605768**
Status : **Answered**
Chosen Option : **2**

le accessory costs Rs.5,825. A customer requested a discount of 18%, in e discount of 5% already offered by the merchant. The cost of the ter these discounts will be:

547.675

536.675

,537.675

637.675

Question ID : **8401605763**
Status : **Answered**
Chosen Option : **2**

narked his goods at 20% above the cost price and offered a discount of oor results, he again offered 8% discount and noticed a growth in his ofit will be:

%

%

6

6

Question ID : **8401605762**
Status : **Answered**
Chosen Option : **2**

o, a man is six times as old as his daughter. Three years hence, thrice his
qual to five times of his daughter’ s age. The present age of his daughter

ars

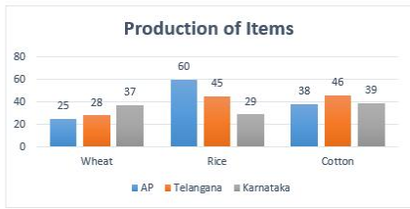
ars

ars

ars

Question ID : 8401605775
Status : Answered
Chosen Option : 1

hart and answer the question that follows.



ween the difference of rice in AP and Telangana to that of the difference of wheat in Karnataka and AP.

Question ID : 8401605773
Status : Answered
Chosen Option : 2

al Potential Test

ng series of alphabet identify the letter pattern and fill the blank in the

ST, WDE, ……..

Question ID : 8401605797
Status : Answered
Chosen Option : 2

ing by facing East and took a turn of 90 degree in the anti-clockwise
l then he turns another 180 degrees in the same direction and then 90
clockwise direction. Find which direction Amit is facing now ?

Question ID : **8401605801**
Status : **Answered**
Chosen Option : **1**

TAN::ACTION::?

CT

ON

CE

CA

Question ID : **8401605807**
Status : **Answered**
Chosen Option : **4**

owing words and arrange their numbers by observing a pattern.

lult 3. Child 4. Elder 5. Teenager

5,1

5,2

1,2

2,4

Question ID : **8401605796**
Status : **Answered**
Chosen Option : **4**

its: $B \leq C < A \geq D, E > F \geq D$

ons: I. $E \geq A$ II. $F \leq C$ III. $A > B$ IV. $E \geq B$

ne of the above conclusions is correct?

II is true

II and IV are true

and IV are true

I, III and IV are true

Question ID : **8401605790**
Status : **Answered**

mber of people are sitting in a row by facing the North direction. R is sitting
ends and there are two people between R and Q. Equal number of
sitting between U and R and U and S. Two persons are sitting between S
number of persons are sitting to the right and left side of V. T is sitting
middle of P and S. U is third to the left of Q who is sitting fourth from one
ne ends of the row. P is sitting at one of the extreme ends of the row. U is
any of the extreme ends of the row. Number of people sitting between P
e.

g between U and S?

Question ID : 8401605788
Status : Answered
Chosen Option : 3

owing numbers carefully and answer the questions as per direction given
mber series:

268 245

s are to be arranged in increasing order from left to right within the
n what will be the difference between the highest number and the lowest
obtained?

Question ID : 8401605793
Status : Answered
Chosen Option : 2

question, pairs of words are given in which the words of any three pairs
non relationship. Choose the pair of words which does not have that

Water

Road

Captain

Railway Track

Question ID : 8401605809
Status : Answered
Chosen Option : 3

question, set of pairs of alphabets are given out of which three pairs have a
ationship. Choose the pair of which does not have that same relationship.

XW

QRW

DBU

JRW

Question ID : **8401605810**
Status : **Answered**
Chosen Option : **4**

gives the details of sales of different items sold by three different stores run by three women. Please
refully and answer the question given at the end of table.

ambika tores	Mahi ma Stores	Rohini Stores
12	234	453
31	211	342
56	765	889
109	2306	3212

ce of highest and lowest sale of coffee Mugs.

Question ID : **8401605813**
Status : **Answered**
Chosen Option : **4**

ards a woman, Sumit told to Garima that she is mother of only daughter of
it is relationship between the pointed woman and Sumit?

er-in-law

hter-in-law

er

Question ID : **8401605805**
Status : **Answered**
Chosen Option : **2**

gives the details of sales of different items sold by three different stores run by three women. Please refully and answer the question given at the end of table.

ıbika tores	Mahi ma Stores	Rohini Stores
12	234	453
31	211	342
56	765	889
109	2306	3212

mber of Mobile Phones sold by all the three Stores.

Question ID : **8401605815**
Status : **Answered**
Chosen Option : **3**

gives the details of sales of different items sold by three different stores run by three women. Please refully and answer the question given at the end of table.

ıbika tores	Mahi ma Stores	Rohini Stores
12	234	453
31	211	342
56	765	889
109	2306	3212

ıce of total number of Calculators sold by all the Rohini and Ambika Stores.

Question ID : **8401605816**
Status : **Answered**
Chosen Option : **2**

F, G & H are eight friends sitting around a circular table by facing the
girls are sitting between A and D. A is sitting second to the left of B. H is
diate of B. F is sitting at the immediate left of C. D is not an immediate
either F or E.

at the immediate right of C?

Mohit that the boy Golu who is playing in the ground is the younger among
ers of the daughter of my father's wife. What is relationship between the
n the ground with Anuj?

r

dfather

ıer

Question ID : 8401605804
Status : Answered
Chosen Option : 2

ies: 8, 13, 11, 16, 14, 19, ... carefully and suggest the number that should

Question ID : 8401605795
Status : Answered
Chosen Option : 4

g assembly of a school, in the single line of ninth class, Madan is standing
from both the ends of line. How many students are there in the line?

Question ID : 8401605785
Status : Answered
Chosen Option : 3

en Venn diagram rectangle represents teachers, triangle artists and circle sports persons. Give the
rea represented by the all the three.

: $T = U \leq S < Q = P > R$

ns: 1) $T > R$ 2) $P > T$ 3) $P < U$ 4) $R > S$

e of the above conclusions is correct?

4

2 & 4

2

Question ID : **8401605791**
Status : **Answered**
Chosen Option : **2**

n MOHAN is coded as 13158114 and ROHIT is coded as 18158920 the what
de for ANUJ?

0

10

11

10

Question ID : **8401605799**
Status : **Answered**
Chosen Option : **2**

subtraction, '÷' means addition, '-' means multiplication and '×'
on, then which of the following equation is correct?

28 - 4 × 12 = 108

24 × 68 − 24 = 204

88 − 24 + 20 = 92

38 − 10 + 50 = 846

Question ID : **8401605812**
Status : **Answered**
Chosen Option : **2**

f L and A is Mother of B and also L is father of K then what is relation of A

er

dmother

hter

Question ID : **8401605806**
Status : **Answered**
Chosen Option : **2**

ır 'x', x stands for '+', − stands for '÷' and ÷ stands for '−', then
4 + 12 − 6 ÷ 2= ?

Question ID : 8401605811
Status : Answered
Chosen Option : 2

Ashish and Mohit start moving in the opposite direction on a main road and
) meters apart from each other. Ashish walks for 250 meters on the main
es a right turn and then walks for another 150 meters. Then he turns left
r another 250 meters and then turns in the direction to reach back to the
leanwhile, Mohit could walk only 350 meters on the main road. What is the
ween both of them at this point?

Question ID : 8401605802
Status : Answered
Chosen Option : 2

its: $P = Q \geq R = S, T > U \geq V = S$

ons: I. $U \geq P$ II. $P \geq V$ III. $T \geq Q$ IV. $T > R$

ne of the above conclusions is correct?

and III are true

II and IV are true

I, III and IV are true

I is true

Question ID : 8401605792
Status : Answered
Chosen Option : 1

wards a photograph of a male child, Rohit told to Amit that the child in the
s the son of the only son of my mother. How is Rohit related to the male
hotograph?

Adda247 GET IT ON Google Play

ded as 6821, THAT is coded as 7387 and PUT is coded as 457, what will be RAT?

Question ID : 8401605798
Status : Answered
Chosen Option : 3

e East of Mohan which is in the North of Sushil. If Punit is in the South of n which direction of Rohit, is Punit?

ı-West

-West

-East

ı-East

Question ID : 8401605800
Status : Answered
Chosen Option : 3

fore yesterday was Friday, when will Tuesday be?

lays after tomorrow

after tomorrow

/

rrow

Question ID : 8401605786
Status : Answered
Chosen Option : 4

ven boxes named Mega, Meta, Rita, Docu, Gimu, Tina, Pina and Lopu of urs, like; Black, Violet, Red, Blue, Yellow, White and Green but not n the same order. Only two boxes are kept between yellow colour box and hich is kept above yellow colour box. Box Docu is not of green colour. box is kept above violet colour box. Neither Box Rita nor Box Gimu is of Box Gimu is kept above box Tina. There are two boxes between box e box which is Green in colour. Box Rita is kept either immediately above ly below green colour box. More than two boxes are kept between Box box which is of red colour, which is neither kept at the top nor at the Mega is not of red colour. Only one box is kept between red colour box e colour box. Box Mega and box Gimu is not of white colour. Box Meta is of nd is not kept at the top and not at the bottom.

kept immediately on the top of Box Docu?

a

Adda247 GET IT ON Google Play

question sets of alphabets are given as options and these sets shares a
ilarity, whereas one is different. Choose the odd one out.

Question ID : 8401605808
Status : Answered
Chosen Option : 3

gives the details of sales of different items sold by three different stores run by three women. Please
refully and answer the question given at the end of table.

Ambika Stores	Mahima Stores	Rohini Stores
312	234	453
231	211	342
456	765	889
2109	2306	3212

ce of total number of all the items sold by the Rohini and Ambika Stores. Mugs.

Question ID : 8401605814
Status : Answered
Chosen Option : 1

han, Vaishali, Mohit, Nitin, Pallavi, Jyoti, Preeti and Sonu are nine friends
sitting around a circular table by facing the centre of the table. Mohit is
d to the right of Pallavi. Only two people are sitting between Mohit and
people are sitting between Nitin and Amar. Neither Preeti nor Nitin are an
eighbor of Vaishali or Mohit. Only one person is sitting between Vaishali
eeti is an immediate neighbor of Nitin. Amar sits third to the left of Jyoti.
econd to the right of Beerbhan.

on the immediate left of Vaishali?

Question ID : 8401605783
Status : Answered
Chosen Option : 2

:orrect alternative from the given options which will continue the same
eplace the question mark in the given number series.

'7, ·····.?

58

33

30

34

Question ID : **8401605794**
Status : **Answered**
Chosen Option : **2**

:nowledge

ling force equation of a spring-controlled governor is given by F = p . r + q
ıe radius of rotation of governor balls), then the governor is:

sitive

e

ble

ronous

Question ID : **8401605833**
Status : **Answered**
Chosen Option : **3**

S1 and S2, with mean diameters of 90 mm and 75 mm, respectively, are
wo equal lengths of hardened steel wires of the same diameter. The ratio
ss of S1 to that of S2 is:

16

5

25

6

Question ID : **8401605849**
Status : **Answered**
Chosen Option : **3**

maximum value of swaying couple is achieved when θ is:

nd 225°

nd 270°

d 180°

nd 135°

Question ID : **8401605835**
Status : **Answered**

ergy reservoir at 1200 K supplies 500 kJ of heat to a reversible heat engine
rejects heat Q2 to a reversible heat engine E2 at temperature T2. Engine
at to a thermal energy reservoir at temperature 300 K. If the efficiency of
ines is the same, then T1 : T2 : T3 is:

1.414

: 1

0.5

.14 : 1

Question ID : **8401605875**
Status : **Answered**
Chosen Option : **3**

---

the metal parts are joined by means of a fusible alloy which is composed

and Tin

and Copper

ıd Aluminium

er and Tin

Question ID : **8401605892**
Status : **Answered**
Chosen Option : **1**

---

kg is moving on a straight level road with the speed of 10 m/s when the
urn from green to amber. The driver applies the breaks 20 m before the
t manages to stop on the line. The force applied to stop the car is:

N

N

N

N

Question ID : **8401605820**
Status : **Answered**
Chosen Option : **3**

---

e arrival rate in a queue is 13/hr and the average service rate is 20/hr, then
number of customers in the line (including the customer being served) will

Question ID : **8401605898**
Status : **Answered**
Chosen Option : **3**

Adda247 GET IT ON Google Play

ım is placed in two arrangements:

le horizontal, and
gonal horizontal.

tress, the beam in arrangement _____.

41.4% more stronger than in (i)

57.3% more stronger than in (i)

arrangements have equal strength

41.4% more stronger than in (ii)

Question ID : 8401605821
Status : Answered
Chosen Option : 1

l values of critical compressibility factor (Zc) for most gases fall in a narrow

0.2

o 0.1

› 0.3

1.0

Question ID : 8401605874
Status : Answered
Chosen Option : 2

following mechanisms converts rotary motion to sliding motion?

:al trammel

vorth mechanism

:h yoke mechanism

va mechanism

Question ID : 8401605828
Status : Answered
Chosen Option : 2

following statements regarding heat treatment processes:

is a process of annealing bainite at low temperatures.
ɔol guideways are hardened by flame hardenings
full annealing is to reduce ductility and resilience.
s of lathe beds are hardened by carburising.

given statements are INCORRECT?

ıd 4

nd 4

ıd 3

nd 4

floats at the interface of mercury of specific gravity of 13.6 and water such that 40% of its volume is
ercury and 60% in water. The density (kg/m^3) of the metallic body is approximately _____.

Question ID : 8401605860
Status : Answered
Chosen Option : 3

n equilibrium under the action of three forces, then each force is
to the sine of the angle between the other two forces." This statement is

is Law

al' s Law

's Theorem

mbert's Principle

Question ID : 8401605819
Status : Answered
Chosen Option : 3

following statements about Wein' s displacement law:

spectral emissive power is displaced to longer wavelengths with increase
re.
spectral emissive power increases with decrease in temperature.
spectral emissive power is displaced to shorter wavelengths with increase
re.
spectral emissive power decreases with decrease in temperature.

given statements are correct?

4

2

3

3

Question ID : 8401605869
Status : Answered
Chosen Option : 1

e that ranges from 50 kN in compression to 150 kN in tension is applied at
a forged steel rod with a uniform diameter of 30 mm. Assume that the
a tensile, yield and endurance strength of 600, 420 and 240 MPa,
In accordance with Soderberg's criterion, the factor of safety is:

t capacity analysis is valid for bodies for which the value of _____.

> 0.1

< 0.1

< 0.1

< 1

Question ID : 8401605864
Status : Answered
Chosen Option : 2

following statements is correct regarding the term 'Reduced Pressure'?

presented by the ordinate (Y axis) of generalised compressibility chart.

ıe difference between the critical pressure and the existing pressure of a

ıe ratio of the existing pressure to the critical pressure of a substance.

it is MPa.

Question ID : 8401605872
Status : Answered
Chosen Option : 4

bar stays' of a boiler are pitched at 0.35 m horizontally and vertically. The steam pressure is 10 bar. If of the material is 60 N/mm^2, then the core diameter will be close to:

n

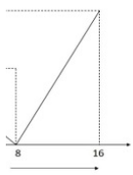
n

n

n

Question ID : 8401605843
Status : Answered
Chosen Option : 1

time diagram of motion of a particle is shown in the given figure. If the initial velocity of the particle displacement of the particle till the end of 16^{th} second is:



m

53 m

0 m

5 m

inertia, rotational kinetic energy, and angular momentum is given by M, K,

: 2LM

: $\sqrt{(2MK)}$

= K/L

MK

Question ID : 8401605901
Status : Answered
Chosen Option : 1

locity in a horizontal pipe with a 30 mm diameter is measured using a
r with a 15 mm throat diameter. When frictional losses are neglected and
difference between the pipe and the throat sections is 20 kPa, the flow

n/s

m/s

/s

n/s

Question ID : 8401605858
Status : Answered
Chosen Option : 2

s both its ends fixed, and column B has one end fixed and the other end
o of the buckling load of column A to that of column B is:

Question ID : 8401605822
Status : Answered
Chosen Option : 2

vernor is a/an _____ governor.

ılum type

a type

g-loaded type

weight type

Question ID : 8401605832
Status : Answered
Chosen Option : 3

following statements regarding limit gauges:

e is used to check hole size.
e is used to measure the external diameter of a shaft.
nd plug gauges are available in two designs, 'GO' and 'NO-GO'.

given statements are correct?

3

nd 3

3

2

Question ID : 8401605894
Status : Answered
Chosen Option : 4

n permissible twisting moment in a circular shaft, according to the
ear stress theory of failure, is 'T'. According to the maximum principal
of failure, the permissible twisting moment for the same shaft is:

T

Question ID : 8401605848
Status : Answered
Chosen Option : 2

following statements regarding Heisler Chart:

art is used to determine temperature distribution and transient heat flow

art is used to determine temperature distribution and steady heat flow rate.
art is used when conduction and convection resistances are almost of
ance.
art is used when conduction resistance is higher than convection

given statements are correct?

3

3

4

nd 4

Question ID : 8401605863
Status : Answered
Chosen Option : 3

r sluice gate is installed on the vertical wall of a lock. If the vertical side of
etres and its centroid is 'p' metres below the water surface, then the depth
s:

$(d^2/12p)$

$(d^2/6p)$

(d^2/p)

$(3d^2/4p)$

Question ID : 8401605852
Status : Answered
Chosen Option : 1

following statements regarding project management:

obabilistic and CPM is deterministic.
etwork slack on various events is calculated, whereas in CPM, floats are

ctivity duration is normally distributed and project duration is beta

l path of a network is the path that takes the shortest time.

given statements are INCORRECT?

2

nd 4

l 4

3

Question ID : 8401605899
Status : Answered
Chosen Option : 3

eration number is mathematically expressed as:

$\frac{1}{}$

$\frac{n}{p}$

$\frac{-Cv)\,\dot{m}}{gen}$

$\frac{\dot{n}}{n}$

Question ID : 8401605876
Status : Answered
Chosen Option : 2

following statements regarding the effect of alloying elements in steel:

mproves machinability in free cutting steel
ım - Forms abrasion resisting particles
ous - Improves Corrosion resistance
- Increases fatigue strength

given statements are INCORRECT?

4

3

4

2

Question ID : 8401605886
Status : Answered
Chosen Option : 1

s system consists of a mass of 5 kg and two springs of stiffness 8 N/mm
ı. The system is arranged in different manners, that is:

s suspended at the bottom of two springs in series, and
is fixed between two springs.

ıatural frequencies of case (ii) to those of case (i) is approximately
-.

Question ID : 8401605840
Status : Answered
Chosen Option : 3

following is the correct order of cooling media for increasing cooling rate?

, Air, Fused salt and Oil

used salt, Oil and Water

ısed salt, Air and Water

l salt, Oil, Water and Air

Question ID : 8401605879
Status : Answered
Chosen Option : 2

ne estimates of a PERT activity, i.e. optimistic time, pessimistic time and
ne, are 7 min, 13 min and 9 min, respectively. The expected time (in
l the variance of the activity will be:

and 1.5

and 1.5

following statements regarding the stress strain diagram:

aw is followed up to the elastic limit.
at which a material elongates without an increase in load is called as yield

s is usually represented by the area under a stress strain curve.

given statements are correct?

3

l

2

l 3

Question ID : 8401605884
Status : Answered
Chosen Option : 1

meter 100 mm is suddenly enlarged to a diameter of 200 mm. If the flow
is 200 litres/s, then the loss of head is:

n of water

n of water

m of water

n of water

Question ID : 8401605856
Status : Answered
Chosen Option : 3

following statements is correct?

nd Fe-Fe3C diagrams are both non-equilibrium diagrams.

iagram is an equilibrium diagram, but Fe-Fe3C diagram is a non-
iagram.

nd Fe-Fe3C diagrams are both equilibrium diagrams.

liagram is a non-equilibrium diagram, but Fe-Fe3C diagram is an
iagram.

Question ID : 8401605883
Status : Answered
Chosen Option : 2

ergy is transferred from a heat reservoir at 1050 K to a heat reservoir at 550
nt temperature is 310 K. The loss of available energy due to heat transfer

kJ

kJ

3 kJ

kJ

ystem having a mass of 30 kg is supported by 4 springs, each having a
. The system runs at 420 rpm. If only 10% of the shaking force is allowed to
ed to the supporting structure, then the value of stiffness k will be close to:

l/mm

N/mm

N/mm

N/mm

Question ID : 8401605837
Status : Answered
Chosen Option : 3

following heat exchangers gives parallel and linear temperature profile for
d hot fluid?

el flow with unequal heat capacities

ter flow with equal heat capacities

lel flow with equal heat capacities

ed flow with unequal heat capacities

Question ID : 8401605865
Status : Answered
Chosen Option : 4

flow heat exchanger, if the hot and cold fluids enter at T1 and T2,
whereas cold fluid leaves at T3 and hot fluid leaves at T4, then LMTD is

$$\frac{-T_3)-(T_2-T_4)}{\ln\frac{(T_1-T_3)}{(T_2-T_4)}}$$

$$\frac{-T_2)+(T_3-T_4)}{\ln\frac{(T_1-T_2)}{(T_3-T_4)}}$$

$$\frac{-T_2)-(T_3-T_4)}{\ln\frac{(T_1-T_2)}{(T_3-T_4)}}$$

$$\frac{-T_3)-(T_4-T_2)}{\ln\frac{(T_1-T_3)}{(T_4-T_2)}}$$

Question ID : 8401605866
Status : Answered
Chosen Option : 3

following statements about the thermal diffusivity of a substance:

/ proportional to density.
ely proportional to specific heat.
ely proportional to thermal conductivity.
y proportional to thermal conductivity.
given statements are INCORRECT?

ıd 3

3

2

3

Question ID : 8401605861
Status : Answered
Chosen Option : 3

ank mechanism, the velocity of piston becomes maximum when:

ank is at an angle of 120° with the line of stroke

rank is perpendicular to the line of stroke of the piston

ank and the connecting rod are mutually perpendicular

ank and the connecting rod are in line with each other

Question ID : 8401605829
Status : Answered
Chosen Option : 2

ısional fluid element rotates like a rigid body, and at a point within the
pressure is 1 unit. What is the radius of Mohr's circle, characterising the
s at that point?

ıit

t

s

Question ID : 8401605823
Status : Answered
Chosen Option : 2

following statements regarding linear programming:

ɔgramming problem with three variables and two constraints cannot be
ɛ graphical method.
VI method, when the artificial variable leaves the basis, its column can be
the subsequent tables.
constraints line comes parallel to the objective function line, LPP will have
ɛ solution.

given statements are correct?

3

2

3

ɲd 3

Question ID : **8401605896**
Status : **Answered**
Chosen Option : **2**

city components in the x and y directions are given by:

$\times (y^2) - (x^2) \times y$ and $v = x \times (y^2) - \frac{2}{3} \times (y^3)$

ɪtinuous flow, the value of λ is:

Question ID : **8401605853**
Status : **Answered**
Chosen Option : **1**

ary layer, the flow is:

id and rotational

us and rotational

ɹs and irrotational

id and irrotational

Question ID : **8401605855**
Status : **Answered**
Chosen Option : **2**

ement is subjected to the following bi-axial state of stress:

σy = 30 MPa; τxy = 40 MPa.

rength of the material is 100 MPa, then the factor of safety as per Tresca's theory is:

Question ID : 8401605847
Status : Answered
Chosen Option : 2

tum correction factor' for a laminar flow through a circular pipe is:

Question ID : 8401605854
Status : Answered
Chosen Option : 2

following components can be made by powder metallurgy technique?

aring

ades

and 2

nd 4

nd 3

nd 4

Question ID : 8401605891
Status : Answered
Chosen Option : 3

Adda247 GET IT ON Google Play

emand of a product in a company is 79 units. Previous forecast and
smoothening factor are 84 units and 0.25, respectively. What will be the
he product units) for the next period?

Question ID : 8401605895
Status : Answered
Chosen Option : 3

ccupied cells must a transportation matrix with 8 rows and 7 columns have
ES NOT degenerate?

Question ID : 8401605897
Status : Answered
Chosen Option : 2

following are the features of submerged arc welding?

ng speeds
tion hazard
sition rate
ty of Weld

nd 4

nd 4

nd 3

l and 3

Question ID : 8401605893
Status : Answered
Chosen Option : 1

following processes are irreversible?

nsion
f electricity through a resistor
fer through a finite temperature difference
l expansion in a Stirling cycle
wo ideal gases at constant pressure

and 5

and 4

and 5

el has 40 teeth and a pitch diameter of 240 mm. If the pressure angle of
20°, then the axial pitch of the worm will be close to:

mm

n

n

mm

Question ID : 8401605831
Status : Answered
Chosen Option : 3

s, the 'loss of head' term is incorporated in Bernoulli's equation. This
iated with fluid's _____.

ressibility

erature

sity

ce tension

Question ID : 8401605857
Status : Answered
Chosen Option : 3

e rolled from a thickness of 36 mm to 20 mm using a two-high mill having
eter 400 mm. The approximate value of the coefficient of friction for
will be:

Question ID : 8401605890
Status : Answered
Chosen Option : 1

equation pv = ZRT, depending on the values of temperature and pressure
is, the value of Z _____.

d always be greater than unity

be less than, greater than or equal to unity

d always be equal to unity

d always be less than unity

Question ID : 8401605871
Status : Answered
Chosen Option : 2

following is NOT a pure substance?

re of air (gas phase) and liquid air

ustion product of a fuel

spheric air

urs of ammonia

Question ID : **8401605870**
Status : **Answered**
Chosen Option : **2**

s used to measure:

strength

ct strength

ng strength

e strength

Question ID : **8401605825**
Status : **Answered**
Chosen Option : **2**

following statements about contact ratio is correct?

addendum and base circle diameter have influence on contact ratio.

ndum has no effect on contact ratio.

asing the addendum results in a higher value of contact ratio.

easing the addendum results in a higher value of contact ratio.

Question ID : **8401605830**
Status : **Answered**
Chosen Option : **3**

ong fin, if the parameter $m = \sqrt{\frac{hP}{kA}}$ increases, the other parameters being maintained constant, then

mperature drop along the length will be steeper

mperature profile will remain the same

mperature drop along the length will be at a low rate

he heat flow rate will be increased without any effect on the temperature

Question ID : **8401605862**
Status : **Answered**
Chosen Option : **4**

Adda247 GET IT ON Google Play

lrop of molten metal of radius 3 mm was found to solidify in 12 seconds. A
of radius 7 mm would solidify in:

seconds

conds

seconds

seconds

Question ID : 8401605889
Status : Answered
Chosen Option : 2

eness method for the analysis of heat exchanger is used when:

temperatures of both fluids are known but inlet temperatures are unknown

emperatures of both fluids are known but outlet temperatures are

temperatures of any one fluid is known

emperatures of any one fluid is known

Question ID : 8401605867
Status : Answered
Chosen Option : 1

niform shaft of length L fixed at its upper end and carrying a disc of
nertia I at its lower end. The disc is twisted about the vertical axis and
is the natural frequency of the system when the shaft is assumed as
d 'fb' is the natural frequency of the system when the shaft is considered
moment of inertia as that of the disc. Find the ratio fa/fb.

1/3)

3/4)

Question ID : 8401605841
Status : Answered
Chosen Option : 4

ne following processes is the Widmanstatten structure encountered?

ering

ing

ding

aling

Question ID : 8401605881
Status : Answered
Chosen Option : 2

following statements about determining the natural frequency of a shaft
eral loads. Identify the correct option.

erley's method is semi-empirical and simple.

erley's method provides accurate results.

nergy method involves fewer calculations in comparison to Dunkerley's

nergy method provides approximate results.

Question ID : 8401605839
Status : Answered
Chosen Option : 2

following regarding crystal structure:

bic - Manganese
tred Cubic - Copper
tred Cubic - Alpha Iron at room temperature
l Close Packed - Zinc

above matches are correct?

3

4

4

2

Question ID : 8401605887
Status : Answered
Chosen Option : 2

aves like an ideal gas when:

ure approaches 100 kPa and temperature approaches infinity

sure approaches zero and temperature approaches infinite

pressure and temperature approach infinite

ure approaches infinite and temperature approaches 300 K

Question ID : 8401605873
Status : Answered
Chosen Option : 2

void seizure in hydrodynamic bearings, the operating value of the bearing
c number should be at least ____ times the bearing modulus.

Question ID : 8401605846

g is characterised by a basic static capacity of 12000 N and a dynamic
7000 N. This bearing is subjected to an equivalent static load of 5000 N.
oading ratio and life in million revolutions, respectively, are:

nd 54.87

ıd 13.82

nd 39.30

and 34.96

Question ID : 8401605844
Status : Answered
Chosen Option : 2

l mass of 10 kg completes 40 oscillations in 20 seconds in a single-degree
ating system. The stiffness of the spring is approximately _____.

N/mm

l/mm

N/mm

N/mm

Question ID : 8401605838
Status : Answered
Chosen Option : 4

following phases of steel is NOT present in the Fe-Fe3C phase diagram?

e

entite

nite

ensite

Question ID : 8401605882
Status : Answered
Chosen Option : 1

ach of diameter 5 cm and 15 cm, are used to drain water from a reservoir.
al head losses in both pipes are equal, then the ratio of discharge through
e to that through the smaller pipe will be:

$\frac{1}{3}$

$\frac{1}{3}$

Question ID : 8401605859
Status : Answered
Chosen Option : 4

Adda247 GET IT ON Google Play

ree of freedom viscous damped system, if the frequency ratio is greater than √2, it implies that:

nsmitted force is more than the exciting force

ansmitted force is equal to the exciting force

ansmitted force is less than the exciting force

ansmitted force is infinite

Question ID : 8401605836
Status : Answered
Chosen Option : 1

speed of a rotating shaft depends on its _____.

and stiffness

, stiffness and eccentricity

and eccentricity

stiffness

Question ID : 8401605842
Status : Answered
Chosen Option : 2

following patterns is used for a casting where some portions of the tructurally weak and likely to break by the force of ramming?

v board pattern

ton pattern

l pattern

e piece pattern

Question ID : 8401605888
Status : Answered
Chosen Option : 2

ed at an angle of 60° with the horizontal. If the horizontal range is 2 km, then the velocity of projection _____.

/s

n/s

n/s

n/s

Question ID : 8401605818
Status : Answered
Chosen Option : 2

uring having clearance to radius ratio of 1/100, using a lubricant with absolute viscosity $\mu = 28 \times 10^{-3}$
shaft journal running at N = 2400 rpm. If the bearing pressure is 1.4 MPa, then the Somerfield number

3

10^{-3}

3×10^{-6}

10^{-5}

Question ID : 8401605845
Status : Answered
Chosen Option : 4

medium between the heat source and the receiver is NOT affected during
of heat transmission by _____.

ction

uction as well as convection

uction

tion

Question ID : 8401605868
Status : Answered
Chosen Option : 1

opropriate follower motion plan for high-speed engines is:

idal

m velocity

m acceleration and deceleration

e harmonic motion

Question ID : 8401605834
Status : Answered
Chosen Option : 1

following hardness tests is best suitable for brittle materials such as

hardness test

p hardness test

rs hardness test

well hardness test

Question ID : 8401605826
Status : Answered
Chosen Option : 2

ıtre of buoyancy, G is the centre of gravity and M is the metacentre of a
', then the body will be in stable equilibrium if _____.

)

0

)elow G

ıbove G

Question ID : 8401605851
Status : Answered
Chosen Option : 4

of instantaneous centres with 5 links is:

Question ID : 8401605827
Status : Answered
Chosen Option : 1

following is the property of a material by virtue of which strain increases
:onstant load?

)ing

:ity

ability

ng

Question ID : 8401605885
Status : Answered
Chosen Option : 1

)f 50 mm × 50 mm section is subjected to a tensile load of 400 kN. The
: a 200 mm gauge length is found to be 0.2 mm, and the decrease in
).012 mm. The value of Poisson's ratio is:

Question ID : 8401605824
Status : Answered
Chosen Option : 1