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| :---: | :---: |
| Participant ID |  |
| Participant Name |  |
| Test Center Name | iON Digital Zone iDZ 1 Sector 62 |
| Test Date | 28/06/2022 |
| Test Time | 12:30 PM - 2:30 PM |
| Subject | Junior Engineer (Civil) or Section Officer (Civil) |

## Section : Mental Ability

Q. 1 Which option will complete the series? GAF, GEF, GIF, GOF, ?
Ans
$X$ A. HAG

- B. GUF
$\times$ C. GAH
X D. FUG
Q. 2 If,
$A+B$ means $A$ is the mother of $B ;$
$A$ - $B$ means $A$ is the brother $B$;
$A \% B$ means $A$ is the father of $B$ and $A \times B$ means $A$ is the sister of $B$,
which of the following shows that $P$ is the paternal grandmother of $Q$ ?
Ans

$$
\begin{aligned}
& \text { A. } \mathrm{P}+\mathrm{R} \% \mathrm{~S}-\mathrm{Q} \\
& \times \text { в. } \mathrm{P} \times \mathrm{Q}-\mathrm{S}+\mathrm{R} \\
& \times \text { с. } \mathrm{Q} \times \mathrm{S}+\mathrm{R} \times \mathrm{P} \\
& \times \text { д. } \mathrm{S}-\mathrm{R}+\mathrm{P} \times \mathrm{Q}
\end{aligned}
$$


Q. 3 If $15^{\text {th }}$ July is Monday, $17^{\text {th }}$ October comes on which day?

Ans
A. Thursday

X B. Wednesday
X C. Tuesday
X D. Monday
Q. 4 Two statements are given followed by three conclusions. The given statements are to be considered true. Decide which of the given conclusions logically follows from the given statements disregarding commonly known facts.

Statement I: All teachers are truthful.
Statement II : All truthful are just.
Conclusion I: Some truthful are teachers.
Conclusion II : No truthful is a teacher.
Conclusion III : Some just are teachers.
Ans
X A. Conclusion I and II follow
B. Conclusion I and III follow
$X$ c. Only conclusion I follows
X D. Conclusion II and III follow
Q. 5 In the word 'STRING', how many pairs of the letters have the same number of letters between them in the word as in the English Alphabet?

Ans
XA. 3
X B. 4
X C. 1

- D. 2
Q. 6 If today is Tuesday, what day will it be after 62 days?

Ans
X A. Tuesday
X B. Thursday
X C. Wednesday
D. Monday
Q. 7 If in each number the positions of the first and third digits are interchanged and 1 is added to the middle digit, which number will be at the third position in ascending order?
827, 485, 319, 743
Ans
A. 827
$X$ в. 743
X С. 319
X D. 485
Q. 8 If,
$A+B$ means that $A$ is the mother of $B$
$A$ - $B$ means $A$ is the sister of $B$
$A \times B$ means $A$ is the father of $B$
$A \div B$ means $A$ is the brother of $B$
Which of the following options mean that $R$ is the grandmother of $S$ ?
Ans
A. $\mathrm{R}+\mathrm{P} \times \mathrm{Q} \div \mathrm{S}$

X в. $P+R-Q \div S$
Xc. $R-P \div Q \times S$
$\times$ D. $Q \times R-P+S$
Q. 9 Which of the following Venn diagrams correctly describes the relationship between jackets, mufflers and winterwear?
Ans
$X$.

X B.

X .


- D.



Q. 10 Find the odd one out.

Ans
A. 75

X B. 115
X С. 207
X D. 299
Q. 11 Find the correct image which matches the relationship of the third and the fourth figure to that of the first two figures.


Ans

Q. 12 Choose the correct box for the given sheet of paper


Ans

$\times$ в.

©

Q. 13 ' $A$ + $B$ ' means $A$ is neither greater nor smaller than $B$ ' $A$ \$ $B$ ' means $A$ is neither greater than nor equal to $B$ ' $A$ @ $B$ ' means $A$ is neither smaller than nor equal to $B$ ' $A$ \% $B$ ' means $A$ is not smaller than $B$
' $A$ \& $B$ ' means $A$ is not greater than $B$

Based on the conditions, which of the following options is correct for the statement given
below?
Statement: P \$ Q + S @ U \& V
Ans
XA.P@V
X B. $\mathrm{Q}+\mathrm{U}$
C. U \$ Q

XD. S \& P
Q. 14

Ans A.D
Х В. A
Х С. в
X D. C
Q. 15 Find the next number in the series.
$165,120,85,60$, ?
Ans
XA. 55
X B. 40

- C. 45

XD. 50
Q. 16 In a certain code PEACEFUL is written as QDBBFEVK. How will you code COMMOTION?

Ans
X A. BLKKPSJNP
X B. DOOPLSNGO

- C. DNNLPSJNO

X D. BMMKORIMO
Q. 17 A and $B$ start moving towards each other from points $P$ and $Q$, respectively, that are 400 m apart. After walking 120 m , B turns right and goes 40 m , then she turns left and goes 80 m . She then turns left again and reaches the road on which she had started walking. If $A$ and $B$ walk with the same speed, what is the distance between them?
Ans
A. 80 m

X B. 100 m
X C. 40 m
X D. 60 m
Q. 18

Ans $\times A$.

- B.
$\times$.
X D.
Q. 19 Choose the odd one out.

Ans
$\times$ A. PIHS
X B. KCAJ
X с. TSUM
D. ETAL
Q. 20 Select the option that is related to the third word in the same way as the second word is related to the first word.
River : Flow :: Pond : ?
Ans
$X$ A. Course
$X$ B. Flux

- C. Stagnant

X D. Drift

## Section : General Awareness

Q. 1 Warren Hastings established the Calcutta Madrassa in which year for the teaching of Mohammedan law?
Ans
A. 1780

X B. 1813
X C. 1872
X D. 1742
Q. 2 Which microfinance institution has an extensive network of branches throughout 22 states in India and offers microloans to women entrepreneurs from low-income households for income generation activities?
Ans
X A. Bandhan Financial Services Limited
B. Asirvad Microfinance Limited

X C. Arohan Financial Services Limited
X D. Cashpor Micro Credit
Q. 3 Which state Government has decided to conduct a large-scale survey, to understand the impact of the COVID-19 pandemic on the psychological and emotional behaviour of school children?

Ans
X A. Gujarat
B. Delhi

X C. Karnataka
X D. Maharashtra
Q. 4 Jallikattu is celebrated in the Indian state of Tamil Nadu as a part of Pongal celebration on which day?
Ans
A. Maattu Pongal day - Third day
B. Kannum Pongal - Fourth day
C. Pongolo Pongal
D. Bhogi - First day
Q. 5 Which Ministry has set up an online portal named 'Raksha Pension Shikayat Nivaran Portal' that aims to resolve pension-related grievances of ex-servicemen (ESM) and their dependents?
Ans
X A. Ministry of Finance
B. Ministry of Defense

X C. Ministry of External Affairs
X D. Ministry of Law and Justice
Q. 6 Which of the following war songs are sung in Nagaland?

Ans
$X$ A. Alha
$X$ B. Bhagawati
X C. Baul
D. Hereileu
Q. 7 Industrial Finance Corporation of India is a development finance institution under the jurisdiction of Ministry of Finance, Government of India which was established in $\qquad$ .

Ans
X A. 1952
X B. 1950
C. 1948

X D. 1945
Q. 8 Which of the following is a scientific device that is used to measure the speed and rate of flow of a fluid that is flowing in a pipe?
Ans
X A. Tonometer

- B. Venturimeter

X C. Tachometer
Х D. Telemeter
Q. 9 The $7^{\text {th }}$ edition of the four-day India International Science Festival (IISF) was held in $\qquad$ from December 10 to 13, 2021.
Ans
Х A. Sikkim

- B. Goa

X C. Assam
X D. Meghalaya
Q. 10 As per India's National Health Profile 2019, life expectancy in India for females is 70.2 in 2012-16 and it is $\qquad$ for males in the same period.
Ans
XA. 754
X B. 68.2
×C. 77.3
D. 67.4
Q. 11 The government of which state has signed Bollywood actor Sanjay Dutt as the brand ambassador on the occasion of the golden jubilee celebrations, marking the $50^{\text {th }}$ year of the naming of the state?

Ans
Х A. Karnataka
B. Arunanchal Pradesh

X C. Kerala
X D. Himachal Pradesh
Q. 12 Chalo, Wancho and Pasi Kongki are the folk dances of which of the following state?

Ans
X A. Assam
X B. Mizoram
Х C. Odisha
D. Arunachal Pradesh
Q. 13 The Indian Space Research Organisation has signed an agreement with which Chinese smart devices maker to strengthen the research and development of the NavIC messaging service?

Ans $X$ A. Lenovo
B. Oppo

X C. Xiaomi
X D. Huawei
Q. 14 One of the oldest Buddhist monuments in India, the Great Stupa at Sanchi was originally built in the 3rd century BCE by which king?
Ans
X A. Krishnadevaraya
B. Ashoka

X C. Prithviraj Chauhan
$X$ D. Shah Jahan
Q. 15 The Indian Space Research Organisation (ISRO) has signed $\qquad$ for launching foreign satellites during 2021-2023.
Ans
$X$ A. seven agreements with five countries
$X$ B. four agreements with four countries
$X$ C. three agreements with two countries
D. six agreements with four countries
Q. 16 Who served from 1809 to 1814 in the Revenue Department of the East India Company also worked as a personal Diwan to Woodforde and Digby?
Ans
A. Raja Ram Mohan Roy

X B. Chandrashekhar Azad
X C. Jyotiba Phule
X D. Bal Gangadhar Tilak

Q. 17 The Koppal Toy Cluster (KTC), which is being developed in the district of Koppalin of $\qquad$ is the first such infrastructure in the country.
Ans
X A. Kerala
B. Karnataka

X C. Rajasthan
X D. Gujarat
Q. 18 Big Dipper, the Great Bear or the Saptarshi is an example of $\qquad$
Ans

- A. Constellations
B. Asteroids

X C. Meteoroids
$X$ D. Planets
Q. 19 The women's team from Ladakh has lifted the $\qquad$ National Women's Ice Hockey Championship in Himachal Pradesh.
Ans

$$
\begin{aligned}
& X \text { A. } 5^{\text {th }} \\
& \text { B. } 9^{\text {th }} \\
& \times \text { C. } 8^{\text {th }} \\
& \times \text { D. } 6^{\text {th }}
\end{aligned}
$$

Q. 20 TCS partnered with whom to become the new title sponsor and official IT services and technology consulting partner of the Toronto Waterfront Marathon through November 2026?
Ans $\quad \times$ A. UK Running Series
B. Canada Running Series

X C. Australia Running Series
X D. US Running Series

## Section : Arithmetic Ability

Q. 1 The ratio of the amount for 2 years under compound interest annually and for one year under simple interest is $7: 6$. When the rate of interest is same, find the rate of interest. (upto two decimals)
Ans
A. 16.67\%

X B. $13.67 \%$
X С. $15.67 \%$
X D. 14.67\%
Q. 2

Ans
$\times$ А. 3
$X$ в. 0
C. 2

X D. 1
Q. 3 The effective annual rate of interest corresponding to a compound interest of $10 \%$ per annum payable half yearly is:
Ans
A. 10.25\%

X B. $12.25 \%$
X C. 9.25\%
X D. 11.25\%
Q. 4

Ans
XA. 5

- B. 6
Xc. 3

X D. 4
Q. 5 Subtracting $35 \%$ of $P$ from $P$ is equivalent to multiplying $P$ by:

Ans
A. 0.65 P
$X$ B. 0.63 P
X C. 0.55 P
X D. 0.64 P
Q. 6 The three sides of a triangle measure $5 \mathrm{~cm}, 12 \mathrm{~cm}$ and 13 cm respectively. A rectangle equal in area to the triangle has a length of 10 cm . The perimeter of the rectangle is
Ans
X A. 24 cm
-B. 26 cm
X C. 23 cm
$X$ D. 25 cm

Q. 7 In a maternity Centre $6 \%$ of all the child birth result is twins. What is the approximate percentage of twins out of total children born. (upto one decimal)
Ans
X A. 9.3
X B. 8.3
C. 11.3

X D. 10.3
Q. 8 HCF of two numbers $A$ and $B$ is 25 . HCF of two other numbers $C$ and $D$ is 32 . What will be the HCF of $A, B, C$ and $D$
Ans
ХA. 2

- B. 1
$\times$ С. 3
入D. 5
Q. 9 A certain number of people completed a job in 21 days. If there were 3 persons less, the work would have taken 7 more days. How many persons were there initially?
Ans
XA. 10
X B. 11
- C. 12

X D. 13
Q. 10 Three friends A, B and C donate $6 \%, 5 \%$ and $7 \%$ of their salary to a trust in the given order. Salary of $A$ and $B$ is same and the difference of their donations is ₹ 120 . The total donation by $A$ and $B$ is ₹ 350 more than $C$ 's donation. What is the percentage of the total salary to the three donations. (upto two decimals)
Ans
× A. 4.02
Х В. 4.15
$\times$ C. 3.46
D. 6.05
Q. 11

Ans
XA. 2017-18

- B. 2018-19

X C. 2016-17
X D. 2015-16

Q. 12 Ravi can do three-fifth of the work in 9 days and Rakesh can finish the remaining in 14 days. How long would they take to finish it together?
Ans
X A. 10 days
Х В. 11.5 days
C. 10.5 days

X D. 11 days
Q. 13 A square is inscribed in a circle which is inscribed in an equilateral triangle. If one side of the triangle is 6 cm . Find the area of the square.
Ans
$\times \mathrm{A} .7 \mathrm{~cm}^{2}$

- B. $6 \mathrm{~cm}^{2}$
$X$ с. $5 \mathrm{~cm}^{2}$
$\times$ D. $4 \mathrm{~cm}^{2}$
Q. 14 Find the total number of composite factors $\mathrm{N}=340$.

Ans
$\times$ A. 7
X в. 9
X с. 6
D. 8
Q. 15

Ans $\times$ A. 95589
X B. 95598
C. 95599

X D. 95636
Q. 16 Five gallons are drawn from a cask full of wine. It is then filled with water. Five gallons of mixture are again drawn and the cask is refilled with water. The ratio of the quantity of wine now left in the cask to that of the mixture in it $16: 25$. How much does the cask hold.
Ans
X A. 21 gallons
X B. 24 gallons
C. 25 gallons

X D. 22 gallons


Q. 17 Average age of $A, B$ and $C$ is 72 years, however when $D$ joins them then the average comes down to 70 . Now a new person $E$ whose age is 4 years more than $D$ replaces $A$ and the new average is 69 years. What is the age of $A$ ?
Ans
X A. 73 years
B. 72 years
$\times$ C. 71 years
X D. 70 years
Q. 18 A toy consists of a base that is the section of a sphere and a conical top. The volume of the conical top $36 \pi \mathrm{~cm}^{2}$ and its height is 12 cm . The total height of the toy is 20 cm . The volume of the sphere from which the base has been extracted is:
Ans

- A. $126.4 \pi$

X B. $125 \pi$
X с. $127.4 \pi$
X D. $127 \pi$
Q. 19

Ans
$X$ A. Kerala
$X$ B. Telengana
X C. Andhra Pradesh
D. Chennai
Q. 20

Ans $\quad \times$ A. 4.52
X B. 4.25

- C. 4.34

X D. 4.36

## Section : General English

Q. 1 Complete the sentence using an appropriate adverb choosing from the following options given.
Saad isn't very well. He still hasn't $\qquad$ recovered from Covid.

Ans
$X$ A. highly
$X$ B. deeply
C. fully

X D. hardly
Q. 2 Given below are four jumbled sentences select the option that gives their correct logical sequence.
A. It is the water in cellular organic matter that converts microwaves to heat energy with great efficiency and rapidity whereas other components such as starch, cellulose and protein are nowhere near as efficient.
B. Least effective as an energy converter is fatty tissue which normally contains a very small amount of moisture.
C. The most important material in any food is water.
D. It is the major constituent of the cellular material and many foods contain over $70 \%$ of their normal weight as water.

Ans

- A. CDAB

Х В. ACDB
Х С. BADC
X D. CADB
Q. 3 Fill in the blank with the correctly spelled word choosing from the options given below. Each character has its personality, and some of them are rather $\qquad$ -

Ans
X A. humeros
B. humorous

X C. humerous
X D. humoros
Q. 4 Select the most appropriate Synonym of the given word.

ACCOMPLISH
Ans
Х A. guide

- B. conclude

ХC. freeze
X D. halt


Q. 5 Select the most appropriate option to fill in the blank. I like the little peddler $\qquad$ has a crooked nose.

Ans
A. Who

X B. What
X C. Which
X D. When
Q. 6 Read the sentence and select the homophone which will correctly complete the sentence. Fools rush in $\qquad$ angels fear to Tread.
Ans
X A. Wire
Х B. Were

- C. Where

X D. Weir
Q. 7 Given below are four jumbled sentences select the option that gives their correct logical sequence.
A. The domestic pressure cooker is usually constructed of heavy gauge aluminium and the pressure is regulated by weights placed upon a release valve.
B. A common practice in pressure cooking is to allow a copious flow of steam from the release valve before capping it with weights.
C. A safety valve is always fitted to prevent pressure inadvertently building up beyond the safe and specified level for the vessel construction.
D. This ensures that all air is removed before the cooking process starts.

Ans
Х A. CDAB
Х B. ADBC
Х С. BADC

- D. ACBD
Q. 8 Put the verbs in brackets into correct or more suitable verb form (future tense) choosing from the options given below.
Mr. Mehta (give) another lecture at the same time next week.
Ans
X A. will gives
B. will be giving
× C. will gave
$\chi$ D. gave
Q. 9 Fill in the blank with the correctly spelled word choosing from the options given below. After observing the man and woman treating each other, we made an $\qquad$ that they were married.

Ans
A. inference

X B. inferance
X C. infarance
X D. infernce
Q. 10 Complete the sentence using an appropriate preposition choosing from the following options given.
___ the storm comes the calm.
Ans
A. after
$X$ B.above
X C. across
X D. on
Q. 11 Select the most appropriate option to fill in the blank.

A man can't be too in the choice of his enemies.
Ans
$\times \mathrm{A}$. Connecting
$X$ B. Cheerful
C. Careful
$X$ D. Striking
Q. 12 Select the most appropriate Antonym of the given word.

DAZZLE
Ans $\quad \times$ A. blabber
$X$ B. shoot
C. $\operatorname{dim}$

X D. roam
Q. 13 Complete the sentence using an appropriate preposition choosing from the following options given.
I have been learning the violin $\qquad$ I was seven.
Ans
A. Since
$X$ B. If
X C. From
X D. As
Q. 14 Select the most appropriate meaning which best expresses the meaning of the given Idiom. I have HIT UPON a good plan to get rid of him.
Ans
$X$ A. Curated
B. Found

X C. Created
X D. Lost
Q. 15 Select the most appropriate meaning which best expresses the meaning of the given Idiom in the bold.
He is ready to DISPOSE OFF his car for Rs.1,50,000.
Ans
$X$ A. ruin
B. sell

X C. destroy
X D. lend

## Comprehension:

Read the following passage and answer the questions given below.

## FEEDING THE PRETERM BABY

Studies conducted at Sooriya Hospital, Chennai in 2017 on premature babies showed that swabbing the insides of cheeks with colostrum several times a day helps to bring down the incidence of hospital-acquired infections and speeds up overall recovery.
The preterm babies are best fed with unprocessed human milk obtained from their mothers. It has been shown that milk of mothers delivering prematurely has higher protein chloride and sodium content which is suitable for the nutritional needs of low-birth-weight babies. Antimicrobial property of breast milk is of great importance to the preterm baby and the incidence of infectious sepsis and meningitis are greatly reduced. If the baby does not gain weight satisfactorily with breast milk alone, dietary supplements like vegetable oils (corn oil, groundnut oil) may be used which increase the caloric value without increasing its volume. The advantages of feeding breast milk to preterm babies are availability of easily digestible protein and fat and feeding tolerance. Factors in human milk may stimulate Gl growth, motility and maturation. Enzymes naturally present in human milk help in the absorption and utilization of nutrients.
The decision whether the baby is to be breast fed or through a gavage is guided by maturity, birth weight and general condition of the baby. The infant can be started with expressed mother's milk. Bolus, intermittent, naso-gastric tube feeds every 2 hours in small babies and every 3 hours in larger babies can be done. Initial volume used will be as low as $1-2 \mathrm{ml}$ for feeding infants of 1000 g or less or as much as $4-5 \mathrm{ml}$ per feed for an infant of 1500 g . If oral feed is tolerated, then increase the volume of feeding by $1 \mathrm{ml} /$ day in smaller infants or by as much as $3-5 \mathrm{ml}$ in the larger infants. Feeding must be reduced, withheld or even omitted entirely when there is gastric retention or abdominal distention. Ultimately the volume of intake should be $150-170 \mathrm{ml} / \mathrm{kg} /$ day and calorie value $110-120 \mathrm{ml} / \mathrm{kg} / \mathrm{day}$. If the rate of weight gain is low, the calorie intake is increased by adding vegetable oil (coconut oil or peanut oil, 0.5 ml every other meal). Most infants begin to gain more rapidly as their postnatal weight approaches 1400-1500 g and their caloric intake increases.

## SubQuestion No : 16

Q. 16 Fill in the blanks with correct word (from the passage) choosing from the options given below.
Enzymes naturally present in human milk help in the $\qquad$ and $\qquad$ of nutrients.

Ans $\quad$ A. Reduction and Retention
B. Absorption and Utilisation
$X$ C. Sodium and Protein
X D. Sepsis and Meningitis

## Comprehension:

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SubQuestion No : 17

## Q. 17 What does the caloric value of infants range from?

Ans
A. 110-120 ml/kg/day

X B. 130-160 ml/kg/day
X C. $1400-1500 \mathrm{~g}$
X D. 150-170 ml/kg/day


## Comprehension:

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SubQuestion No : 18
Q. 18 Which quality of the breast milk reduces the higher chances of infectious sepsis and meningitis in the preterm babies?
Ans
A. Antimicrobial

X B. Hypoglycaemic
X C. Antibacterial
X D. Anti-inflammatory


## Comprehension:

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Studies conducted at Sooriya Hospital, Chennai in 2017 on premature babies showed that swabbing the insides of cheeks with colostrum several times a day helps to bring down the incidence of hospital-acquired infections and speeds up overall recovery.
The preterm babies are best fed with unprocessed human milk obtained from their mothers. It has been shown that milk of mothers delivering prematurely has higher protein chloride and sodium content which is suitable for the nutritional needs of low-birth-weight babies. Antimicrobial property of breast milk is of great importance to the preterm baby and the incidence of infectious sepsis and meningitis are greatly reduced. If the baby does not gain weight satisfactorily with breast milk alone, dietary supplements like vegetable oils (corn oil, groundnut oil) may be used which increase the caloric value without increasing its volume. The advantages of feeding breast milk to preterm babies are availability of easily digestible protein and fat and feeding tolerance. Factors in human milk may stimulate GI growth, motility and maturation. Enzymes naturally present in human milk help in the absorption and utilization of nutrients.
The decision whether the baby is to be breast fed or through a gavage is guided by maturity, birth weight and general condition of the baby. The infant can be started with expressed mother's milk. Bolus, intermittent, naso-gastric tube feeds every 2 hours in small babies and every 3 hours in larger babies can be done. Initial volume used will be as low as $1-2 \mathrm{ml}$ for feeding infants of 1000 g or less or as much as $4-5 \mathrm{ml}$ per feed for an infant of 1500 g . If oral feed is tolerated, then increase the volume of feeding by $1 \mathrm{ml} /$ day in smaller infants or by as much as $3-5 \mathrm{ml}$ in the larger infants. Feeding must be reduced, withheld or even omitted entirely when there is gastric retention or abdominal distention. Ultimately the volume of intake should be $150-170 \mathrm{ml} / \mathrm{kg} /$ day and calorie value $110-120 \mathrm{ml} / \mathrm{kg} /$ day. If the rate of weight gain is low, the calorie intake is increased by adding vegetable oil (coconut oil or peanut oil, 0.5 ml every other meal). Most infants begin to gain more rapidly as their postnatal weight approaches 1400-1500 g and their caloric intake increases.

SubQuestion No : 19
Q. 19 Select the appropriate meaning of the word. MOTILITY
Ans $\quad X$ A. Drift
B. Portability
$X$ C. Lethal
X D. Morse


## Comprehension:

Read the following passage and answer the questions given below.
FEEDING THE PRETERM BABY
Studies conducted at Sooriya Hospital, Chennai in 2017 on premature babies showed that swabbing the insides of cheeks with colostrum several times a day helps to bring down the incidence of hospital-acquired infections and speeds up overall recovery.
The preterm babies are best fed with unprocessed human milk obtained from their mothers. It has been shown that milk of mothers delivering prematurely has higher protein chloride and sodium content which is suitable for the nutritional needs of low-birth-weight babies. Antimicrobial property of breast milk is of great importance to the preterm baby and the incidence of infectious sepsis and meningitis are greatly reduced. If the baby does not gain weight satisfactorily with breast milk alone, dietary supplements like vegetable oils (corn oil, groundnut oil) may be used which increase the caloric value without increasing its volume. The advantages of feeding breast milk to preterm babies are availability of easily digestible protein and fat and feeding tolerance. Factors in human milk may stimulate GI growth, motility and maturation. Enzymes naturally present in human milk help in the absorption and utilization of nutrients.
The decision whether the baby is to be breast fed or through a gavage is guided by maturity, birth weight and general condition of the baby. The infant can be started with expressed mother's milk. Bolus, intermittent, naso-gastric tube feeds every 2 hours in small babies and every 3 hours in larger babies can be done. Initial volume used will be as low as $1-2 \mathrm{ml}$ for feeding infants of 1000 g or less or as much as $4-5 \mathrm{ml}$ per feed for an infant of 1500 g . If oral feed is tolerated, then increase the volume of feeding by $1 \mathrm{ml} /$ day in smaller infants or by as much as $3-5 \mathrm{ml}$ in the larger infants. Feeding must be reduced, withheld or even omitted entirely when there is gastric retention or abdominal distention. Ultimately the volume of intake should be $150-170 \mathrm{ml} / \mathrm{kg} /$ day and calorie value $110-120 \mathrm{ml} / \mathrm{kg} /$ day. If the rate of weight gain is low, the calorie intake is increased by adding vegetable oil (coconut oil or peanut oil, 0.5 ml every other meal). Most infants begin to gain more rapidly as their postnatal weight approaches 1400-1500 g and their caloric intake increases.

SubQuestion No : 20
Q. 20 Mother's milk contains higher content of $\qquad$
Ans
X A. Sodium Chloride and Nickel
$X$ B. Calcium Chloride and Zinc
X C. Magnesium Chloride and Sodium

- D. Protein Chloride and Sodium


## Section : General Hindi

Q. 1 'चुपड़ी और दो-दो' लोकोक्ति का अर्थ है-

Ans $X$ A. किसी को कष्ट देकर मौज करना।
B. उत्तम वस्तु और वह भी इतनी ज़्यादा।
$X \mathrm{C}$. थोड़ा-थोड़ा जमा करके अमीर हो जाओगे।
X . थोड़ी वस्तु से बड़ा काम नहीं हो सकता।

## Q. 2 'चापलूसी करने' के अर्थ में निम्न में से किस मुहावरे का प्रयोग होगा-

Ans
$\times$ A. ज़मीन आसमान एक करना
X B. कान भरना
X C. आँखे बिछाना
D. जूते चाटना
Q. 3 'अनल' पर्याय है-

Ans $\times$ A. बादल का
$X$ B. वायु का
C. जल का
D. अग्नि का

## Q. 4 'भ्रावण' में है-

Ans
X A. दीर्घ संधि
X B. गुण संधि
$X$ C. यण् संधि
D. अयादि संधि

## Q. 5 अमावस्या का विलोम है-

Ans $\times$ A. कुहू
X B. चाँदनी
$X$ C. प्रकाश
D. पूर्णिमा

## Q. 6 'कटु सत्य कहना' के अर्थ में निम्न में से किस मुहावरे का प्रयोग होता है-

Ans
A. खरी-खरी सुनाना

X B. खरी-खोटी सुनाना
$X$ C. एक आँख से देखना
X D. उठा न रखना
Q. 7 'इतनी गर्मी पड़े तो सारे ग्लेशियर ही पिघल जाएँ।' वाक्य उदाहरण है-

Ans $\times$ A. सामान्य भविष्य का
B. हेतुहेतुमद्भविष्य का

X C. संभाव्य वर्तमान का
D. संभाव्य भविष्य का

## Q. 8 वाक्य विन्यास की दृष्टि से शुद्ध वाक्य है-

Ans $\times$ A. रावण को मारा अयोध्या के राजा दशरथ के पुत्र राम ने।
$X$ B. राम अयोध्या के राजा दशरथ के पुत्र ने रावण को मारा।
C. दशरथ अयोध्या के राजा के पुत्र राम ने रावण को मारा।
D. अयोध्या के राजा दशरथ के पुत्र राम ने रावण को मारा।
Q. 9 सर्वोचित शब्द से रिक्त स्थान भरेंसेठ जी ने करोड़ों रुपये का $\qquad$ किया।
Ans
$X A$. अर्जुन
X B. अर्चन

- C. अर्जन

X D. अंजन

## Q. 10 'लता मंगेशकर गीत गा रही हैं।' वाक्य उदाहरण है-

Ans $\times$ A. सामान्य वर्तमान का
B. तात्कालिक वर्तमान का

X C. सम्भाव्य वर्तमान का
X D. संदिग्ध वर्तमान का
Q. 11 निम्न में से गंगा का पर्यायवाची शब्द है-

Ans $\times$ A. ईहा
X B. वासव
X c. आगार
D. सुरसरित
Q. 12 'अकरम ने रोटी खायी।' वाक्य में कारक है-

Ans $\times$ A. अपादान कारक
X B. सम्बंध कारक
X C. करण कारक
D. कर्ता कारक
Q. 13 निम्न में से तुलनावाचक क्रियाविशेषण शब्द है-

Ans
XA. यथाक्रम
X B. किंचित
$X$ C. काफी
D. उतना
Q. 14 निम्न शब्दों में से गुणवाचक विशेषण का उदाहरण नहीं है-

Ans
$X A$. दुष्ट
$X$ B. सुडौल
C. दूना

X D. सतही
Q. 15 निम्न में से कौन-सा विलोम युग्म सुमेलित नहीं है-

Ans
$\times$ A. आशा-निराशा
X B. अवनत-उन्नत
C. अथ - प्रारम्भ
$X$ D. आय -व्यय

## Comprehension:

दिए गए गद्यांश के आधार पर प्रश्न के उत्तर दीजिए।
हिंदी क्षेत्र में पुनर्जागरण की चिंगारी औपनिवेशिक शोषण और दमन के प्रति असंतोष से फूटी, जिसका प्रतिफलन 1857 का औपनिवेशिक शासन से विद्रोह था। इतिहासकारों ने स्वीकार किया है कि यद्यपि इस विद्रोह के ज़ाहिर नेता ब्रिटिश शासन से असंतुष्ट भारतीय सामंत थे, पर उन्हें किसानों, सैनिकों, साधु-संतों और मुल्ला-मौलवियों का प्रत्यक्ष - अप्रत्यक्ष दोनों प्रकार का समर्थन प्राप्त था। यह विद्रोह अमानुषिक निर्द्यता के साथ कुचल दिया गया, पर उसकी चिंगारी दमन की राख के नीचे बची रह गयी। इस राजनीतिक विद्रोह के साथ ही बंगाल का सामाजिक पुनर्जागरण हिंदी क्षेत्र में पहुँचा। बंगाल नवजागरण के एक प्रमुख नेता केशवचंद्र सेन ने पंजाब को और आर्य समाज के संस्थापक स्वामी दयानंद सरस्वती ने हिंदी क्षेत्र को सामाजिक जागरण-आंदोलन के किए चुना। ठीक इसी समय सर सैयद अहमद और अब्दुल्ला साहब आदि ने मुस्लिम समाज में 'नयी रौशनी' फैलाने का आंदोलन शुरू किया। दुर्भाग्य की बात यह हुई कि अंग्रेज़ हिंदुओं-मुसलमानों की उस एकता को, जो 1857 के विद्रोह के समय पैदा हुई थी, अपनी कूटनीतिक चालों से भंग करने में सफल हो गये। 1885 में जब इण्डियन नेशनल कांग्रेस की स्थापना हुई, तब तक हिंदू और मुस्लिम समाज की फाँक चिंता जनक रूप ले चुकी थी। यह हिंदी-उर्दू क्षेत्र की सबसे दुर्भाग्यपूर्ण नियति थी।

SubQuestion No : 16
Q. 16 निम्न में से कौन-सा शब्द युग्म अन्य से भिन्न है?

Ans $\times$ A. जागरण-आंदोलन
$X$ B. मुल्ला-मौलवी
C. प्रत्यक्ष - अप्रत्यक्ष


## Comprehension:

दिए गए गद्यांश के आधार पर प्रश्न के उत्तर दीजिए।
हिंदी क्षेत्र में पुनर्जागरण की चिंगारी औपनिवेशिक शोषण और दमन के प्रति असंतोष से फूटी, जिसका प्रतिफलन 1857 का औपनिवेशिक शासन से विद्रोह था। इतिहासकारों ने स्वीकार किया है कि यद्यपि इस विद्रोह के ज़ाहिर नेता ब्रिटिश शासन से असंतुष्ट भारतीय सामंत थे, पर उन्हें किसानों, सैनिकों, साधु-संतों और मुल्ला-मौलवियों का प्रत्यक्ष - अप्रत्यक्ष दोनों प्रकार का समर्थन प्राप्त था। यह विद्रोह अमानुषिक निर्दयता के साथ कुचल दिया गया, पर उसकी चिंगारी दमन की राख के नीचे बची रह गयी। इस राजनीतिक विद्रोह के साथ ही बंगाल का सामाजिक पुनर्जागरण हिंदी क्षेत्र में पहुँचा। बंगाल नवजागरण के एक प्रमुख नेता केशवचंद्र सेन ने पंजाब को और आर्य समाज के संस्थापक स्वामी दयानंद सरस्वती ने हिंदी क्षेत्र को सामाजिक जागरण-आंदोलन के किए चुना। ठीक इसी समय सर सैयद अहमद और अब्दुल्ला साहब आदि ने मुस्लिम समाज में 'नयी रौशनी' फैलाने का आंदोलन शुरू किया। दुर्भाग्य की बात यह हुई कि अंग्रेज़ हिंदुओं-मुसलमानों की उस एकता को, जो 1857 के विद्रोह के समय पैदा हुई थी, अपनी कूटनीतिक चालों से भंग करने में सफल हो गये। 1885 में जब इण्डियन नेशनल कांग्रेस की स्थापना हुई, तब तक हिंदू और मुस्लिम समाज की फाँक चिंता जनक रूप ले चुकी थी। यह हिंदी-उर्दू क्षेत्र की सबसे दुर्भाग्यपूर्ण नियति थी।

SubQuestion No: 17
Q. 17 हिंदी क्षेत्र में पुनर्जागरण के उद्भव का निम्न में से क्या कारण था?

Ans $X$ A. हिंदू-मुस्लिम एकता
B. औपनिवेशिक शोषण एवं दमन

X C. 1857 का विद्रोह
$X$ D. इण्डियन नेशनल कांग्रेस की स्थापना

## Comprehension:

दिए गए गद्यांश के आधार पर प्रश्न के उत्तर दीजिए।
हिंदी क्षेत्र में पुनर्जागरण की चिंगारी औपनिवेशिक शोषण और दमन के प्रति असंतोष से फूटी, जिसका प्रतिफलन 1857 का औपनिवेशिक शासन से विद्रोह था। इतिहासकारों ने स्वीकार किया है कि यद्यपि इस विद्रोह के ज़ाहिर नेता ब्रिटिश शासन से असंतुष्ट भारतीय सामंत थे, पर उन्हें किसानों, सैनिकों, साधु-संतों और मुल्ला-मौलवियों का प्रत्यक्ष - अप्रत्यक्ष दोनों प्रकार का समर्थन प्राप्त था। यह विद्रोह अमानुषिक निर्दयता के साथ कुचल दिया गया, पर उसकी चिंगारी दमन की राख के नीचे बची रह गयी। इस राजनीतिक विद्रोह के साथ ही बंगाल का सामाजिक पुनर्जागरण हिंदी क्षेत्र में पहुँचा। बंगाल नवजागरण के एक प्रमुख नेता केशवचंद्र सेन ने पंजाब को और आर्य समाज के संस्थापक स्वामी द्यानंद सरस्वती ने हिंदी क्षेत्र को सामाजिक जागरण-आंदोलन के किए चुना। ठीक इसी समय सर सैयद अहमद और अब्दुल्ला साहब आदि ने मुस्लिम समाज में 'नयी रौशनी' फैलाने का आंदोलन शुरू किया। दुर्भाग्य की बात यह हुई कि अंग्रेज़ हिंदुओं-मुसलमानों की उस एकता को, जो 1857 के विद्रोह के समय पैदा हुई थी, अपनी कूटनीतिक चालों से भंग करने में सफल हो गये। 1885 में जब इण्डियन नेशनल कांग्रेस की स्थापना हुई, तब तक हिंदू और मुस्लिम समाज की फाँक चिंता जनक रूप ले चुकी थी। यह हिंदी-उर्दू क्षेत्र की सबसे दुर्भाग्यपूर्ण नियति थी।

SubQuestion No: 18
Q. 18 हिंदी-उर्दू क्षेत्र के लिए सबसे दुर्भाग्यपूर्ण नियति निम्न में से थी।


Ans
$\times$ A. सामाजिक पुनरुत्थान आंदोलन
X B. 1857 के विद्रोह के पश्चात् सरकारी दमन
C. हिंदू-मुस्लिम एकता को तोड़ने में अंग्रेज़ों को सफलता प्राप्त होना
D. सर सैयद अहमद द्वारा मुस्लिम समाज के उत्थान के लिए कार्य

## Comprehension:

दिए गए गद्यांश के आधार पर प्रश्न के उत्तर दीजिए।
हिंदी क्षेत्र में पुनर्जागरण की चिंगारी औपनिवेशिक शोषण और दमन के प्रति असंतोष से फूटी, जिसका प्रतिफलन 1857 का औपनिवेशिक शासन से विद्रोह था। इतिहासकारों ने स्वीकार किया है कि यद्यपि इस विद्रोह के ज़ाहिर नेता ब्रिटिश शासन से असंतुष्ट भारतीय सामंत थे, पर उन्हें किसानों, सैनिकों, साधु-संतों और मुल्ला-मौलवियों का प्रत्यक्ष - अप्रत्यक्ष दोनों प्रकार का समर्थन प्राप्त था। यह विद्रोह अमानुषिक निर्दयता के साथ कुचल दिया गया, पर उसकी चिंगारी दमन की राख के नीचे बची रह गयी। इस राजनीतिक विद्रोह के साथ ही बंगाल का सामाजिक पुनर्जागरण हिंदी क्षेत्र में पहुँचा। बंगाल नवजागरण के एक प्रमुख नेता केशवचंद्र सेन ने पंजाब को और आर्य समाज के संस्थापक स्वामी दयानंद सरस्वती ने हिंदी क्षेत्र को सामाजिक जागरण-आंदोलन के किए चुना। ठीक इसी समय सर सैयद अहमद और अब्दुल्ला साहब आदि ने मुस्लिम समाज में 'नयी रौशनी' फैलाने का आंदोलन शुरू किया। दुर्भाग्य की बात यह हुई कि अंग्रेज़ हिंदुओं-मुसलमानों की उस एकता को, जो 1857 के विद्रोह के समय पैदा हुई थी, अपनी कूटनीतिक चालों से भंग करने में सफल हो गये। 1885 में जब इण्डियन नेशनल कांग्रेस की स्थापना हुई, तब तक हिंदू और मुस्लिम समाज की फाँक चिंता जनक रूप ले चुकी थी। यह हिंदी-उर्दू क्षेत्र की सबसे दुर्भाग्यपूर्ण नियति थी।

SubQuestion No: 19
Q. 19 इण्डियन नेशनल कांग्रेस की स्थापना कब हुई?

Ans $\times$ A. 1985
X B. 1857
X C. 1957
D. 1885

## Comprehension:

दिए गए गद्यांश के आधार पर प्रश्न के उत्तर दीजिए।
हिंदी क्षेत्र में पुनर्जागरण की चिंगारी औपनिवेशिक शोषण और दमन के प्रति असंतोष से फूटी, जिसका प्रतिफलन 1857 का औपनिवेशिक शासन से विद्रोह था। इतिहासकारों ने स्वीकार किया है कि यद्यपि इस विद्रोह के ज़ाहिर नेता ब्रिटिश शासन से असंतुष्ट भारतीय सामंत थे, पर उन्हें किसानों, सैनिकों, साधु-संतों और मुल्ला-मौलवियों का प्रत्यक्ष - अप्रत्यक्ष दोनों प्रकार का समर्थन प्राप्त था। यह विद्रोह अमानुषिक निर्दयता के साथ कुचल दिया गया, पर उसकी चिंगारी दमन की राख के नीचे बची रह गयी। इस राजनीतिक विद्रोह के साथ ही बंगाल का सामाजिक पुनर्जागरण हिंदी क्षेत्र में पहुँचा। बंगाल नवजागरण के एक प्रमुख नेता केशवचंद्र सेन ने पंजाब को और आर्य समाज के संस्थापक स्वामी दयानंद सरस्वती ने हिंदी क्षेत्र को सामाजिक जागरण-आंदोलन के किए चुना। ठीक इसी समय सर सैयद अहमद और अब्दुल्ला साहब आदि ने मुस्लिम समाज में 'नयी रौशनी' फैलाने का आंदोलन शुरू किया। दुर्भाग्य की बात यह हुई कि अंग्रेज़ हिंदुओं-मुसलमानों की उस एकता को, जो 1857 के विद्रोह के समय पैदा हुई थी, अपनी कूटनीतिक चालों से भंग करने में सफल हो गये। 1885 में जब इण्डियन नेशनल कांग्रेस की स्थापना हुई, तब तक हिंदू और मुस्लिम समाज की फाँक चिंता जनक रूप ले चुकी थी। यह हिंदी-उर्दू क्षेत्र की सबसे दुर्भाग्यपूर्ण नियति थी।

## SubQuestion No: 20

## Q. 20 हिंदी क्षेत्र में पुनर्जागरण के संदर्भ में असत्य है-

Ans

## A. केशवचंद्र सेन ने बंगाल को और स्वामी दयानंद सरस्वती ने पंजाब को सामाजिक जागरण-आंदोलन के लिए

 चुना।X B. सर सैयद और अब्दुल्ला साहब जैसे सुधारकों ने मुस्लिम समाज में नयी रौशनी फैलाई।
C. हिंदी क्षेत्र में पुनर्जागरण बंगाल के सामाजिक पुनर्जागरण का ही प्रसार था।

X D. पुनर्जागरण का प्रतिफलन 1857 के विद्रोह के रूप में हुआ।
Q. 1

Ans A.
$\times$ в.
$\times$ c.
$X$ D.

## Q. 2 How many Number of Resistances are used in a Wheatstone Bridge?

Ans
XA. 5
X B. 3
X С. 6
D. 4
Q. 3 If the rows and columns of a matrix are interchanged, then it is called as $\qquad$ _.
Ans A. Transpose of a Matrix
X B. Skew Symmetric Matrix
X C. Triangular Matrix
X D. Orthogonal Matrix
Q. 4 A body of weight 200 Newtons is placed on a rough horizontal plane. Determine the coefficient of friction if a horizontal force of 120 Newtons just causes the body to slide over the horizontal plane.
Ans
XA. 1.2
$\times$ B. 1.0
X с. 1.6

- D. 0.6

Q. 5 The velocity ratio of two pulleys connected by an open or crossed belt is:

Ans $\quad \times$ A. directly proportional to their diameters
$X$ B. inversely proportional to the square of their diameters
X C. directly proportional to the square of their diameters
D. inversely proportional to their diameters
Q. 61 Watt = __ Joule / second

Ans A. 1
X B. 10
X C. 100
X D. 1000
Q. 7 Thevenin`s Theorem states that, any linear active Double terminal network containing voltage and resistance sources can be replaced by a $\qquad$ Voltage source in $\qquad$ with
$\qquad$ resistance.
Ans $\quad \times$ A. Single, Parallel, Single
B. Single, Series, Single

X c. Single, Parallel, Two
X D. Single, Series, Two

Question ID : 1841223210
Q. 8

Ans $\times$ A.

- B.
$X$ c.
$\times \mathrm{D}$.
Q. 9 ___ states, "Every body continues in a state of rest or uniform motion in a straight line unless it is compelled to change that state by some external force acting on it."
Ans
A. Newton's First Law of Motion

X B. Newton's Third Law of Motion
X C. Newton's Law of Gravitation
X D. Newton's Second Law of Motion

Q. 10

Ans $X A$.
$X$ B.
C.
$\times$ D.
Q. 11 Among the two series given : Series $1: 1,2,4,8, \ldots ;$ and Series $2: 256,128$, __; the $\mathrm{P}^{\text {th }}$ term of both series are equal. Identify the value of $P$ ?"
Ans
XA. 3
Х в. 6
C. 5

X D. 4
Q. $12 \ldots \ldots$ is determined by using the law of parallelogram of forces, between two forces acting at a point in plane.
Ans
A. Resultant Force
$X$ B. Load
X C. Displacement
$X$ D. Moment of Inertia
Q. 13

Ans $X A$.
B.
$\times$ с.
$X$ D.
Q. 14 By using Searle`s apparatus, the coefficient of thermal conductivity is determined for $\qquad$ ـ.
Ans
X A. Nontransmitter
$X$ B. Insulator
$\times$
C. Bad Conductors
D. Good Conductors
Q. 15 Ohm's law is not applicable for non-metallic conductor like $\qquad$ _.
Ans
X A. Copper
$X$ B. Tin
X C. Silver
D. Silicon carbide
Q. 16 According to IS : 1680-1982, The concentration of total dissolved solids in boiler water should be $\qquad$ for Boilers operating up to $2.0 \mathrm{MN} / \mathrm{m}^{2}$.
Ans
A. $3500 \mathrm{mg} / \mathrm{l}$

X B. $5500 \mathrm{mg} / \mathrm{l}$
X C. $4500 \mathrm{mg} / \mathrm{l}$
X D. $6500 \mathrm{mg} / \mathrm{l}$
Q. 17 The rate of discharge of seepage water through a porous medium per unit area of void space perpendicular to the direction of flow is known as $\qquad$ _.
Ans
X A. Discharge Velocity
X B. Critical Velocity
C. Seepage Velocity

X D. Spectral Velocity
Q. 18 Calculate the equivalent weight of $\mathrm{Na}_{2} \mathrm{CO}_{3}$ when it is titrated against HCl in presence of $\mathrm{C}_{20} \mathrm{H}_{14} \mathrm{O}_{4}$.
Ans
XA. 106
X B. 26.5
X С. 212

- D. 53
Q. 19 "The magnitude of the electrostatic force of attraction or repulsion between two point charges is directly proportional to the product of the magnitudes of charges and inversely proportional to the square of the distance between them" is stated in
Ans
X A. Newtons`s Law X B. Faraday's Law X C. Ampere`s Law
D. Coulomb`s Law

Q. 20

Ans
A. Minor of the element

X B. Major of the element
X C. Matrices of the element
X D. Multiple of the Element
Q. 1 Method of applying water to the soil surface in the form of rain is $\qquad$ ـ.
Ans $\quad \times$ A. Border irrigation
$X$ B. Furrow method
X C. Trickle Irrigation
D. Sprinkler Irrigation
Q. 2 The horizontal distance from the centre of a well to the practical limit of the cone of depression in an aquifer is known as the $\qquad$ of the well.
Ans
$X$ A. Center of Influence
$X$ B. Diameter of Influence
X C. Depth of Influence

- D. Radius of Influence
Q. 3 are the devices used to engage or disengage two rotating machine components as and when desired.
Ans
X A. Brake
X B. Crank
C. Clutches
$X$ D. Shaft
Q. 4

Ans $\times \mathrm{A}$.

Q. 5

Ans $\quad \times$ A. Glazed Doors
$X$ B. Ledged Doors
$X$ C. Flush Doors
D. Louvered Doors
Q. 6

Ans $\quad \times$ A. Artesian aquifer
$X$ B. Perched aquifier
C. Confined aquifer

X D. Un-Confined aquifer
Q. 7 According to Pascals law, The intensity of pressure for a fluid at rest is $\qquad$ in all directions.

Ans
$X$ A. Higher
$X$ B. Lesser
X c. Zero

- D. Equal
Q. 8 longitudinal horizontal members parallel to the wall used in scaffolding is called as:

Ans
X A. Standards
$X$ B. Putlogs
C. Stringers

X D. Planks
Q. 9 Reynolds Number for Laminar Flow in Pipes is $\qquad$
Ans A. Less than 2000
X B. Greater than 2000
X C. Greater than 4000
X D. Between 2000 and 4000

Q. 10 $\qquad$ are used to connect two non-parallel and non-intersecting shafts.
Ans $\quad \times$ A. Bevel Gears
X B. Worm Gears
C. Spiral Gears

X D. Spur Gears
Q. 11 Specifications for vicat apparatus used to find of intial setting time of cement is $\qquad$
Ans
X A. IS 5512 (1996)
X B. IS 5511 (1996)

- C. IS 5513 (1996)

X D. IS 5514 (1996)
Q. 12 What is the chezys formula for steady and uniform flow in rigid boundary open channels?

Ans
A.
$X$ в.
$\times$ c.
$X$ D.
Q. 13

Ans $\quad \times$ A. Snap header Closer
$X$ B. Queen Closer
C. King Closer

X D. Bull Nose Mitre
Q. 14 According to Indian standarads, Shallow foundations are laid normally to depth of $\qquad$ _.
Ans
$X$ A. 4.5 meters
B. 3 meters
$X$ C. 7.5 meters
$X$ D. 6 meters
Q. 15 Calculate the specific weight of a one litre of a liquid which weighs 9 N .

Ans
XA. $9 \mathrm{~N} / \mathrm{m}^{3}$
X B. $90 \mathrm{~N} / \mathrm{m}^{3}$
C. $9000 \mathrm{~N} / \mathrm{m}^{3}$

X D. $900 \mathrm{~N} / \mathrm{m}^{3}$
Q. 16 Among the following figures identify the Correct one, Relationship between Absolute, Gauge, Atmospheric and vacuum Pressures.
Ans
$X A$.
$X$ B.
C.
$\times \mathrm{D}$.
Q. 17 When mixed with ___ Anhydrous cement compounds react with each other to form hydrated compounds.

Ans
X A. Kersone
X B. Mercury

- C. Water

X D. Petrol
Q. 18 The minimum width of tread without nosing shall be $\qquad$ for residential buildings.

Ans A. 250 mm
Х B. 150 mm
X C. 450 mm
X D. 350 mm
Q. 19 Usual allowance for camber in the intrados in the flat arch is $\qquad$ _.

Ans
A. 1 / 100 of the span

X B. 1 / 200 of the span
XC. 1 / 150 of the span

X D. $1 / 50$ of the span
Q. 20 Intensity of irrigation is defined as the percentage of CCA , which is proposed to be annually irrigated. What is meant by CCA in the above definition?

Ans
A. Culturable Command Area

X B. Crop Command Area
X C. Culturable Common Area
X D. Crop Common Area


## Section: Discipline3

Q. 1 Among the following which is NOT a out put device.

Ans $\quad$ A . Printer
X B. Monitor
X C. Plotter
D. Key board
Q. 2

Ans $\times \mathrm{A}$.
$X$ B.
C.
$X$ D.
Q. 3 COD stands for:

Ans $X$ A. Clean Oxygen Demand
B. Chemical Oxygen Demand
$X$ C. Chlorine Oxygen Demand
X D. Calcium Oxygen Demand
Q. 4 An admixture which delays the setting of cement paste is $\qquad$ -.
Ans A. Retarder
X B. Accelerator
X C. Water Reducing Admixture
X D. Air-Entraining Admixtures
Q. 5 $\qquad$ is used for delay in the setting time of concrete.
Ans A. Retarder

X B. Air-Entraining Admixtures
X C. Water Reducing Admixture
$X$ D. Accelerator
Q. 6 What is the minimum specified thickness of steel pipes of $\mathbf{1 0 0 0}$ to $\mathbf{1 2 0 0} \mathbf{~ m m}$ used in the water distribution layouts?
Ans
A. 8 mm

X B. 5 mm
X C. 7 mm
$\times$ D. 6 mm
Q. 7 Unit for Torque is $\qquad$ —.

Ans $\times \mathrm{A}$.
$X$ B.
$\checkmark$ C.
$\times \mathrm{D}$.
Q. 8 As per Indian standards 10262-2009, maximum water Content required to prepare concrete with 10 mm nominal maximum size aggregate is $\qquad$ _.
Ans

- A.

Х .
$\times \mathrm{c}$.
X D.
Q. 9 Among the following, which method is "NOT" used for anlaysing Truss.

Ans $\quad$ A. Graphical Method
X B. Method of Joints
X C. Method of Sections
D. Macaulay`s Method
Q. 10 The quantity of water required to be stored in the reservoir for equalising fluctuating demand against constant supply is known as:
Ans
Х A. The Breakdown Storage
X B. The Total Reservoir Storage
X C. The Fire Storage
D. The Balancing Storage
Q. 11 As per Euler's theory on columns, the Critical Load for Columns with Hinged Ends is given by:
Ans

- A.
$\times$ в.
$X$ c.
$\times \mathrm{D}$.

Q. 12 What is the trade name for Aluminium sulphate?

Ans
Х A. Soda alum
X B. Green vitriol
X C. Alfloc
D. Filter alum
Q. 13 pH value for drinking water is: $\qquad$
Ans $\quad X$ A. 10.5 to 12.5
X B. 8.5 to 10.5
C. 6.5 to 8.5

X D. 4.5 to 6.5
Q. 14 $\qquad$ shape of aggregate gives good workability.
Ans $\times$ A. Angular
$X$ B. Elongated
C. Rounded

X D. Flaky
Q. 15 According to CPHEEO, to avoid erosion due to sand and other gritty material carried in the sewer, the maximum velocity should not exceed $\qquad$
Ans
A. $3.0 \mathrm{~m} / \mathrm{S}$

X B. $6.0 \mathrm{~m} / \mathrm{S}$
X C. $1.5 \mathrm{~m} / \mathrm{s}$
X D. $4.5 \mathrm{~m} / \mathrm{S}$
Q. 16 Ratio of Lateral strain to longitudinal strain is $\qquad$
Ans $X$ A. Slenderness Ratio
X B. Volumetric Strain
C. Poisson's Ratio

X D. Radius of Gyration
Q. 17 In $\qquad$ system, the water in the conveying section flows freely due to gravity.
Ans $\quad \times$ A. Pumping
$X$ B. Pressure
$X$ C. Combined
D. Free Flow
Q. 18

Ans $X A$.
$\times$ в.
$\times$.
D.
Q. 19 According to IS : 2386 ( Part I ) - 1963, to conduct Sieve analysis, the minimum weight of the sample of 20 mm size aggregate to be taken is:
Ans
XA. 5 kg
X B. 1 kg
C. 25 kg

X D. 10 kg
Q. 20 The treatment by which the disease producing bacteria and other micro-organisms present in water are killed is known as $\qquad$
$X$ A. Filtrartion
X B. Sedimentation
X C. Water Softening
D. Disinfection

## Section : Discipline4

Q. 1 The ratio of the volume of air space to the volume of solids in a soil mass is called as $\qquad$ _.
Ans
$X$ A. California Bearing Ratio
X B. Air-Space Ratio
C. Air Void Ratio

X D. Critical Void Ratio
Q. 2 As per IS: 2720 (Part XXX) - 1980, the vane in Vane shear test for the measurement of shear strength of cohesive soils shall consist of four blades each fixed at $\qquad$ to the adjacent blades.

Ans
$\checkmark$ A.
$X$ в.
$X \mathrm{c}$.
$X$ D.
Q. 3 A three-hinged arch has hinged supports at each abutment. The external restraint provided by both the abutments is $\qquad$
Ans
A. Four

X B. Three
$X$ C. One
X D. Two
Q. 4 In AUTOCAD, the commnad used to draw Parallellines or Curves is:

Ans
$X$ A. Fillet
X B. Paste
X C. Copy
D. Offset
Q. 5 A compiler translates a high-level program into a low-level program.

Ans $\quad \times$ A. Assembler
B. Compiler
$X$ C. SQL
X D. Linkers
Q. 6 Asper IS : 12269-2013, what is the Maximum Insoluble residue (as percent by mass) for Ordinary Portland Cement, 53 Grade?
Ans
$\times$ A. 8.0
Х B. 2.0
ХС. 6.0
D. 4.0
Q. 7 According to the classification of building limes in IS 712: 1984, Magnesium/dolomitic lime used for finishing coat in plastering, white washing, etc. comes under $\qquad$ category.
Ans
A. Class D

X B. Class C
X C. Class B
X D. Class A

Q. 8 According to IS : 79-1975, the Acid value of Type - 1, linseed stand oil for paints is:

Ans $\times$ A. 3
Х B. 4
ХС. 5
D. 6
Q. 9

Ans A.
$\times$ B.
$X \mathrm{c}$.
$X$ D.
Q. 10 ___ encompass the personal and corporate standards of behavior expected by professionals.
Ans $\quad \times$ A. Punctual Ethics
X B. General Ethics
C. Professional Ethics

X D. Global Ethics
Q. 11 Among the different types of rocks given under options, identify the igneous rock.

Ans $X$ A. Lime Stone
$X$ B. Sand Sttone
C. Granite

X D. Slate
Q. 12 $\qquad$ is defined as a set of international standards on quality management and quality assurance developed to help companies effectively document the quality system elements needed to maintain an efficient quality system.
Ans
X A. ISO 6000

- B. ISO 9000

X C. ISO 8000
X D. ISO 7000

Q. 13 The mechanism of one dimensional consolidation in soils was proposed by:

Ans
X A. Taylor
X B. Darcy
C. Terzaghi

X D. Skempton
Q. 14 According to IS : 1077:1992, non-modular size of the bricks is $\qquad$ _.

Ans $\times \mathrm{A}$.
× B.

- C.

X D.
Q. 15 $\qquad$ soils are formed by the transportation and deposition of wind.
Ans $\times$ A. Glacial

- B. Aeolian

Х C. lacustrine
X D. Alluvial
Q. 16 What is the Indian standard for "Safety code for handling and storage of building materials".

Ans
X A. IS 7068 (1975)
X B. IS 7069 (1975)
X C. IS 7868 (1975)

- D. IS 7969 (1975)
Q. 17 What type of frame it will be, if it has 3 joints and 4 members?

Ans

- A. Redundant Frame

X B. Deficient Frame
X C. Perfect Frame
X D. Efficient Frame
Q. 18 According to Workmen's compensation act 1923, Amount of compenstation where death results from the injury is an amount equal to $\qquad$ of the monthly wages of the deceased workman multiplied by the relvant factor.
Ans
A. $40 \%$

X B. $20 \%$
X C. $60 \%$
X D. $80 \%$
Q. 19 In moment distribution method of structural analysis, the ratio of the moment induced at fixed end to the moment required at free end is known as:
Ans
X A. Stiffness Factor
X B. Distribution Factor
X C. Moment Factor
D. Carry-Over Factor
Q. 20 In $\qquad$ type of soils, more than half the coarse fraction is larger than $4.75-\mathrm{mm}$ IS Sieve size.

Ans
X A. Clay
X B. Sand
ㄷ. Silt

- D. Gravel


## Section: Discipline5

Q. 1 Find the quantity of cement mortar of $1: 6$ required for 12 mm plastering of two walls, each of them having length $=7.80$ meters and height $=1.25$ meters?

Ans
X A. $17.50 \mathrm{~m}^{2}$
$\times$ B. $20.50^{2}$
X C. $18.50 \mathrm{~m}^{2}$
D. $19.50 \mathrm{~m}^{2}$
Q. 2 Number of Spheres as Abrasive charge to be used for Grade - D Aggregates in Los Angeles Abrasion Testing Machine is $\qquad$
Ans
A. 6

X B. 11
X с. 12
Х D. 8
Q. 3 The value of a proprty at the end of its utility period without dismantling is known as:

Ans $\quad X$ A. Book Value
X B. Scrap Value

- C. Salvage Value

X D. Market Value
Q. 4

Ans $\quad \times$ A. 0.8
$X$ в. 0.7
C. 0.6

X D. 0.5
Q. 5 Walls of one brick thick and less shall each be measured separately in:

Ans A. Square Meter
$X$ B. Running Meter
$X$ C. Number
X D. Cubic Meter
Q. 6 According to Nagpur road plan, IRC has classified the Indian roads into $\qquad$ categories.
Ans A. 5
X в. 6
$\times$ C. 3
$\times$ D. 7
Q. 7 In the $\qquad$ type of split switch, the tongue rail does not end at the heel of the switch, but extends further and is rigidly connected.
Ans
A. Fixed Heel
$X$ B. Undercut Switch
X C. Overriding Switch
$X$ D. Loose Heel
Q. 8 Modulus of Elasticity of structural steel is $\qquad$ -.
Ans
$X A$.
$X$ в.
C.
$\times$ D.
Q. 9 The Safe Stopping Sight Distance value recommended by IRC for $60 \mathrm{~km} / \mathrm{h}$ speed is:

Ans $\times$ A. 60 meters
X B. 40 meters
C. 80 meters

X D. 20 meters
Q. 10 What is the Imperfection factor for buckling class "A \& B"

Ans
A. $0.21 \& 0.34$
$X$ в. $0.32 \& 0.45$
X C. $0.54 \& 0.67$
X D. 0.43 \& 0.56
Q. 11 In AUTOCAD, the command that is made use of to draw internal walls during house plan development is:
Ans
X A. Copy
B. Dline
$X$ C. Offset
X D. Snap
Q. 12 For multiple riveted connections, a service bolt shall be provided in every $\qquad$ hole.
Ans
$X$ A. Seventh or Eighth
$X$ B. Fifith or Sixth
$X$ C. Nineth or Tenth
D. Third or Fourth
Q. 13 According to IS : 4701-1982, the the range of side slope values (Horizontal : Vertical ) provided for unlined canals formed in black cotton soils in embankment is:

Ans
XA. 1.5:1 to 2.5:1
X B. $2: 1$ to $3: 1$
C. $2.5: 1$ to $3.5: 1$

X D. $1.5: 1$ to $3: 1$

Q. 14 What is the effective length of a prismatic compression member, whose boundary conditions are "Translation \& Rotation are Restrained at One end and Translation is Free \& Rotation is Restrained at the other end"

Ans
A. 1.2 L

X B. 2.0 L
X C. 1.0 L
X D. 0.8 L
Q. $15 \ldots \ldots$ is prepared to decide financial aspect and give idea of the cost of the proposal to sanctioning authority.
Ans
X A. Revised Estimate
$X$ B. Cube Rate Estimate
X C. Plinth Area Estimate
D. Preliminary Estimate
Q. 16 According to IRC : 37-2001, total pavement thickness for cumulative taffic of 2 msa for a CBR value of $6 \%$ is $\qquad$ -.
Ans
X A. 350 mm

- B. 450 mm

X c. 500 mm
X D. 615 mm
Q. 17 An old residential structure excluding the price of land has been bought by a person at a price of ₹ $30,000 /-$. Expecting the life of the Structre as 20 years, what is the amount of annual sinking fund at $4 \%$ interest, if the scrap value of the building is taken as $10 \%$ of the cost of purchase.
Ans

- A. 907.20

X B. 917.20
X С. 920.30
X D. 900.70
Q. 18 Find out the quantity of earth work excavation for foundation whose centre line lengthis 20 m , width/depth ratio of the trench is 0.5 and depth is 1.00 meters.

Ans
X A. $13.00 \mathrm{~m}^{3}$
X B. $15.00 \mathrm{~m}^{3}$

- C. $10.00 \mathrm{~m}^{3}$

X D. $12.00 \mathrm{~m}^{3}$
Q. 19 Roller bearings have been used in $\qquad$ -
Ans
A. Both Steel and Concrete Bridges

X B. Not Suitable for Both Steel and Concrete Bridges
X C. Only Concrete Bridges, Not in Steel Bridges
X D. Only Steel Bridges, Not in Concrete Bridges
Q. 20 If the price of the steel is $₹ 7,850.00$ per Ton used in RCC works. Then what is the total cost of steel for 100 Quintal.

Ans
A. ₹78,500.00

Х В. ₹7,85,000.00
Х С. ₹785.00
Х D. ₹7,850.00

