1. Select the related word/letters/ number from the given alternatives. Branch : Plant :: Limb : ?
A. Dog
B. Walk
C. Hand
D. Animal

Ans. D.
Sol. Since plant has branches similarly animal has limbs.
2. Select the related word/letters/ number from the given alternatives.
Cactus : Thorns :: Sheep : ?
A. Meat
B. Wool
C. Milk
D. Graze

Ans. B.
Sol. Since Cactus has thorns similarly Sheep is related to wool.
3. Select the related word/letters/ number from the given alternatives.
Dawn : Dusk :: ?
A. Then : Now
B. Late : Never
C. Summer : Winter
D. North : South

Ans. C.
Sol. As dawn (day light) is opposite to dusk(night fall) similarly summer is opposite to winter.
4. Select the related word/letters/ number from the given alternatives.
YB: DW :: CX : ?
A. AZ
B. UF
C. $A B$
D. ZA

Ans. D.
Sol. If we start counting alphabet from starting $B$ comes in second position and Y comes in second position if we count from last.


Similarly
$\mathrm{Z} \longrightarrow 26, \mathrm{~A} \longrightarrow 1 \rightarrow(26+1=27)$
5. Select the related word/letters/ number from the given alternatives. Thin : Ninth :: Hole : ?
A. Hell
B. Hello
C. Loo
D. Heel

Ans. B.
Sol. Since ninth is made from word thin, similarly in the given option hello is the only word that is made from the word hole.
6. Select the related word/letters/ number from the given alternatives. Care : Area :: Amine : ?
A. Define
B. Dine
C. Inertia
D. Inept

Ans. D.
Sol. Care and Area both words have four letters similarly amine and inept both have five letters. So D would be appropriate answer.
7. Select the related word/letters/ number from the given alternatives.
1000: 3 :: 100000 : ?
A. 6
B. 4
C. 5
D. 3

Ans. C.
Sol. 1000 have four digits so 4-1 =3 Similarly 100000 have six digits so 6-1 $=5$
$2^{\text {nd }}$ method- 1000 has three zeros similarly 100000 has five zeros.
8. Select the related word/letters/ number from the given alternatives. 111: 222 :: 444 : ?
A. 888
B. 666
C. 777
D. 333

Ans. A.
Sol. $111 * 2=222$
Similarly $444 * 2=888$
9. Select the related word/letters/ number from the given alternatives.
453: 99 :: 642 : ?
A. 765
B. 346
C. 867
D. 396

Ans. D.
Sol. $4+5+3=12 \rightarrow 1+2=3$,
$99=9 * 9=81=8+1=9$ hence $3^{2}=9$
Similarly $6+4+2=12 \rightarrow 1+2=3$, 396
$=3 * 9 * 6=162=1+6+2=9$
Hence $3^{2}=9$.
10. Select the odd word/letters/
number/word pair/number pair from the given alternatives.
A. violet
B. indigo
C. white
D. blue

Ans. C.
Sol. The rainbow has violet, indigo and blue colour but it has not white colour. 11. Select the odd word/letters/ number/word pair/number pair from the given alternatives.
A. Tea and Coffee
B. Bread and Butter
C. Cup and saucer
D. Wine and Cheese

Ans. C.
Sol. Apart from option C, all other options are interrelated.
12. Select the odd word/letters/ number/word pair/number pair from the given alternatives.
A. Bungalow and Villa
B. Office and shop
C. House and Apartment
D. House and Villa

Ans. B.
Sol. A, B and C are same in meaning
because people lives there with their
family but office and shop are working place.
13. Select the odd word/letters/ number/word pair/number pair from the given alternatives.
A. OP
B. IJ
C. SU
D. ED

Ans. C.
Sol. Option A, B and C has consecutive letters but in option $C$ there is gap of one letter.
14. Select the odd word/letters/ number/word pair/number pair from the given alternatives.
A. fluffiness
B. finely
C. definite
D. define

Ans. C.
Sol. Apart from option C, All the others options have one common word 'FINE'. But in option C we cannot find 'FINE'. 15. Select the odd word/letters/ number/word pair/number pair from the given alternatives.
A. AXUI
B. ELAM
C. ASIV
D. YREV

Ans. A.
Sol. Apart from option A, we find a meaningful word from all the others options like male, visa, very from option $B, C$ and $D$ respectively.
16. Select the odd word/letters/ number/word pair/number pair from the given alternatives.
A. 4567
B. 2345
C. 8765
D. 6789

Ans. C.
Sol. Apart from option C, all others numbers have digits in increasing order. 17. Select the odd word/letters/ number/word pair/number pair from the given alternatives.
A. 101
B. 37
C. 225
D. 65

Ans. C.
Sol.
Option C (225) is a perfect square while others are not.
18. Select the odd word/letters/ number/word pair/number pair from the given alternatives.
A. 112,147
B. 130,152
C. 126,161
D. 119,133

Ans. B.
Sol. Apart from option B all others have H.C.F 1(Co-prime), While H.C.F of Option B is 2.
19. In the given series one word/one term/one number is missing. Select the correct alternative from the given ones that will complete the series.
Buzzwords, Preacher, Bonanza, Credit, ?
A. Slam
B. Honey
C. Mole
D. Pace

Ans. B.
Sol. If we go from left to right, in each word letter is decreasing by 1.
Eg. Buzzwords $=9$ letters, Preacher $=8$
letters, Bonanza $=7$ letters , Credit= 6 letters so the next word would be of 5 letters that is Honey in the given option. 20. In the given series one word/one term/one number is missing. Select the correct alternative from the given ones that will complete the series.
Crazy, Zygote, Teapot, Other, ?
A. Time pass
B. Errand
C. Roads
D. Elephant

Ans. B.
Sol. In the given question if we go from left to right the next word is formed by the last two letters of the previous word. so
othER = Errand
21. In the given series one word/one term/one number is missing. Select the correct alternative from the given ones that will complete the series.
pal, jowl, spine, griped, ?
A. scurries
B. sentries
C. ancient
D. queasy

Ans. C.
Sol. If we go from left to right, one letter is increasing in each word.
Pal has 3 letters, jowl has 4 letters, spine has 5 letters, griped has 6 letters, so the next word would be of 7 letters that is ancient in the given option. 22. In the given series one word/one term/one number is missing. Select the correct alternative from the given ones that will complete the series.
G, I, K, M, ?
A. P
B. O
C. N
D. Q

Ans. B
Sol. If we go from left to right, there is a gap of one letter in alphabetically order,
$\mathrm{G} \rightarrow \mathrm{H} \rightarrow \mathrm{I}$
$\mathrm{I} \rightarrow \mathrm{J} \rightarrow \mathrm{K}$
$\mathrm{K} \rightarrow \mathrm{L} \rightarrow \mathrm{M}$
$\mathrm{M} \rightarrow \mathrm{N} \rightarrow \mathrm{O}$
Hence the next letter would be O.
23. In the given series one word/one term/one number is missing. Select the correct alternative from the given ones that will complete the series.
beh, cfi, dgj, ehk, ?
A. dfe
B. cva
C. fil
D. frs

Ans. C.
Sol. If we go from left to right In each word the first ,the second and the third letter is increasing by one respectively. $e \rightarrow f, h \rightarrow I, k \rightarrow 1$
24. In the given series one word/one term/one number is missing. Select the correct alternative from the given ones that will complete the series.
XOXOXXX, XXOOXXX, XXOOXXX, XXOXOXX, ?
A. XOXXOXX
B. XOXOXXX
C. XXOOXXX
D. XXOXXOX

Ans. D.:
Sol. XOXOXXX, XXOOXXX, XXOOXXX, XXOXOXX, XXOXXOX .
$X$ is changing its positon when we shift it from left to right.
25. In the given series one word/one term/one number is missing. Select the correct alternative from the given ones that will complete the series.
$13,11,8$, ?, -1
A. 5
B. 3
C. 4
D. 1

Ans. C.
Sol.
$13-2=11$
$11-3=8$
$8-4=4$
$4-5=-1$
26. In the given series one word/one term/one number is missing. Select the correct alternative from the given ones that will complete the series.
$-11 / 4,-2,-5 / 4, ? 1 / 4$
A. $1 / 2$
B. -0.75
C. 0.75
D. $-1 / 2$

Ans. D.
Sol.
$-11 / 4=-2.75+0.75=-2$
$-2+0.75=-1.25=-5 / 4$
$-1.25+0.75=-0.50$ or $-1 / 2$
$-0.50+0.75=0.25$ or $1 / 4$
27. In the given series one word/one term/one number is missing. Select the correct alternative from the given ones that will complete the series.
19, ?, 29, 31, 37
A. 21
B. 23
C. 22
D. 26

Ans. B.
Sol.
$19+4=23$
$23+6=29$
$29+2=31$
$31+6=37$
28. If $v<y, x<y, w<z$ and $z>y$, which of the following is true?
I. $z>v$
II. $\mathrm{w}>\mathrm{v}$
III. $x<z$
A. II Only
B. III Only
C. II and III only
D. I and III only

Ans. D.
Sol.
$w<z>y>v, z>y>x$
From the given conclusion we can find out that only option D is true.
29. The weights of five boxes are 10, 30, 50, $70 \& 80$ kilograms. Which of the following cannot be the total weight, in kilograms of any combination of these boxes?
A. 160
B. 220
C. 180
D. 150

Ans. B.
Sol.
If we check every option one by one we can find that there is not any combination of weight from which we can get total weight 220 by adding them Eg. $160=70+50+30+10$
$180=80+70+30$
$150=70+50+30$
But we cannot find 220 by adding these weight in any combination.
30. If the letters $I, N, A, T, E \& C$ are numbered 1, 2, 3, 4, 5, \&6 respectively. Select that combination of numbers so that letters arranged accordingly, form a meaningful word.
A. 3261524
B. 6543421
C. 6214523
D. 2541562

Ans. A.
Sol.
3261524 = ANCIENT
31. If CONFUSED is coded as XLMUFHVW, then how will BAT be coded as?
A. YZG
B. RGD
C. TGO
D. APV

Ans. A.
Sol. According to alphabet
32. In a certain code language, 462 means 'lion is wild', 543 means 'cat is hungry', 1656 means 'wild and hungry'. Find the code for 'and'.
A. 5
B. 3
C. 1
D. 9

Ans. C.
Sol.
462 means 'lion is wild'
543 means 'cat is hungry'
165 means 'wild and hungry'
Is $=4$,
Hungry = 5,
Wild = 6,
And $=1$.
33. In a certain code language, ' + '
represents 'x', '-' represents '+', 'x' represents ' $\div$ ' and ' $\div$ ' represents '-'.
Find out the answer to the following question.
$0.25+240-300 \times 5=$ ?
A. 0
B. 120
C. 1
D. 2.5

Ans. B.
Sol.
$0.25+240-300 \times 5=0.25 \times 240+300 \div 5$
$\rightarrow 60+60=120$
34. If $A$ @ $B$ means $A$ is mother of $B, A$ \# $B$ means $A$ is sister of $B$ and $A!B$ means $A$ is granddaughter of $B$, then what does $P$ \# Q ! $\mathrm{R} @ \mathrm{~S}$ mean, if R has only one child?
A. $R$ is mother of $P$
B. Q is sister of S
C. $S$ is mother of $P$
D. P is sister of S

Ans. C.
Sol.
$P \# Q=P$ is sister of $Q$,
$\mathrm{Q}!\mathrm{R}=\mathrm{Q}$ is granddaughter R ,
$R$ @ $S=R$ is mother of $S$,
Therefore,
$P \# Q!R @ S=S$ is mother of $P$.
35. If $67 \times 25=6,24 \times 12=3$, then find the value of $90 \times 44=$ ?
A. 2
B. 1
C. 3
D. 4

Ans. B.
Sol.
$67 \times 25=(6+7)-(2+5)=13-7=6$
$24 \times 12=(2+4)-(1+2)=6-3=3$
$90 \times 44=(9+0)-(4+4)=1$.
36. Which of the following words follow the trend of the given list?
Vertex, Affix, Unix, Waxy, Extra, ?
A. Annex
B. X-ray
C. Apex
D. Axial

Ans. B.
Sol.
The position of letter $X$ is decreasing by 1 in the series
Vertex, Affix, Unix, Waxy, Extra,

$$
6^{\text {th }}, \quad 5^{\text {th }}, \quad 4^{\text {th }}, \quad 3^{\text {rd }}, 2^{\text {nd }},
$$

And in X-Ray, X is in $1^{\text {st }}$ position.
37. Which of the following terms follows the trend of the given list?
IVII, IIVII, IIIVII, $\qquad$ .
A. IIIVIII
B. IIIIVII
C. IIIIVIII
D. IIIVVIII

Ans. B.
Sol.
IVII, IIVII, IIIVII, IIIIVII .
There is increment with I at the start of every new word in the series.
38. A fishing boat sails 5 km south in still waters, then turns East and sails 8 km, then turns North and sails 5 km , then turns to its right and sail 10 km . Where is the boat now with reference to its starting position?
A. 18 km to the East of the starting position.
B. 2 km to the West of the starting position.
C. 18 km to the West of the starting position.
D. 2 km to the East of the starting position.
Ans. A.
Sol.


18 km to the East of the starting position.
39. Two people A and B start walking from the same point. A walks 15 m East, then turns south and walks 5 m . At the same time, B walks 5 m South, then he turns to his left and walks 25 m . Where is $B$ now with respect to the position of $A$ ?
A. B is 35 m to the East of $A$
B. B is 10 m to the East of $A$
C. $B$ is 10 m to the West of $A$
D. $B$ is 35 m to the West of $A$

Ans. B.
Sol.

$B$ is 10 m to the East of $A$.
40. In the question two statements are given, followed by two conclusions, I and II. You have to consider the statements to be true even if it seems to be at variance from commonly known facts. You have to decide which of the given conclusions, if any, follows from the mentioned statements.
Statement 1: All babies are toys.
Statement 2: All children are toys
Conclusion I: Some Children are babies.
Conclusion II: No Child is a baby.
A. Only conclusion I follows
B. Only conclusion II follows
C. Either I or II follows
D. Neither I nor II follows

Ans. C.
Sol.
All babies are toys.
All children are toys.
Means
Either some babies are children or no child is a baby.
41. In the question a statement is given, followed by two arguments, I and II. You have to consider the statement to be true even if it seems to be at variance from commonly known facts. You have to decide which of the given arguments, if any, is a strong argument.
Statement : Should prison term of those criminals who have shown good behavior be reduced?
Argument I : No, if they are freed they will again commit crimes.
Argument II : Yes, this will incentivize other to show good behavior.
A. if only argument I is strong
B. if neither argument I nor II is strong
C. if both argument I and II are strong
D. if only argument II is strong

Ans. D.
Sol.
Prison term of those criminals who have shown good behavior be reduced;

It will encourage other criminal to show or be of good behavior.
42. Which of the following cube in the answer figure cannot be made based on the unfolded cube in the question figure?


Ans. C.
Sol.


Using given figure the dice, shown in option C, cannot be made because there should be $\square$ in place of $\because \because$. 43. Which of the following answer figure patterns can be combined to make the question figure?

A.

B.

C.


Ans. C.
Sol.

44. Which of the following diagrams represent the relationship between hockey players, football players and those who have won medals in both hockey and football?
A.

B.

C.

D.


Ans. C.
Sol.
Both hockey and football winner would be in common area.

45. In the following figure, square represents boys, triangle represents girls, circle represents cricket players and rectangle represents hockey players. Which set of letters represents girls who do not play hockey and boys who do not play cricket?

A. U, R, S and T
B. U, Q, T and S
C. R, V, Q and U
D. $V, S, R$ and $T$

Ans. B.
Sol.
Girls who do not play hockey $=U$ and $Q$ Boys who do not play cricket $=\mathrm{T}$ and S Therefore,
Option B is appropriate answer.
46. Which answer figure will complete the pattern in the question figure?

A.

B.

C.

D.


Ans. B.
Sol.


Option B is appropriate answer. 47. From the given answer figures, select the one in which the question figure is hidden/embedded

A.

C.

B.

D.


Ans. B.
Sol.


Option B is appropriate answer. 48. A piece of paper is folded and punched as shown below in the question figures. From the given answer figures, indicate how it will appear when opened.

A.

B.

C.

D.


Ans. D.
Sol.


Option D is appropriate answer.
49. If a mirror is placed on the line MN, then which of the answer figures is the right image of the given figure?

A.

C.

C.
B.


Ans. D.
Sol.


Option B is appropriate answer 50. A word is represented by only one set of numbers as given in any one of the alternatives. The sets of numbers given in the alternatives are represented by two classes of alphabets as shown in the given two matrices. The columns and rows of Matrix-I are numbered from 0 to 4 and that of Matrix-II are numbered from 5 to 9 . A letter from these matrices can be represented first by its row and next by its column, for example ' $T$ ' can be represented by 10 , 32 etc and ' A ' can be represented by 65 , 56 etc. Similarly, you have to identify the set for the word "WOVEN".

| MATRIX-1 |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| आव्यूह - 1 |  |  |  |  |  |
|  0 $\mathbf{1}$ $\mathbf{2}$ $\mathbf{3}$ 4 <br> $\mathbf{0}$ S N X O V <br> $\mathbf{1}$ T X S Z R <br> Z P W Q P P <br> $\mathbf{3}$ V U T T X <br> $\mathbf{4}$ O Q V U S |  |  |  |  |  |


A. $12,13,41,55,69$
B. $31,01,65,58,41$
C. $24,20,40,31,76$
D. $21,40,04,69,01$

Ans. D.
Sol.
W =21
$\mathrm{O}=03,40$
$V=30,04$
$\mathrm{E}=69$
$\mathrm{N}=01$
WOVEN = 21, 40, 04, 69, 01.

1. The ratio of molars to pre-molars in adult humans is $\qquad$
.
A. $2: 3$
B. $3: 2$
C. $1: 1$
D. $2: 1$

Ans. B.
Sol. In every set, first incisors (I) are indicated, second canines (C), third premolars ( P ), and finally molars ( M ), which are giving I:C:P:M. for example, the formula is 2.1.2.3 for upper teeth indicates 2 incisors, 1 canine, 2 premolars, and 3 molars on one side of the upper mouth.
2. Which of the Red Blood Cells secrete histamine, serotonin, heparin, etc., and are involved in inflammatory
A. neutrophils
B. basophils
C. Iymphocytes
D. monocytes

Ans. B.
Sol. In many specific kinds of inflammatory reactions Basophils appears, particularly in that cause allergic symptoms. By preventing blood from clotting too quickly, the Basophils contain anticoagulant heparin. To promote blood flow in tissues, they contain the vasodilator histamine. They can be found in unusually high numbers at sites of ectoparasite infection, e.g., ticks.
3. In some plants such as Rhizophora growing in swampy areas, many roots come out of the ground and grow vertically upwards. Such roots are called

A tendr
B. pneumatophores
C. fibrous root
D. adventitious root

Ans. B.
Sol. Pneumatophore Specialized as 'breathing' root which developed in some plant species that grow in waterlogged or strongly compacted soils, for example mangroves. The aerial part of the root has many pores which enable to exchange the gas with the atmosphere. 4. What is the process by which terrestrial plants take up huge amount of water daily but most of it is lost to the air through evaporation from the leaves?
A. desiccation
B. transpiration
C. dissipation
D. respiration

Ans. B.
Sol. Transpiration is the processevaporation from aerial parts and movement of water through a plant, such as leaves, stems and flowers. Water is necessary for plants and the roots are used only a small amount of water for growth and metabolism. The remaining 97-99.5\% is lost by transpiration and guttation.
5. Consider the following pairs.

Name : Formula
1] Ethylamine: $\mathrm{CH}_{2}=\mathrm{CHCH}_{2} \mathrm{Br}$
2] 3-Bromo-2-methylpropane :
$\mathrm{CH}_{3}=\mathrm{CH}_{2}-\mathrm{NH}_{2}$
3] 2-Bromo-2-methylpropane :
$\left(\mathrm{CH}_{3}\right)_{3} \mathrm{CBr}$
4] 2-Methoxypropanal :
$\mathrm{CH}_{3} \mathrm{CH}\left(\mathrm{OCH}_{3}\right) \mathrm{CHO}$
Which of the above pairs are correctly matched?
A. 1 and 4 only
B. 2, 3 and 4 only
C. 3 and 4 only
D. 1, 3 and 4 only

Ans. C.
Sol. 3-Bromo-2-methylpropane $=\mathrm{C} 2 \mathrm{H} 7 \mathrm{~N}$ Ethylamine $=\mathrm{C} 4 \mathrm{H} 9 \mathrm{Br}$
2-Bromo-2-methylpropane : $\left(\mathrm{CH}_{3}\right)_{3} \mathrm{CBr}$
Methoxypropanal: $\mathrm{CH}_{3} \mathrm{CH}\left(\mathrm{OCH}_{3}\right) \mathrm{CHO}$
6. What is the IUPAC name of Vinyl chloride?
A. 2-Chlorobutane
B. 3-Bromopropene
C. Chloroethene
D. Dichloromethane
Ans. C

Sol. Vinyl chloride is also known as chloroethylene which is colourless, flammable, toxic gas and it belongs to the family of organ halogen and used principally in making polyvinyl chloride, or PVC, a widely used plastic with numerous applications.
7. Formula for styrene is $\qquad$ .
A. $\mathrm{CH}_{2}=\mathrm{CH}-\mathrm{C}_{4} \mathrm{H}_{7}=\mathrm{CH}_{2}$
B. $\mathrm{C}_{6} \mathrm{H}_{5} \mathrm{CH}=\mathrm{CH}_{2}$
C. $\mathrm{C}_{5} \mathrm{H}_{4} \mathrm{CH}=\mathrm{CH}_{2}$
D. $\mathrm{CH}_{2}=\mathrm{CH}-\mathrm{C}_{3} \mathrm{H}_{5}=\mathrm{CH}_{2}$

Ans. B.
Sol. Styrene is also known as ethenylbenzene, vinylbenzene, and phenylethene. The chemical formula of styrene is $\mathrm{C}_{6} \mathrm{H}_{5} \mathrm{CH}=\mathrm{CH}_{2}$ and it is an organic compound. It has a sweet smell and this derived of benzene is a colourless oily liquid that evaporates
easily, although with high concentrations it has a less pleasant odor. Styrene is the pioneer to polystyrene and several copolymers.Styrene was produced in 2010 approximately 25 million tonnes (55 billion pounds).
8. The general electronic configuration $n s^{2} n p^{3}$ fits which of the following elements?
A. Boron
B. Fluorine
C. Oxygen
D. Nitrogen

Ans. D.
Sol. nitrogen ( $N$ ), phosphorus ( P ), ARSENIC (As), and bismuth (Bi), antimony ( Sb ) these all compounds belongs to nitrogen family. In their outer sell, all group 5 elements have the electron configuration $n s^{2} n p^{3}$, where $n$ is equal to the principal quantum number.
9. Which tag is used to insert a horizontal line on the web page?
A. <ho.li>
B. <h.l>
C. $\langle-I\rangle$
D. <hr>

Ans. D.
Sol. The HR tag has traditionally been used to add a horizontal line which is called horizontal rule in a web document. To add a line, you type:

<hr> to instruct the browser to draw a line across the full width of the page or parent element using default settings. The method to modify a horizontal line's appearance changed between HTML4 and HTML5.
10. Which of the following is a browser?
A. Safari
B. Linux
C. Windows
D. MacOS

Ans. A.
Sol. Safari is a web browser which is developed by Apple and based on the WebKit engine. First, it is released in 2003 with Mac OS X Panther. Since the introduction of the iPhone in 2007 a mobile version has been included in iOS devices. It is the default browser on Apple devices.
11. Which of the following is the founder/co-founder of "Paytm"?
A. SachinBansal
B. Vijay Shekhar Sharma
C. KunalBahl
D. BhavishAggarwal

Ans. B.
Sol. Vijay Shekhar Sharma is founder of Paytm and Indian entrepreneur. He is India's youngest billionaire. In 2000 he started One97 Communications, which
offered mobile content like news, cricket scores, ringtones, jokes and exam results. One97 is the parent company of Paytm, which was launched in 2010. He becomes India's youngest man to be featured on the list in the World Billionaire's List by Forbes by acquiring the 1567th rank in 2017.
12. $\qquad$ made announcement of
Demonetization on $8^{\text {th }}$ November, 2016.
A. Sonia Gandhi
B. Narendra Modi
C. Pranab Mukherjee
D. Rahul Gandhi

Ans. B.
Sol. The Government of India announced the demonetisation on 8 November 2016, of all close ₹ 500 and ₹ 1,000 bank notes of the Mahatma Gandhi Series.
The government claimed that the action would diminish the shadow economy and crack down on the use of illegal and fake cash to encourage the illegal activity and terrorism.
13. Who is regarded as the father of microbiology? He is also known for the discovery of bacteria
A. Jonas E. Salk
B. Dmitri Mendeleev
C. Antony van Leeuwenhoek
D. Joseph Priestley

Ans. C.
Sol. Antonie Philips van Leeuwenhoek
was a Dutch businessman, scientist, and the Golden Age of Dutch science and technology is one of the popular representatives. A largely self-taught man in science, he is also called the "the Father of Microbiology" and he was acknowledged as the first microscopist and microbiologist. Van Leeuwenhoek is best known for his exploration work in the field of microscopy and for his contributions toward the establishment of microbiology as a scientific discipline. 14. $\qquad$ is a locus of all points
representing bundles among which the consumer is indifferent.
A. demand graph
B. utility function
C. budget curve
D. indifference curve

Ans. D.
Sol. an indifference curve joins two points on a graph representing two different quantities of goods, the points between which a consumer is indifferent.

The consumer has no preference for one combination or bundle of goods over a different combination on the same curve. One can also refer to each point on the indifference curve as rendering the same level of utility (satisfaction) for the consumer. In other words, an indifference curve is the locus of various points showing different combinations of two goods providing equal utility to the consumer.
15. Which of the following is true with respect to LRAC (Long run average cost) and LRMC (Long run marginal cost)?
A. Both LRAC and LRMC curves are ' $U$ ' shaped.
B. Both LRAC and LRMC curves are ' N ' shaped.
C. LRAC curve is ' $U$ ' shaped and LRMC curves is ' N ' shaped.
D. LRAC curve is ' $N$ ' shaped and LRMC curves is ' U ' shaped.
Ans. A.
Sol. The most important determinant of the shape of the LRAC and LRMC curves is whether there are increasing, constant, or decreasing ret The LRAC curve is U-shaped, just like the SRAC curve but the source of the U -shape is increasing and decreasing returns to scale, rather than diminishing returns to a factor of production.urns to scale. In this more general setting a U-shaped LRAC curve is consistent with the firm facing economies of scale for relatively low levels of output and diseconomies of scale for higher levels. The LRMC curve is determined from the LRAC curve; it measures the change in LRTCs as output is increased LMC lie below the ZRAC curve when LRAC is falling, and above the LRAC curve when LRAC is rising. 16. If demand curve for Kanjeevaramsarees is $\mathrm{D}=73000-17 \mathrm{P}$ and supply curve is $S=28000+8 \mathrm{P}$, find the equilibrium Price (in Rupees)?
A. 2000
B. 2200
C. 1800
D. 2400

Ans. C.
Sol. demand is given by the equation $Q D=73000-17 \mathrm{P}$, where QD is quantity demanded, and $P$ is the price of the good. Supply is described by the equation QS $=28000+8 \mathrm{P}$ where QS is the quantity supplied. The equilibrium price and quantity is- $\mathrm{QD}=\mathrm{QS}$ that is 1800.
17. Any current account deficit is of necessity financed by a $\qquad$ _.
A. budget surplus
B. Ioan from RBI
C. net capital inflow
D. currency depreciation

Ans. C.
Sol. A net flow of capital is in the form of increased purchases of domestic assets by foreigners into a country as real or financial. It also reduced holdings of foreign assets by domestic residents. It is recorded as positive or a credit in the balance on capital account.
18. Personal Income - Personal tax payments - Non-tax payments=
A. Net national Product at factor cost
B. National Income
C. Personal Disposable Income
D. Gross national Product

Ans. C.
Sol.
The total amount of money available for an individual or population to spend or save after taxes has been paid. As an economy measure it is abbreviated DPI. DPI = Personal Income - Personal tax payments - Non-tax payments.
19. The electrostatic precipitator has electrode wires that are maintained at several thousand volts, it produces which of the following to release electrons?
A. a flame
B. an electric field
C. a corona
D. electromagnetic waves

Ans. C.
Sol. A corona discharge is an electrical discharge brought on by the ionization of a fluid such as air surrounding a conductor that is electrically charged. Spontaneous corona discharges occur naturally in high-voltage systems unless care is taken to limit the electric field strength.
20. Which type of water plants scientifically named as
Eichhorniacrassipes, has become the world's most problematic aquatic weed?
A. moss
B. algae
C. hyacinth
D. fungus

Ans. C.
Sol. An aquatic plant native to the Amazon basin is called water hyacinth or Eichhorniacrassipes. In outside native range, it is often a highly problematic
invasive species. In East Africa, to make furniture, handbags and rope by water hyacinths from Lake Victoria. 21. By percentage, which of the following gases is greater than the rest in the earth's atmosphere?
A. Carbon dioxide
B. Neon
C. Hydrogen
D. Nitrogen

Ans. D.
Sol.
By volume, dry air contains 78.09\% nitrogen, 20.95\% oxygen, $0.93 \%$ argon, $0.04 \%$ carbon dioxide, and small amounts of other gases.
Air also contains a variable amount of water vapor, on average around $1 \%$ at sea level, and $0.4 \%$ over the entire atmosphere.
22. Which of the following is not a greenhouse gas?
A. Ammonia
B. Chlorofluorocarbons
C. Methane
D. Nitrous oxide

Ans. A.
Sol. Ammonia $\left(\mathrm{NH}_{3}\right)$ is colourless, vitriolic gas composed of nitrogen and hydrogen. These compounds of elements are the simplest stable and serves as production of many commercially important nitrogen compounds in a starting material. Ammonia contains no carbon and natural gas releases, but greenhouse gases doesn't.
23. In parts of South India, Lord Vishnu is also known as Lord
A. Bhairava
B. Rudra
C. Pashupati
D. Venkateshwara

Ans. D.
Sol. Venkateswara Temple is one of the is the richest temple in the world in terms of donations received and wealth. It is the landmark of Vaishnavite temple situated in the hill town of Tirumala in Tirupati in Chittoor district of Andhra Pradesh, India. The Temple is devoted to the Lord Sri Venkateswara, an embodiment of Vishnu, who save mankind from trials and troubles of Kali Yuga he will appear.
24. With reference to the interior of the earth consider the following statements.
1] The earth's radius is $6,370 \mathrm{~km}$.
2] The deepest drill at Kola, in Arctic Ocean, has so far reached a depth of 12 km.

3] Rocks along a fault tend to move in the same direction.
Which of the statements given above is / are correct?
A. 1 and 2 only
B. 2 and 3 only
C. 2 and 3 only
D. 1, 2 and 3

Ans. A.
Sol. The Kola Superdeep Borehole was a deep hole on the Kola Peninsula in Russia. It was dug in order to learn more about the inside of the Earth. 1970 the deepest digging started on May 24, SG3 , reached 12,262 meters ( $40,230 \mathrm{ft}$ ) in 1989 and still is the deepest artificial point on Earth. The borehole is 9 inches ( 23 cm ) in diameter. It is the deepest borehole in the world is true depth. 25. According to The Continental Drift Theory, all the continents formed a single continental mass named $\qquad$ _.
A. Laurasia
B. Pangaea
C. Gondwanaland
D. Panthalassa

Ans. B.
Sol. Earth didn't have seven continents about 300 million years ago, but instead Pangaea which is one massive supercontinent. It was surrounded by an one ocean, which was known as
Panthalassa.The modern theory of plate tectonics was the explanation of the formation of Pangaea's, which posits that the Earth's outer shell is broken up into several plates that slide over Earth's rocky shell, the mantle.
26. Which of the planets has no satellites?
A. Uranus
B. Venus
C. Jupiter
D. Neptune

Ans. B.
Sol. Mercury and Venus have no natural satellites; the moon is a large natural satellite, which has Earth; and Mars has two tiny natural satellites their names are Phobos and Deimos. With central iron core and a rocky mantle Venus is made, Earth is also has similar to the composition. carbon dioxide (96\%) and nitrogen (3\%) by these two gases the atmosphere is made and also with small amounts of other gases.
27. Which element makes up $46.6 \%$ of the mass of the Earth's Crust?
A. Iron
B. Oxygen
C. Aluminium
D. Silicon

Ans. B.
Sol. Earth has the right combination to sustain life that's the main reason of
why it is unique among the known planets. It has a sufficiency of water or in other worlds its includes a few moons or have atmospheres, ice, and even oceans. According to "Essentials of Geology" by Frederick K. Lutgens and Edward J. Tarbuck, Earth's crust is made up of several elements: oxygen, 46.6 percent by weight; silicon, 27.7 percent; aluminum, 8.1 percent; iron, 5 percent; calcium, 3.6 percent; sodium, 2.8 percent, potassium, 2.6 percent, and magnesium, 2.1 percent.
28. The Kharif cropping season is from
A. October - January
B. February - May
C. June - September
D. November - February

Ans. C.
Sol. On Kharif cropping season, Barja, arhar , rice etc is cultivated. This season starts with the first rains in July, during the south-west monsoon season. In India the kharif season varies by crop and state. It is popularly considered to start in June and to end in september. It is also cultivated during the dry season with the Rabi crops. Both words rabi and kharif comes with the arrival of Mughals in the India.. Kharif means in Arabic are "autumn".
29. With reference to the 1857 revolt consider the following statements. 1] In major towns like Lucknow, Kanpur and Bareilly, moneylenders and the rich also became the objects of rebel wrath. 2] The $7^{\text {th }}$ Awadh Irregular Cavalry had refused to accept the new cartridges in early May.
3] Captain Hearsey of the Awadh Military Police was hanged by his Indian subordinates during the mtiny.
Which of the statements given above is / are correct?
A. 1 only
B. 1 and 2 only
C. 2 and 3 only
D. 1, 2 and 3

Ans. B.
Sol. The Indian Rebellion of 1857 had diverse political, economic, military, religious and social causes. The spark that led to a mutiny in several sepoy companies was the issue of new gunpowder cartridges for the Enfield rifle in February, 1857. The main centers of revolt namely meerut, Delhi, Lucknow, kanpur, Jhansi, Gwalior, Barrackpore,

Bareilly, and Arrah in Bihar. On 9th May, 85 soldiers in Meerut refused to use the new rifle and were sentenced to ten years' imprisonment. Soon there was a rebellion in the Meerut Cantonme. 30. In the middle of the first century $B C$, under $\qquad$ a high-born military commander the 'Roman Empire' was extended to present-day Britain and Germany.
A. Alexander
B. Julius Caesar
C. Xerxes
D. Caligula

Ans. B.
Sol. Gaius Julius Caesar is known as Julius Caesar. he was a Roman politician and played a critical role in the events that led to the dying of the Roman Republic and the rise of the Roman Empire. He is also known as a renowned author of Latin prose. Crassus and Pompey formed a political seam that dominated Roman politics for several year in 60 BC .
31. Which of the following Kings does not belong to the Magadha empire?
A. Bimbisara
B. Ajatashatru
C. Rajadhiraja
D. Mahapadma Nanda

Ans. C.
Sol. Rajadhiraja was emperor of the Indian Chola empire in 11th-century and the successor of his father, Rajendra Chola I. He helped his father conquer many territories and maintained the Chola authority over most of Lanka, Vengi, Kalinga, etc. during his long reign. In the ancient Indian kingdom in southern Bihar was Magadha, and was counted as one of the sixteen Mahajanapadas, in sanskrit known as "Great Countries" of ancient India. To develop the Jainism and Buddhism, Magadha played an important role and the Maurya Empire and Gupta Empire were two of India's greatest empires who originated in Magadha.
32. Al-Biruni from Uzbekistan, travelled to the India in which century?
A. $11^{\text {th }}$ century
B. $14^{\text {th }}$ century
C. $7^{\text {th }}$ century
D. $17^{\text {th }}$ century

Ans. A.
Sol. one of the greatest scholars of the medieval Islamic era was Al-Biruni who was considered as well versed in physics, mathematics, astronomy, and natural sciences, and also distinguished
himself as a historian, chronologist and linguist. He travelled to the india in $11^{\text {th }}$ century.
33. All of the following are the principal deities of the Vedic pantheon, except
$\qquad$ .
A. Durga
B. Agni
C. Indra
D. Soma

Ans. A.
Sol. the earth, and the intermediate space are belongs to the 3 dimensions of the universe/heavens, Some major deities of the Vedic tradition include Indra, Surya, Agni, Ushas, Vayu, Varuna, Mitra, Aditi, Yama, Soma, Sarasvati, Prithvi, and Rudra. 34. Who is universally credited with inventing the barometer in 1643?
A. Evangelista Torricelli
B. Christian Huygens
C. James Chadwick
D. Ernest O. Lawrence

Ans. A.
Sol. Evangelista Torricelli was best known for his invention of the barometer. He was an Italian physicist and mathematician. His great work as advances in optics and work on the method of indivisibles was very well known. Torricelli's chief invention was the mercury barometer which is the instrument that named from two Greek words, signifying two measures of weight, since by it a column of air is weighed against a column of mercury. 35. Consider the following pairs.

Size of Object or distance : Length (in m)

1] Size of hydrogen atom : $10^{-10}$
2] Height of mount Everest above sea level: $10^{8}$
3] Distance of moon from Earth : $10^{12}$
4] Distance to Andromeda galaxy : $10^{22}$
Which of the above pairs are correctly matched?
A. 1 and 3 only
B. 2, 3 and 4 only
C. 1 and 4 only
D. 1, 2, 3 and 4

Ans. C.
Sol. Size of hydrogen atom : $10^{-10}$
Height of mount Everest above sea level
: 8,848 m
Distance of moon from Earth: 384.4
million $m$
Distance to Andromeda galaxy : $10^{22}$
36. What is the correct relationship between frequency (f) and time period
(T) of a wave?
A. $\mathrm{f} / \mathrm{T}=1$
B. $\mathrm{f}+\mathrm{T}=1$
C. $\mathrm{f}-\mathrm{T}=1$
D. $\mathrm{f} \times \mathrm{T}=1$

Ans. D.
Sol. the speed is the distance traveled by a given point on the wave such as a crest in a given period of time. So while, wave frequency refers to the number of cycles occurring per second, wave speed refers to the meters traveled per second.
37. Which of the following
electromagnetic waves can be detected using Geiger tubes?
A. Gamma rays
B. Ultraviolet rays
C. Microwaves
D. Radio waves

Ans. A.
Sol. The Geiger-Müller (GM) counter alpha and beta particles as to detect ionising radiation or gamma rays. At one end of the tube the radiation enters through a very thin window. This window is usually made of mica.
38. An object is placed at 10 cm in front of a concave mirror of radius of curvature 12 cm . how far is the image formed from the mirror?
A. 10 cm
B. 20 cm
C. 15 cm
D. 25 cm

Ans. C.
Sol. Ray Diagrams - Concave Mirrors If radius of curvature is 12 cm , the focal distance is 6 cm , then use
$1 / f=1 /$ di $+1 /$ do where do is distance of the object from the mirror and di is distance of image from mirror so $1 / 6=1 / \mathrm{di}+1 / 10$ hence di $=15$
39. The Principles of Liberty, Equality and Fraternity of the Indian constitution are borrowed from the $\qquad$ constitution.
A. French
B. Irish
C. Canadian
D. United States

Ans. A.
Sol. The Constitute Assembly was established in 1946 which was framed the Constitution of India. As the President of Constitute Assembly was elected Dr. Rajendra Prasad and the drafting committee headed Dr. B. R. Ambedka . 166 days spread over 2 years, 11 months and 18 days for met the Assembly. The Principles of Liberty, Equality and Fraternity of the Indian
constitution are borrowed from the French constitution.
40. All of the following are the characteristics of a Proportional Representation system, except $\qquad$ .
A. Candidate who wins the elections gets majority of votes
B. Every constituency elects one representative
C. Voter votes for the party
D. Every party gets seats in the legislature in proportion to the percentage of votes that it gets Ans. B.
Sol. Proportional representation (PR) described as electoral systems which reflected proportionately in the elected body by divisions in an electorate. If $n \%$ of the electorate endorsement a particular political party, then
approximate n\% of the seats will be won by that party. All votes contribute to the result is the substance of such systems, which is not just a plurality or a bare majority of them.
41. Which of the following is false with reference to Parliamentary type of executive?
A. President or Monarch may be the head of the state
B. Prime Minister is the head of the Government
C. The Prime Minister is the leader of the majority party in legislature.
D. The Prime Minister is not accountable to the Legislature
Ans. D.
Sol. The Executive is often referred to as Cabinet or Government. The elected members of parliament to head the Executive is elected the Prime Minister. In turn, a Cabinet elected by the Prime Minister that is predominantly made up of elected members of parliament. In the Legislative Assembly, the Executive is accountable.
42. Judges can hold office till $\qquad$ .
A. Till reaching the age of retirement
B. For 5 years
C. Tenure is decided by President
D. Tenure is decided by Parliament

Ans. A.
Sol. Judges can hold office till reaching the age of retirement. Prime Minister Manmohan Singh on August 18 2012, speaking of the celebrations of the Bombay High Court's 150th year. He
said the government was in favour of raising the age of retirement of High Court judges. Presently, Supreme Court judges retire at 65 and High Court judges at 62.
43. Which European country was not one of the signatories of the Treaties of Rome establishing the European Economic Community in 1957?
A. Finland
B. France
C. Italy
D. Belgium

Ans. A.
Sol. The European Economic Community (EEC) was a regional organisation which aimed to bring about economic integration among its member states. In 1957, It was created by the Treaty of Rome. The EEC was incorporated and renamed as the European Community (EC), upon the formation of the European Union (EU) in 1993. Finland and Sweden accede to the European Union (EU) in 1995 enlargement of the European Union saw Austria.
44. Which of the following is an Indian professional player of English billiards and former professional snooker player?
A. Pankaj Advani
B. NarainKarthikeyan
C. PullelaGopichand
D. Dhanraj Pillay

Ans. A.
Sol. The Indian English billiards and snooker player was Pankaj Arjan Advani. He was achieved many awards by the Government of India which was bestowed several awards upon Advani: the Arjuna Award in 2004, Rajiv Gandhi Khel Ratna in 2006, and Padma Shri in 2009. In English billiards, he was achieved a hat-trick of hat-tricks, holding the World, Asian, and Indian National Championship titles simultaneously, in three different years: 2005, 2008 and 2012 and recently in 2017. He became a snooker professional only in 2012, and his first season on the main tour was the 2012/2013 season. Pankaj Advani has won 58 gold: World Titles =18; Asian Titles =8; Asian Games = 2; Australian Open =1; National Titles $=29$.
45. Who wrote the novel "Devdas"?
A. Rabindranath Tagore
B. Premchand
C. Mulk Raj Anand
D. Sarat Chandra Chattopadhayay

Ans. D.
Sol. By Sarat Chandra Chattopadhyay, Devdas is a Bengali romance novel written in 1917 at age of seventeen years. Sarat Chandra Chattopadhyay, alternatively spelt as Sarat Chandra Chatterjee. In early 20th century, he was a prominent Bengali novelist and short story writer. He remains the most popular, most translated, most adapted, and most plagiarized Indian authors of all time. Most of his works deal with the lifestyle, tragedy, struggle of the village people and the contemporary social practices that prevailed in Bengal. 46. $\qquad$ is the largest phylum of
Animalia, which includes insects.
A. Porifera
B. Annelida
C. Mollusca
D. Arthropoda

Ans. D.
Sol. Arthropod is the largest phylum of Animalia, which includes insects. It the largest phylum in the animal kingdom, which includes such familiar forms as lobsters, crabs, spiders, mites, insects, centipedes, and millipedes.
47. On the basis of structural modification of the cells, simple epithelium is divided into all of the following types, except $\qquad$ .
A. cuboidal
B. columnar
C. squamous
D. Cylindrical

Ans. D.
Sol. On the basis of structural modification of the cells, simple epithelium is divided into, These are (i) Squamous, (ii) Cuboidal, (iii) Columnar The squamous epithelium is made of a single thin layer of oblate cells with irregular boundaries. The cuboidal epithelium is composed of a single layer of cube-like cells. The columnar epithelium is composed of a single layer of tall and slender cells.
48. "Lake Palace" built by

MaharanaJagat Singh II is in which city?
A. Udaipur
B. Jodhpur
C. Jaipur
D. Bikaner

Ans. A.
Sol. Under the direction of the Maharana Jagat Singh II "The Lake Palace" was built between 1743 and 1746. In Rajasthan, the royal dynasty of Mewar of Udaipur to 62nd successor. After its founder, it was initially called Jagniwas or Jan Niwas. The great Maharana Jagat

Singh II home was Western provinces of Udaipur in Rajasthan.
49. Which of the following was an eminent Indian painter, sometimes known as India's Frida Kahlo?
A. Sonal Mansingh
B. Shovana Narayan
C. Bhimsen Joshi
D. Amrita Sher Gil

Ans. A.
Sol. Amrita Sher-Gil was flagrant
Hungarian-Indian painter. She was
known in early 20th century as a "pioneer" in modern Indian art and one of the greatest avant-garde women artists. At the age of eight, Sher-Gil started getting formal lessons in the art, drawn to painting at a young age. For her oil painting entitled Young Girls in 1932, at the age of 19 Sher-Gil first gained recognition.
50. Which of the following is a recipient of the "Gandhi Peace Prize"?
A. Indian Space Research Organisation
B. Defence Research and Development Organisation
C. Indian Railways
D. Indian air Force

Ans. A.
Sol. The International Gandhi Peace
Prize is awarded annually by the
Government of India named after
Mahatma Gandhi. The Government of India launched the International Gandhi Peace Prize in 1995 on the occasion of Mohandas Gandhi's 125th birth anniversary. This is an annual award which given to institutions for their contributions towards social and individuals, economic and political transformation through non-violence and other Gandhian methods.

