Directions of Test

Test Name	LPU CA PEA 305 - 02 (A)	Total Questions	30	Total Time	40 Mins

Section Name	No. of Questions	Marks per Question	Negative Marking
Paper 1	15	1	1/4
Paper 2	15	1	1/4

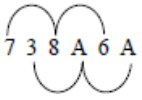
Section : Paper 1

QNo:- 1 ,Correct Answer:- *B*

Explanation:-
If we divide 15 by 14, we will get remainder 1. Thus, any power of 15 when divided by 14 will always give remainder 1.

QNo:- 2 ,Correct Answer:- *C*

Explanation:-



Here, the difference of (3+A+A) i.e. (2A + 3) and (7+8+6) i.e 21should be divisible by 11.
So, 2A + 3 - 21 = 2A -18
Check for all the given options, we get
Option 1 is 6 i.e. 2 × 6 - 18 = -6, not divisible by 11
Option 2 is 3 i.e. 2 × 3 - 18 = -12, not divisible by 11
Option 3 is 9 i.e. 2 × 9 - 18 = 0, divisible by 11
Thus, answer is option C

QNo:- 3 ,Correct Answer:- *B*

Explanation:-
When 351 is divided by 7, the remainder is 1.
When 352 is divided by 7, the remainder is 2.
Let us look at answer choice (1), n = 2
When 351^2 is divided by 7, the remainder will be 1^2 = 1.
When 352^2 is divided by 7, the remainder will be 2^2 = 4.
So when n = 2, the remainders are different.
When n = 3,
When 351^3 is divided by 7, the remainder will be 1^3 = 1.
When 352^3 is divided by 7, the remainder will be 2^3 = 8.
As 8 is greater than 7, divide 8 again by 7, the new remainder is 1.
So when n = 3, both 351^n and 352^n will have the same remainder when divided by 7.

QNo:- 4 ,Correct Answer:- C

Explanation:-
Cyclicity for unit place of 3 is 4.
So, $\frac{43^{43}}{4} = \frac{(-1)^{43}}{4} = -1 + 4 = 3$
so remainder is 3
So, ans. is unit digit of $3^3 = 7$

QNo:- 5 ,Correct Answer:- C

Explanation:-
Let $27000001 = 27000000 + 1 = (300)^3 + 1$
$= (300+1)(300^2 - 300 + 1)$ [using $a^3 + b^3 = (a + b)(a^2 - ab + b^2)$]
$= 301 \times (300^2 + 2 \times 300 + 1 - 900)$
$= 301\,[(300+1)^2 - 900]$
$= 301(301^2 - 30^2)$
$= 301 \times 331 \times 271$ [using $a^2 - b^2 = (a + b)(a - b)$]
$= 7 \times 43 \times 271 \times 331$
So, required number of factors $= (1+1)(1+1)(1+1)(1+1) = 16$

QNo:- 6 ,Correct Answer:- B

Explanation:-
The no. will be of the form LCM (4, 5, 6, 7) × k + 1
LCM of 4, 5, 6, 7 = 420
So, the required no. is (420 × k + 1).
Putting k = 1, we get 420 × 1 + 1 = 421. So, answer is option B

QNo:- 7 ,Correct Answer:- B

Explanation:-
The series is in A.P. where a = -12 and d = 4.
So $120 = (n/2)[2 \times (-12) + (n - 1) \times 4]$.
On solving this, we get n = 12

So option B.

QNo:- 8 ,Correct Answer:- C

Explanation:-
B is in G.P. with $a = 2^0$, r = 2, n = 65

$$\therefore S_n = \frac{a(r^n - 1)}{r - 1} = \frac{2^0(2^{65} - 1)}{2 - 1} \Rightarrow B = 2^{65} - 1 \Rightarrow B = A - 1$$

$\therefore$ A is larger than B by 1.

QNo:- 9 ,Correct Answer:- *C*

Explanation:-
Clearly, the series is of natural numbers 1, 2, 3, 4, ... Reqd ratio = 1 : 4.

QNo:- 10 ,Correct Answer:- *B*

Explanation:-
2, a, b, c, d, e, f & 65 form an AP
⇒ a = 2 + D, b = 2 + 2D, c = 2 + 3D, d = 2 + 4D, e = 2 + 5D, f = 2 + 6D and 65 = 2 + 7D
⇒ D = 9 ⇒ a = 2 + 9 = 11
b = 2 = 18 = 20
c = 2 + 27 = 29
and so on
So the Series 2, 11, 20, 29, 38, 47, 56, 65.
so e = 47
Hence the answer is option B

QNo:- 11 ,Correct Answer:- *D*

Explanation:-
Average = Sum/No.of students
60 = Total weight of 30 students/30
total weight of 30 students = 1800
similarly total weight of remaining 10 students = 56 x 10 = 560
Hence, Average of all 40 students = (1800 + 560)/40 = 2360/40 = 59
=> Average weight = 59

QNo:- 12 ,Correct Answer:- *B*

Explanation:-
Suppose the age of son is x years
Therefore, age of father = 10x years
According to question
(10x + x)/2 = 22
11x = 44
x = 4 years

Hence, age of son is 4 years.

QNo:- 13 ,Correct Answer:- *D*

Explanation:-
Let the original number of employees = x.
Now 40x + 120 × 32 = (x + 120) × 36. On solving we get x = 120.
So the total employees = 120 + 120 = 240.

QNo:- 14 ,Correct Answer:- C

Explanation:-
Let the weight of container is x kg.
We have 30 × 40 + x = 31 × 42 => x = 102 kg

QNo:- 15 ,Correct Answer:- B

Explanation:-
Total age of two men replaced = 20 + 22 = 42 years
Total increase in age on replacement = 2 x 12 = 24 years
Total age of two new persons included = 42 + 24 = 66 years
Therefore, Average age of new persons = 66/2 = 33 year

Section : Paper 2

QNo:- 16 ,Correct Answer:- B

Explanation:-
let MP = 100
after all discounts MP = 0.9 x 0.88 x 0.95 x 100 = 75.24
so discount = 100 - 75.24 = 24.76%

QNo:- 17 ,Correct Answer:- C

Explanation:- Original company price = (25000 / 85) × 100 = 29411,
Now, S.P. with 8% profit = 1.08 × 29411 = 31764
which is approximately equal to option C

QNo:- 18 ,Correct Answer:- D

Explanation:- Number of literate man = 166000 x 0.7 = 116200
Number of total literate = 296000 x 0.5 = 148000
Number of literate women = 148000-116200 = 31800

QNo:- 19 ,Correct Answer:- C

Explanation:-

Let Q = 100 then P = 60

$$\text{Required percentage} = \frac{100-60}{60} \times 100 = 66\frac{2}{3}\%$$

QNo:- 20 ,Correct Answer:- A

Explanation:- Let B, G be the boys and girls in the class, So .6B+.8G=260 (65% of 400)
And B+G=400.
Solving we get G=100.

QNo:- 21 ,Correct Answer:- *B*

Explanation:-
we can solve it by using options
Let x be the initial cost of the flight ticket,
Option 1- if she booked 10 days prior, then gets 25% off
x – 25% of x = 4680 ⇒ x = 6240
and if she booked 9 days prior. Then gets 15% off
x – 15% of x = 5400 ⇒ x = 6353 (approx)
Incorrect
Option 2- if she booked 20 days prior, still gets 35% off
x – 35% of x = 4680 ⇒ x = 7200
and if she booked 19 days prior. Then gets 25% off
x – 25% of x = 5400 ⇒ x = 7200
Correct
No need to check further.
So, she would have booked the ticket 19 days prior

QNo:- 22 ,Correct Answer:- *A*

Explanation:- *Salary of Y in april 2016 = 30900*
Salary of Y in march 2015 = 30900 × 100/103 = 30000
Salary of X in 2015 = 30000 × 100/75 = 40000

QNo:- 23 ,Correct Answer:- *B*

Explanation:- *Let S.P. = Rs 100*
Then Profit =20% of 100=20 Rs.
⇒ C.P. =S.P. - Profit
C.P.=100-20 = Rs 80
$\text{So, Actual profit\%} = \frac{\text{Profit}}{\text{C.P.}} \times 100 = \frac{20}{80} \times 100 = 25\%$

QNo:- 24 ,Correct Answer:- *D*

Explanation:- *Let cost price = 100*
Selling price= 115
New CP = 100 – 5 = 95
New SP = 95 + 9.5 = 104.5
Difference in SP = 115 – 104.5 = 10.5
If difference is 10.5 then C.P. = 100
$\text{If difference is 21 then C.P.} = \frac{100}{10.5} \times 21 = 200$

QNo:- 25 ,Correct Answer:- *B*

Explanation:- *S.P for shopkeeper = 100 × 0.8 = Rs 80 (as he sells50 notepads at Rs 0.8 per notepad)*
Profit of shopkeeper = Rs 8 (4 x 2)
C.P for shopkeeper = 80 -8 = 72 = S.P for company
Profit for company = Rs 18
C.P for company = 72-18 = Rs 54

QNo:- 26 ,Correct Answer:- *C*

Explanation:-
Formula for amount in case of compound interest
$A = P(1+R/100)^n$
Therefore
$A = 2000(1+10/100)^3$
A = 2662
Since A = 2662 , Interest = A - P
We get 2662 - 2000 = 662.
Hence option C

QNo:- 27 ,Correct Answer:- *D*

Explanation:-
Formula for amount in case of compound interest
$A = P(1+R/100)^n$
as both got same amount after 2 and 4 years respectively, let their shares are x and 61000 - x
so we have
$x(1 + 20/100)^2 = (61000 - x)(1 + 20/100)^4$
on solving we get share of first daughter = x = 36000
so share of second daughter = 25000

QNo:- 28 ,Correct Answer:- *D*

Explanation:-
Since the simple interest for three years is $ 7200, so the simple interest for one year is $ 2400. In the first year the simple interest and the compound interest are same. So compound interest for the first year is $ 2400. Hence compound interest for the second year is $ 5520 - $ 2400 = $ 3120. This means that in the second year $ 3120 - $ 2400 = $ 720 is the interest on $2400 in one year. Hence rate of interest $= \frac{720}{2400} \times 100 = 30\%$.

QNo:- 29 ,Correct Answer:- *B*

Explanation:-
Let the principal be P.
Difference in amounts in 8 and 5 years = 12005 - 9800 = 2205;
Interest earned per year = 2205 / 3 = 735.....(i)
Now, Interest earned in 5 years = 5 × 735 = 3675.
P = 9800 – 3675 = 6125.....(ii)
From (i) and (ii), we get;
Rate = (735 / 6125) × 100 = 12%

QNo:- 30 ,Correct Answer:- *B*

Explanation:-

for 2 years CI - SI = P(R/100)^2

so

Difference of 2 years

$$= \frac{p \times r^2}{10000} \Rightarrow 32 = \frac{5000 \times r^2}{10000} \Rightarrow r^2 = \frac{32 \times 10000}{5000} = 64$$

$$\Rightarrow r = \sqrt{64} = 8\%$$