

Section: General Ability
Q. 1 निम्नलिखित परिदृश्य के लिए कार्रवाई का सबसे तार्किक पाठ्यक्रम चुनें।

कार चलाते समय, आपने दुर्घटना से किसी को चोट पहुंचाई। आप $\qquad$
Ans
A. कार रोकेंगे, प्राथमिक उपचार देंगे और फिर चिकित्सक के पास ले जाएंगे।
X. कार रोकेंगे और उससे बहस करने लगेंगे।
C. अपनी गाड़ी नहीं रोकेंगे और चले जाएंगे।
D. कार रोकेंगे, उसे प्राथमिक उपचार देंगे और फिर उसे वहीं छोड़ देंगे।
Q. 2 Study the following information to answer the question given below: If a person wants to apply for the Indian passport he needs certain documents. Documents required are:

1) Birth certificate
2) Aadhar card
3) Permanent address proof for more than 10 years.
4) Last educational qualification certificate.

If some of the above condition not fulfilled then,
1a) If a person does not have Birth certificate, then he must attach his 10th class certificate.
2a) If a person does not have Aadhar card, his passport will not be processed.
3a) If a person does not have permanent address proof then his parents passport should be attached and then his passport will be processed but will take 2 months extra time to issue the passport.
4) If 1,2 , and 3 not fulfilled and also he failed to show 1a), 2a), and 3a) his passport process will be rejected.
Sumit want to go abroad for further studies. He applied for Indian passport. He attached his parents Indian passports with his passport application since his father working in a private sector, they do not live in a city for more than 4 years. And for his birth certificate, he attached his 10th mark sheet. He also has an Aadhar card. He attached his graduation degree with the application form.
Ans
X A. His passport will be issued on time.
X B. His passport will not be processed.
X C. His passport will be rejected.
D. It will take 2 months extra to issue the passport.
Q. 3 Complete the following letter series:

C, K, E, H, G, E, I, _
Ans
X A.G
-B.B
X с. K
X D. D
Q. 4 Out of the given options, three are similar in a certain manner. However, one option is NOT like the other three. Select the option which is different from the rest.

(1)

(2)

(3)

(4)

Ans
X A. Image 4
$X$ B. Image 1
X C. Image 3

- D. Image 2
Q. 5 There are six persons $P, Q, R, S, T, U$ who have different weights. Only two persons have less weight than $T$. $R$ has less weight than $Q$ but more than $P . Q$ has a weight less than only two persons. U has more weight than S . How many persons have greater weight than R ?
Ans

Q. 6 Find the missing number in the given series:

1, 3126, 3751, 3876, _, 3906
Ans A. 3901
Х в. 3903
XC. 3905

X D. 3899
Q. 7 At a family gathering, there are 6 members present - A, B, C, D, E, and F. C is the daughter of $A$, and her brother is $D$. $F$ is the only child of $E$, and $E$ is married to $C$. $B$ is the mother of $D$.
There are two couples present at the gathering. D's both parents are present in the gathering. There are four males in the family.
How is A related to F ?
Ans
X A. Paternal grandmother
X B. Paternal grandfather
C. Maternal grandfather

X D. Maternal grandmother
Q. 8 Out of the given options, three are similar in a certain manner. However, one option is NOT like the other three. Select the option which is different from the rest.
Ans
X A. Bharat Ratna
, B. Nobel Prize
X C. Vir Chakra
X D. Padma Bhushan

Q. 9 If a mirror is placed on the line $A B$, then which of the answer figure is the correct mirror image of the given figure?

$A$
$i$
$i$
B
Ans

Q. 10 Out of the given options, three are similar in a certain manner. However, one option is NOT like the other three. Select the option which is different from the rest.
Ans
A. SVZD

X B. XAEJ
$X$ c. CFJO
$X$ D. LOSX
Q. 11 Six girls, Kusum, Chanda, Preeti, Simran, Priya, and Aarti, get the chance to become the monitor of their class for one day as per rotation policy. Days are from Monday to Saturday. Chanda becomes the monitor of the class four days after Preeti. One person became the monitor after Kusum but before Simran, also at least three people became monitor before Kusum. Who is the monitor of the class on Monday?

Ans
$X$ A. Chanda

- B. Preeti

X C. Simran
X D. Kusum
Q. 12 Study the following information carefully to answer the given question: C \% 4G7 \$ Q 65 + 3
\&LS \#T71 @
How many such numbers are there in the above arrangement each of which are immediately preceded by a number and followed by a symbol?
Ans
$\times$ A. Three
$X$ B. One
$X$ c. Four
D. Two
Q. 13 Find the wrong term in the given series. 1215, 1216, 1220, 1247, 1603
Ans
A. 1603
B. 1247
C. 1216

X D. 1220

Q. 14 From the given answer figures, select the one in which the question figure is


Ans

Q. 15 How many such pairs of letters are there in the word 'PROMOTION', each of which has as many letters between them in the word ( both forward and backward direction ) as they have between them in the English Alphabet?

Ans
$X$ A. Two
$X$ B. One
$X$ c. Four

- D. Three
Q. 16 There is a leakage at the bottom of the tank which can empty the tank in 60 hours. Pipe $A$ can fill the tank in 10 hours while pipe B can empty the tank in 40 hours. If pipe $A$ alone opened till 3/4th tank gets filled and then pipe B is opened. In how many hours tank gets completely filled?
Ans
$X$ A. 89/5 hours
X B. 74/7 hours
X C. 93/5 hours
D. 93/7 hours
Q. 17 In the question one statement is given, followed by two conclusions, 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 conclusions, if any, follows from the given statement.
Statement:
Z < N; F $\geq \mathrm{N} ; \mathrm{F} \leq \mathrm{K}$
Conclusions:
I. $K=N$
II. K > Z

Ans $\quad$ A. Either conclusion I or II follow
B. Only conclusion II follows

X C. Both conclusion I and II follow
$X$ D. Only conclusion I follows

Q. 18 Select the option that is related to the third term on the same basis as the second term is related to the first term.
CEHL: BDGK :: EGJN : ?
Ans

Q. 19 Which of the following cube in the answer figure cannot be made based on the unfolded cube in the question figure?


Ans

Q. 20 In the following Venn Diagram, 'Group A' represents those who study 'Arts', 'Group B' represents those who study 'Commerce' and 'Group C' represents those 'Science'. The number given in the diagram represents the member of persons of that particular category.

How many persons study only Arts or only Commerce?

C

Ans $\quad \times$ A. 21
X B. 7
C. 14

X D. 11

Section : General Awareness
Q. 1 When did Gandhiji start the 'Quit India Movement'?

Ans
X A. July 1942
X B. August 1949
X C. August 1945
D. August 1942

Q. 2 ओजोन परत वायुमंडल के निम्नलिखित में से किस क्षेत्र में मौजूद है?

Ans $X$ A. मध्यमण्डल
B. समतापमण्डल
$\times$ C. बाह्यमण्डल
X D. तापमण्डल
Q. 3 Where is the headquarter of WEF (World Economic Forum)?

Ans
X A. Manila
(B. Geneva

X C. New York
X D. Washington DC
Q. 4 If ' B ' is the radial outward velocity of galaxy, 'D' is the distance of galaxy from Earth, and 'H' is the Hubble constant. Then, $\mathrm{B}=$ ?
Ans
XA. H + D
X B. $\mathrm{H} \div \mathrm{D}$
XC. $\mathrm{H}-\mathrm{D}$
D. $H \times D$
Q. 5 If Red Litmus changes to Blue, then what is the nature of the substances?

Ans $\times$ A. Neutral
X B. hydrophobic

- C. Basic

X D. Acidic
Q. 6 In which among the following cities, headquarters of 'International Union for Conservation of Nature and Natural Resources' is located?
Ans
X A. Washington DC
X B. Vienna
C. Gland

X D. London
Q. 7 Who is the author of 'A Dangerous Place'?

Ans


X D. Mark Twain

## Q. 8 निम्नलिखित में से कौन नीति आयोग के उद्देश्यों में से एक है?

Ans A. अच्छे अंतरराष्ट्रीय संबंधों की परिकल्पना को साझा करना
X B. चुनाव आयोग से संबंधित परिकल्पना को साझा करना
C. केंद्रीय उन्मुख विकास की परिकल्पना को साझा करना
D. राज्य के साथ राष्ट्रीय विकास की परिकल्पना को साझा करना

## Q. 9 From which of the following countries, Rugby originated?

Ans $\times$ A. India
X B. New Zealand
C. England

X D. Australia
Q. 10 According to Indian mythology, who sung Shiva Tandava Stotra?

Ans $\quad \times$ A. Kumbhkarana
X B. Vibhishana
C. Ravana

X D. Tarakasura
Q. 11 From which of the following states, 'Kathakali' dance has originated?

Ans
X A. Uttar Pradesh

- B. Kerala

X C. Maharashtra
X D. Bihar

Q. 12 Who founded 'Brahmo Samaj'?

Ans
X A. Aurobindo Ghose
X B. Suredranath Banerjee
C. Raja Rammohan Roy

X D. Swami Vivekananda


## Q. 13 Who has written 'Geetanjali'?

Ans
X A. Vishnu Sharma
X B. M.K.Gandhi
C. Rabindra Nath Tagore

X D. Kalidas
Q. 14 Who among the following has discovered Radium?

Ans
X A. Michael Faraday
X B. Enrico Ferni
X C. Henry Becquerel
D. Marie and Pierre Curie
Q. 15 Which among the following organisation has successfully conducted the third long-duration hot test of liquid fuel-powered, Vikas Engine for the Gaganyaan Program?
Ans
X A. JAXA(Japan Aerospace Exploration Agency)
X B. CNSA(China National Space Administration)
X C. NASA(National Aeronautics and Space Administration)

- D. ISRO(Indian Space Research Organisation)
Q. 16 Where is the Central office of the RBI (Reserve Bank of India)?

Ans
$X$ A. Pune
B. Mumbai

X C. Kolkata
X D. Delhi

## Q. 17 Who has discovered X-Rays?

Ans
X A. Chadwick
B. Roentgen

X C. Anderson
X
D. Becquerel

Q. 18 By which amendment act of the constitution, right to property has been taken away from Fundamental Rights?

Ans


X D. 42nd Amendment
Q. 19 Who among the following is known as the 'Flying Sikh'?

Ans
X A. Mo Farah
B. Milkha Singh

X C. Usain Bolt
$X$ D. Jesse Owens
Q. 20 किसने खाड़ी क्षेत्र में भारतीय जहाजों की सुरक्षा के लिए ऑपरेशन संकल्प शुरू किया है?

Ans
A. भारतीय नौसेना

X B. भारतीय वायु सेना
$X$ C. केन्द्रीय रिज़र्व पुलिस बल
D. भारतीय सेना

## Section : Arithmetic Ability

Q. 1 The sum of the ages of Sourav, Gourav and Vaskar is 102 years. The ratio of their ages 12 years ago $1: 2: 3$. What is the present age of Vaskar?

Ans
A. 45 years
B. 33 years
$\times$ C. 44 years
X D. 38 years
Q. 2 Aman, Bittu, Chaman and Dinesh are 4 members in a family. The age of Aman is (2/3)rd of the average age of a family. The age of Bittu is $\mathbf{8 0 \%}$ of the age of Aman. The age of Dinesh is $150 \%$ more than the age of Bittu. Find the age of Aman if the difference between the age of Chaman and Dinesh is 5 years.
Ans

Q. 3 Two trains $A$ and $B$ are running in opposite directions. Speed of $A$ is thrice as speed of $B$ and they cross each other in 56 seconds. If the train A passes a standing man in 54 seconds then, what is the time taken by train $B$ to cross the same person?
Ans
A. 62 sec

X B. 68 sec
X C. 54 sec
$X$ D. 45 sec
Q. 4 P, Q and R started a business by investing Rs. 4050, Rs. 4500 and Rs. 6000 respectively.

After 6 months $R$ withdrew Rs. 1500 while P invested Rs. 4500 more. In annual profit of Rs. 6420 , the share of $P$ will exceed that of $R$ by:
Ans
X A. Rs. 220
X B. Rs. 320
X C. Rs. 350
D. Rs. 420
Q. 5 A fruit seller had some mangoes. He sells $45 \%$ of them and still has 550 mangoes. Find the number of mangoes he initially had.
Ans
X A. 1600
X B. 1200
C. 1000

X D. 900
Q. 6 If the ratio between Simple interest of 2 years and the Difference between Compound interest to simple interest of 2 years is $20: 1$. Find out the rate of interest per annum.
Ans
XA. 5\%
X B. 25\%
X С. 12.5\%
D. $10 \%$
Q. 7 The average of five consecutive numbers is 57 . Find the difference between the highest and lowest number among these 5 numbers.
Ans

Q. 8 The graph show the number of units produced and number of units sold by different companies.
Find the total number of units unsold by all the companies.


Ans
X A. 1200
X B. 900
C. 1100

X D. 1000
Q. 9 The cost price of a packet milk is Rs. 30 per litre but a trader is labelling it as Rs. 40 per litre. Also he mixes 50\% water and gives a 30\% discount. Find the Profit Percentage of trader.
Ans
X A. $25 \%$
X B. $45 \%$
X C. $50 \%$
D. $40 \%$
Q. 10 What approximate value will come in the place of question mark(?) in the following question?
497.01 + 12.97-55.03 = ? \% of 500

Ans
X A. 34

- B. 91

X C. 81
X D. 19
Q. 11 Six bells commence tolling together and toll at intervals of $3,4,5,6,10$ and 12 seconds respectively. In 30 minutes, how many times do they toll together?
Ans
A. 31
B. 15
$\times$ C. 1
$\times$ D. 30
Q. 12 What will come in the place of question mark(?) in the following question?
$54 \%$ of $700+25 \%$ of $616=39 \%$ of $1300+$ ?
Ans $X$ A. 65
X в. 35
C. 25

X D. 15
Q. 13 The population of a town increased from 75,000 to $1,00,00$ in a decade. The percent increase of population in a decade is:
Ans
X A. 30\%
X B. $20 \%$
X C. $25 \%$
D. $33.33 \%$
Q. 14 The slant height of a right circular cone is 5 m and its height is 4 m . Find its curved surface area.
Ans
A. $15 \pi \mathrm{sq} . \mathrm{m}$

X B. $30 \pi \mathrm{sq} . \mathrm{m}$
X C. $20 \pi \mathrm{sq} . \mathrm{m}$
X D. 25 m sq.m
Q. 15 A trader buys goods at a $15 \%$ discount on the label price. If he wants to make a profit of $\mathbf{2 0 \%}$ after allowing a discount of $40 \%$. By what percent should his marked price be greater than the original label price?

Ans
X A. $50 \%$
B. $70 \%$

X C. $40 \%$
X D. $60 \%$
Q. 16 The present ages of $A$ and $B$ are in the ratio $7: 9$. After ' $x$ ' years the ratio of their ages becomes $4: 5$ and ' $x+6$ ' years ago the ratio of their ages was $18: 25$. Find the sum of their ages after ' $x$ ' years.
Ans
X A. 120 years
X B. 130 years
C. 126 years

X D. 136 years
Q. 17 The bar graph represents the number of people in a district who use different SIM cards. If ratio of Male and female in Jio SIM and Vodafone SIM is 5:3 and 6:7 respectively, then find the number of females who use Jio SIM is what percent more/less than the number of males who use Vodafone SIM.


Ans
XA. $45 \%$
X B. $55 \%$
C. $50 \%$

X D. $40 \%$
Q. 18 What will come in the place of question mark(?) in the following question?

$$
(3 / 7) \div(4 / 3) \times(7 / 9) \times 9 \div 3=?
$$

Ans

Q. 19 Let $\mathbf{N}$ be the greatest number that will divide 1205, 4265 and 6705, leaving the same remainder in each case. Then sum of the digits in N is:

Ans
X A. 4

- B. 2

Хс. 3
X D. 1
Q. 20 A tank is filled by a pipe in 4 hours. It is observed that due to leakage the tank is filled in $5(1 / 3)$ hours. Find the time taken by leakage to drain out all the water of the tank.
Ans
$X$ A. 13 hours

- B. 16 hours

X C. 15 hours
X D. 12 hours

## Section : General English

Q. 1 The sentence below has been divided into three parts. Select the part of the sentence that has an error. If the sentence has no error, select the option 'No Error'.

Pass out of an elite institution / and making a distinctive fashion / statement is a double wallop.

Ans
A. Pass out of an elite institution
$X$ B. statement is a double wallop.
$X$ C. and making a distinctive fashion
X D. No Error
Q. 2 Some parts of a sentence have been jumbled up, and labelled $P, Q, R$ and $S$. Select the option that gives the correct sequence in which these parts can be rearranged to form a meaningful and grammatically correct sentence.

Mandarin; simplified Chinese:
P. 'speech of officials' is a group of Sinitic
Q. which includes the Beijing dialect, the basis
R. (Chinese) language natively spoken across

S. most of northern and southwestern China
of the phonology of Standard Chinese.
Ans
X A. SQRP
X B. QPSR
C. PRSQ

X D. SQPR
Q. 3 Select the most appropriate meaning of the given idiom.

Buckle down
Ans
$X A$. To reduce weight.
X B. To slow down
$X$ C. To hold your stance.
D. To start to work hard
Q. 4 Select the word that is opposite in meaning (ANTONYM) to the word given below.

PASSIVE
Ans $X$ A.
SLANDEROUS
B. IMPATIENT
$\times \mathrm{c}$.
HARMONY
$X$ D.
APATHETIC
Q. 5 Select the word that is similar in meaning (SYNONYM) to the word given below.

INSULAR
Ans $X A$.
UNBIASED

- B.

DETACHED
$\times \mathrm{C}$.
CONTINENT
X D. PENINSULAR
Q. 6 Four words are given, out of which only one word is spelt correctly. Choose the correctly spelt word.
Ans
$\checkmark$ A. SEVENTIETH
$X$ B. SEVENTITH
$X$ C. SEVENTEITH
X D. SEVENTETH

Q. 7 Select the most appropriate meaning of the given proverb.

A word to the wise.
Ans
$X \mathrm{~A}$. To have a quick talk.
$X$ B. A wise man speaks less.
C. A good piece of advice.
$X$ D. A two minute guest speech.
Q. 8 The sentence below has been divided into three parts. Select the part of the sentence that has an error. If the sentence has no error, select the option 'No Error'.

This is abundantly declared in / their official documents and by / there acknowledgment representatives.
Ans
A. there acknowledgment representatives.

X B. No Error
$\times \mathrm{C}$.
This is abundantly declared in
X D. their official documents and by
Q. 9 Fill in the blank with the most appropriate choice.

Beneath the postmodern gloss of its bright shiny surfaces lies a cleverly $\qquad$ core of rational modernity

Ans
X A. jilted
X B. blemished
X C. beseeched
D. disguised
Q. 10 Choose the right synonym for " barbaric"

Ans
X A. Kind
X B. Civilized
X C. Barber-like
D. Savage

Q. 11 The sentences below are not complete. There are four options for each question. Choose the best word to complete the sentence.

A decent living politician is one who is not actively corrupt, rude, $\qquad$ vile or idiotic.
Ans
X A. pleasant
X B. delightful
X C. amiable
D. obnoxious
Q. 12 The question below consist of a set of labelled sentences. Out of four options given, select the most logical order of the sentences which form a paragraph.

The UN was established after World War II with the aim of preventing future wars, succeeding the ineffective League of Nations.
P. The Charter was adopted on 25 June 1945 and took effect on 24 October 1945, when the UN began operations.
Q. On 25 April 1945, 50 governments met in San Francisco for a conference and started drafting the UN Charter.
R. It also ensures delivering humanitarian aid, promoting sustainable development, and upholding international law.
S. Pursuant to the Charter, the organization's objectives include maintaining international peace and security, protecting human rights.

At its founding, the UN had 51 member states; with the addition of South Sudan in 2011, membership is now 193, representing almost all of the world's sovereign states.

Ans
X A. SQRP
B. QPSR

X c. SRQP
X D. PQRS
Q. 13 Select the most appropriate meaning for the word given below.

Cache
Ans
X A. A large bedroom for a number of people in a school or institution.
B. A collection of items of the same type stored in a hidden or inaccessible place.

X C. A Large container.

Q. 14 Select the word that is similar in meaning (SYNONYM) to the word given below.

SALACIOUS
Ans
$X A$.
CLEAN
$X$ B.
MORAL
X C.
CONSPIRACY
D. OBSCENE
Q. 15 Select the word segment that substitutes (replaces) the bracketed word segment correctly and completes the sentence meaningfully. Select the option 'no correction required' if the sentence is correct as given.

The goalie (returned), with head bowed in contrition, as the ref showed him the yellow card.
Ans

- A. retreated
$X$ B. No correction required
X C. went back
X D. retrenched


## Comprehension:

A passage is given with 5 questions following it. Read the passage carefully and choose the best answer to each question out of the four alternatives.

Karl Otto Lagerfeld was a German creative director, fashion designer, artist, photographer, and caricaturist who lived in Paris. He was known as the creative director of the French fashion house Chanel, a position held from 1983 until his death, and was also creative director of the Italian fur and leather goods fashion house Fendi, and of his own eponymous fashion label. He collaborated on a variety of fashion and art-related projects. Lagerfeld was recognized for his signature white hair, black sunglasses, fingerless gloves, and high, starched, detachable collars. Lagerfeld was known to misrepresent his birth year, claiming to be younger than his actual age, and to misrepresent his parents' background. For example, he claimed that he was born in 1938 to "Elisabeth of Germany" and Otto Ludwig Lagerfeldt from Sweden. These claims have been conclusively proven to be false, as his father was from Hamburg and spent his entire life in Germany, with no Swedish connection. There is also no evidence that his mother Elisabeth Bahlmann, the daughter of a middle-class local politician, called herself "Elisabeth of Germany". He was known to insist that no one knows his real birth date. In an interview on French television in February 2009, Lagerfeld said that he was "born neither in 1933 nor 1938".

SubQuestion No : 16
Q. 16 Two assertions are given below (A \& B) on the basis of your understanding of the passage, which one of the assertions is correct?
A. His claims of being born in 1938 to Elisabeth of Germany and Otto Ludwig Lagerfeldt from Sweden are false.
B. Karl Lagerfeld was known as the creative director of the French fashion house Fendi, a position he held from 1983 until his death.
Ans
$X$ A. Both are incorrect.
X B. Both are correct.
C. A is correct and $B$ is incorrect
$X$ D. A is incorrect and B is correct

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Karl Otto Lagerfeld was a German creative director, fashion designer, artist, photographer, and caricaturist who lived in Paris. He was known as the creative director of the French fashion house Chanel, a position held from 1983 until his death, and was also creative director of the Italian fur and leather goods fashion house Fendi, and of his own eponymous fashion label. He collaborated on a variety of fashion and art-related projects. Lagerfeld was recognized for his signature white hair, black sunglasses, fingerless gloves, and high, starched, detachable collars. Lagerfeld was known to misrepresent his birth year, claiming to be younger than his actual age, and to misrepresent his parents' background. For example, he claimed that he was born in 1938 to "Elisabeth of Germany" and Otto Ludwig Lagerfeldt from Sweden. These claims have been conclusively proven to be false, as his father was from Hamburg and spent his entire life in Germany, with no Swedish connection. There is also no evidence that his mother Elisabeth Bahlmann, the daughter of a middle-class local politician, called herself "Elisabeth of Germany". He was known to insist that no one knows his real birth date. In an interview on French television in February 2009, Lagerfeld said that he was "born neither in 1933 nor 1938".

SubQuestion No : 17
Q. 17 What is the meaning of 'eponymous' from the given passage?

Ans $\quad$ A. Something that works on its own.
B. One for whom or which something is or is believed to be named.

X C. Collaborate with another company
$X$ D. Something that causes confusion.


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 his signature white hair, black sunglasses, fingerless gloves, and high, starched, detachable collars. Lagerfeld was known to misrepresent his birth year, claiming to be younger than his actual age, and to misrepresent his parents' background. For example, he claimed that he was born in 1938 to "Elisabeth of Germany" and Otto Ludwig Lagerfeldt from Sweden. These claims have been conclusively proven to be false, as his father was from Hamburg and spent his entire life in Germany, with no Swedish connection. There is also no evidence that his mother Elisabeth Bahlmann, the daughter of a middle-class local politician, called herself "Elisabeth of Germany". He was known to insist that no one knows his real birth date. In an interview on French television in February 2009, Lagerfeld said that he was "born neither in 1933 nor 1938".

SubQuestion No: 18
Q. 18 What is the meaning of 'Caricaturist' from the given passage?

Ans
$X$ A. Someone who exaggerates.
$X$ B. A person who studies different cultures.
C. The art of creating representations.
$X$ D. A person who cultures fabrics.

## Comprehension:

A passage is given with 5 questions following it. Read the passage carefully and choose the best answer to each question out of the four alternatives.

Karl Otto Lagerfeld was a German creative director, fashion designer, artist, photographer, and caricaturist who lived in Paris. He was known as the creative director of the French fashion house Chanel, a position held from 1983 until his death, and was also creative director of the Italian fur and leather goods fashion house Fendi, and of his own eponymous fashion label. He collaborated on a variety of fashion and art-related projects. Lagerfeld was recognized for his signature white hair, black sunglasses, fingerless gloves, and high, starched, detachable collars. Lagerfeld was known to misrepresent his birth year, claiming to be younger than his actual age, and to misrepresent his parents' background. For example, he claimed that he was born in 1938 to "Elisabeth of Germany" and Otto Ludwig Lagerfeldt from Sweden. These claims have been conclusively proven to be false, as his father was from Hamburg and spent his entire life in Germany, with no Swedish connection. There is also no evidence that his mother Elisabeth Bahlmann, the daughter of a middle-class local politician, called herself "Elisabeth of Germany". He was known to insist that no one knows his real birth date. In an interview on French television in February 2009, Lagerfeld said that he was "born neither in 1933 nor 1938".

SubQuestion No : 19
Q. 19 Karl Lagerfeld was not recognized for which of the following?

Ans A. Gold chains
$X$ B. Fingerless gloves
$X$ C. Signature white hair
$X$ D. Detachable collars

## Comprehension:

A passage is given with 5 questions following it. Read the passage carefully and choose the best answer to each question out of the four alternatives.

Karl Otto Lagerfeld was a German creative director, fashion designer, artist, photographer, and caricaturist who lived in Paris. He was known as the creative director of the French fashion house Chanel, a position held from 1983 until his death, and was also creative director of the Italian fur and leather goods fashion house Fendi, and of his own eponymous fashion label. He collaborated on a variety of fashion and art-related projects. Lagerfeld was recognized for
 his signature white hair, black sunglasses, fingerless gloves, and high, starched, detachable collars. Lagerfeld was known to misrepresent his birth year, claiming to be younger than his actual age, and to misrepresent his parents' background. For example, he claimed that he was born in 1938 to "Elisabeth of Germany" and Otto Ludwig Lagerfeldt from Sweden. These claims have been conclusively proven to be false, as his father was from Hamburg and spent his entire life in Germany, with no Swedish connection. There is also no evidence that his mother Elisabeth Bahlmann, the daughter of a middle-class local politician, called herself "Elisabeth of Germany". He was known to insist that no one knows his real birth date. In an interview on French television in February 2009, Lagerfeld said that he was "born neither in 1933 nor 1938".

SubQuestion No : 20
Q. 20 Two assertions are given below (A \& B) on the basis of your understanding of the passage, which one of the assertions is correct?
A. Karl Otto Lagerfeld was a German creative director, fashion designer, artist, photographer, and caricaturist who was born in London.

## B. He was known to insist that no one knows his real birth date.

Ans
A. $A$ is incorrect and $B$ is correct
$X B$. $A$ is correct and $B$ is incorrect
$X$ C. Both are incorrect.
X D. Both are correct.

Section: General Hindi
Q. 1 निम्नलिखित प्रश्न में, चार विकल्पों में से, उस विकल्प का चयन करें जो शुद्ध शब्द का सही विकल्प है।

Ans $\quad \times$ A. परितोशिक
X B. परितोसिक
C. पारितोषिक
$X$ D. पारीतोषिक
Q. 2 निम्नलिखित प्रश्न में, चार विकल्पों में से, उस सही विकल्प का चयन करें जो दिए गए शब्द के सही अर्थ का उचित विकल्प नहीं है।
पंडित
Ans
X A. विज
B. वल्लभ
C. पारंगत
$X$ D. मनीषी
Q. 3 निम्नलिखित प्रश्न में, चार विकल्पों में से, उस सही विकल्प का चयन करें जो दिए गए शब्द-युग्म के सही अर्थ का उचित विकल्प हो।
स्वेद-श्वेत
Ans
X A. पकवान-फल
X B. मस्तक-उजला
$\times$ C. पसीना-हल
D. पसीना-उजला

Q. 4 निम्नलिखित प्रश्न में, चार विकल्पों में से, उस विकल्प का चयन करें जो दिए गए वाक्य के काल का सही विकल्प

हो।
राधा ने पौधों को पानी दिया है।
Ans
X A. सामान्य भूतकाल
B. आसन्न भूतकाल

X C. संदिग्ध भूतकाल
X D. अपूर्ण भूतकाल
Q. 5 निम्नलिखित प्रश्न में, चार विकल्पों में से, उस विकल्प का चयन करें जो दिए गए लोकोक्ति का सही अर्थ वाला विकल्प है।
गाँव का जोगी जोगना, आन गाँव का सिद्ध -
Ans
$\times \mathrm{A}$. पास की वस्तु को दूर खोजना
B. अपने स्थान पर सम्मान नहीं होता
$X$ C. अधिक परिश्रम से कम लाभ
$\times$ D. अवसरवादी होना
Q. 6 निम्नलिखित प्रश्न में, चार विकल्पों में से, उस विकल्प का चयन करें जो दिए गए वाक्य के लिए वृत्ति के भेद का सबसे अच्छा विकल्प है।
संभव है आज मेहमान घर आए।
Ans
$X$ A. संकेतार्थ
X B. संदेहार्थ
C. संभावनार्थ

X D. विध्यर्थ
Q. 7 निम्नलिखित प्रश्न में, चार विकल्पों में से, उस विकल्प का चयन करें जो सही वाक्य भेद का विकल्प हो। मैंने उसे चुप रहने के लिए कहा, लेकिन उसने मेरी बात नहीं सुनी|
Ans $\times$ A. मिश्र वाक्य
B. संयुक्त वाक्य

X C. विधानवाचक वाक्य
D. सरल वाक्य
Q. 8 निम्नलिखित प्रश्न में, चार विकल्पों में से, उस विकल्प का चयन करें जो दी गई मुहावरे का सही अर्थ वाला विकल्प है। पौ बारह होना -
Ans
X A. व्यर्थ समय गंवाना
$X$ B. धोखा देना
X C. संदेह होना
D. अत्यधिक लाभ होना
Q. 9 निम्नलिखित प्रश्न में, चार विकल्पों में से, उस विकल्प का चयन करें जो देशज शब्द का सही विकल्प हो।

Ans
$\times$ A. मौसम
B. लोटा
$\times$ C. शादी
D. दंगल
Q. 10 निम्नलिखित प्रश्न में, चार विकल्पों में से, उस विकल्प का चयन करें जो दी गई मुहावरे का सही अर्थ वाला विकल्प है।
लोहा लेना -
Ans
$\times$ A. कीमती सामान खरीदना
$X$ B. लज्जित होना
$X$ C. हरा देना
D. युद्ध करना
Q. 11 निम्नलिखित प्रश्न में, चार विकल्पों में से, उस विकल्प का चयन करें जो कोष्ठक में दिए गए शब्द के अनुसार विशेषण के भेद वाला विकल्प हो।
मेरे लिए (थोडा सा) खाना लेकर आओ।
Ans
A. परिमाणवाचक

X B. सार्वनामिक
C. अनिश्चित संख्यावाचक

X D. निश्चित संख्यावाचक
Q. 12 निम्नलिखित प्रश्न में, चार विकल्पों में से, उस विकल्प का चयन करें जो विराम चिह्न युक्त वाक्य का सही विकल्प हो।
Ans
$\times$ A. कल रविवार है; छुट्टी का दिन है; आराम मिलेगा?
$X$ B. कल रविवार है छुट्टी का दिन है आराम मिलेगा।
C. कल रविवार हैं छुट्टी का दिन है; आराम मिलेगा।

X D. कल रविवार है-छुट्टी का दिन है-आराम मिलेगा।

Q. 13 निम्नलिखित प्रश्न में, चार विकल्पों में से, उस विकल्प का चयन करें जो दिए गए वाक्य के लिए पक्ष के भेद का

सबसे अच्छा विकल्प है।
अब तक हम काफी खाना बना चुके हैं!
Ans
$X$ A. प्रगतिद्योतक
$X$ B. सातप्यद्योतक
C. पूर्णताद्योतक
$X$ D. नित्यताद्योतक
Q. 14 निम्नलिखित प्रश्न में, चार विकल्पों में से, उस सही विकल्प का चयन करें जो रिक्त स्थान के लिए उपयुक्त शब्द का सही विकल्प है।
हताशा, निराशा और असफलता जैसे शब्द हमारे जीवन के शब्दकोष में $\qquad$ होने चाहिए।

Ans
X A. ज़रूर
$X$ B. शुद्ध
C. सदा

- D. नहीं
Q. 15 निम्नलिखित प्रश्न में, चार विकल्पों में से, उस विकल्प का चयन करें जो भाववाचक संज्ञा का सही विकल्प नहीं है।

Ans $\times$ A. सुखदायी
$X$ B. दूरी
C. सुखद

X D. धिक्कार

## Comprehension:

नीचे दिए गये गद्यांश के बाद 5 प्रश्न दिए गये हैं। इस गद्यांश को ध्यानपूर्वक पढ़ें और चार विकल्पों में से प्रत्येक प्रश्न का सर्वोत्तम उत्तर चुनें। सत्संग से लौकिक और पारलौकिक दोनों प्रकार के सुख प्राप्त होते हैं। यदि कोई मनुष्य इस जीवन में दुखी रहता है तो कम से कम कुछ समय के लिए श्रेष्ठ पुरुषों की संगति में वह अपने सांसारिक दुखों का विस्मरण कर देता है। महापुरुषों के उपदेश सदैव सुख शांति प्रदान करते हैं। दुख के समय मनुष्य जिनका स्मरण करके धीरज प्राप्त करता है। सत्संग में लीन रहने वाले मनुष्य को दुखों का भय नहीं रहता है। वह अपने दिल को समझता है, जिससे दुखों का कोई कारण ही शेष नहीं रह जाता। सत्संग के प्रभाव से धैर्य का लाभ होता है जिससे मन में क्षमा की शक्ति स्वयं ही आ जाती है। क्षमा सभी प्रकार के दुर्गुणों का विनाश कर देती है और मन को शांति व संतोष प्रदान करती है।

SubQuestion No : 16

## Q. 16 इनमें से कौन-सा परमार्थ का विलोम शब्द है?

Ans $\times$ A. निर्वाण
B. स्वार्थ

X C. मोक्ष
$X$ D. भलाई

## Comprehension:

नीचे दिए गये गद्यांश के बाद 5 प्रश्न दिए गये हैं। इस गद्यांश को ध्यानपूर्वक पढ़ें और चार विकल्पों में से प्रत्येक प्रश्न का सर्वोत्तम उत्तर चुनें। सत्संग से लौकिक और पारलौकिक दोनों प्रकार के सुख प्राप्त होते हैं। यदि कोई मनुष्य इस जीवन में दुखी रहता है तो कम से कम कुछ समय के लिए श्रेष्ठ पुरुषों की संगति में वह अपने सांसारिक दुखों का विस्मरण कर देता है। महापुरुषों के उपदेश सदैव सुख शांति प्रदान करते हैं। दुख के समय मनुष्य जिनका स्मरण करके धीरज प्राप्त करता है। सत्संग में लीन रहने वाले
 मनुष्य को दुखों का भय नहीं रहता है। वह अपने दिल को समझता है, जिससे दुखों का कोई कारण ही शेष नहीं रह जाता| सत्संग के प्रभाव से धैर्य का लाभ होता है जिससे मन में क्षमा की शक्ति स्वयं ही आ जाती है। क्षमा सभी प्रकार के दुर्गुणों का विनाश कर देती है और मन को शांति व संतोष प्रदान करती है।

SubQuestion No: 17
Q. 17 परोपकार के अंतर्गत व्यक्ति दूसरों की सहायता कर किसकी प्राप्ति करता है?

Ans
$X$ A. बलिदान की
$X$ B. दिखावे की
C. बाहरी ज्ञान की
D. आत्मिक आनन्द की

## Comprehension:

नीचे दिए गये गद्यांश के बाद 5 प्रश्न दिए गये हैं। इस गद्यांश को ध्यानपूर्वक पढ़ें और चार विकल्पों में से प्रत्येक प्रश्न का सर्वोत्तम उत्तर चुनें।
सत्संग से लौकिक और पारलौकिक दोनों प्रकार के सुख प्राप्त होते हैं। यदि कोई मनुष्य इस जीवन में दुखी रहता है तो कम से कम कुछ समय के लिए श्रेष्ठ पुरुषों की संगति में वह अपने सांसारिक दुखों का विस्मरण कर देता है। महापुरुषों के उपदेश सदैव सुख शांति प्रदान करते हैं। दुख के समय मनुष्य जिनका स्मरण करके धीरज प्राप्त करता है। सत्संग में लीन रहने वाले मनुष्य को दुखों का भय नहीं रहता है। वह अपने दिल को समझता है, जिससे दुखों का कोई कारण ही शेष नहीं रह जाता। सत्संग के प्रभाव से धैर्य का लाभ होता है जिससे मन में क्षमा की शक्ति स्वयं ही आ जाती है। क्षमा सभी प्रकार के दुर्गुणों का विनाश कर देती है और मन को शांति व संतोष प्रदान करती है।

SubQuestion No : 18

## Q. 18 इस अनुच्छेद का कोई उपयुक्त शीर्षक-

Ans
XA. स्वार्थ और परमार्थ
B. परोपकार के अनेक रूप
C. परोपकार ही सच्ची मानवता है
D. योग्य जीव मनुष्य

## Comprehension:

नीचे दिए गये गद्यांश के बाद 5 प्रश्न दिए गये हैं। इस गद्यांश को ध्यानपूर्वक पढ़ें और चार विकल्पों में से प्रत्येक प्रश्न का सर्वोत्तम उत्तर चुनें।
सत्संग से लौकिक और पारलौकिक दोनों प्रकार के सुख प्राप्त होते हैं। यदि कोई मनुष्य इस जीवन में दुखी रहता है तो कम से कम कुछ समय के लिए श्रेष्ठ पुरुषों की संगति में वह अपने सांसारिक दुखों का विस्मरण कर देता है। महापुरुषों के उपदेश सदैव सुख शांति प्रदान करते हैं। दुख के समय मनुष्य जिनका स्मरण करके धीरज प्राप्त करता है। सत्संग में लीन रहने वाले मनुष्य को दुखों का भय नहीं रहता है। वह अपने दिल को समझता है, जिससे दुखों का कोई कारण ही शेष नहीं रह जाता। सत्संग के प्रभाव से धैर्य का लाभ होता है जिससे मन में क्षमा की शक्ति स्वयं ही आ जाती है। क्षमा सभी प्रकार के दुर्गुणों का विनाश कर देती है और मन को शांति व संतोष प्रदान करती है।

SubQuestion No : 19
Q. 19 परोपकार रूपी गुण किसको किससे अलग करता है?

Ans


## Comprehension:

नीचे दिए गये गद्यांश के बाद 5 प्रश्न दिए गये हैं। इस गद्यांश को ध्यानपूर्वक पढ़ें और चार विकल्पों में से प्रत्येक प्रश्न का सर्वोत्तम उत्तर चुनें।
सत्संग से लौकिक और पारलौकिक दोनों प्रकार के सुख प्राप्त होते हैं। यदि कोई मनुष्य इस जीवन में दुखी रहता है तो कम से कम कुछ समय के लिए श्रेष्ठ पुरुषों की संगति में वह अपने सांसारिक दुखों का विस्मरण कर देता है। महापुरुषों के उपदेश सदैव सुख शांति प्रदान करते हैं। दुख के समय मनुष्य जिनका स्मरण करके धीरज प्राप्त करता है। सत्संग में लीन रहने वाले मनुष्य को दुखों का भय नहीं रहता है। वह अपने दिल को समझता है, जिससे दुखों का कोई कारण ही शेष नहीं रह जाता| सत्संग के प्रभाव से धैर्य का लाभ होता है जिससे मन में क्षमा की शक्ति स्वयं ही आ जाती है। क्षमा सभी प्रकार के दुर्गुणों का विनाश कर देती है और मन को शांति व संतोष प्रदान करती है।

SubQuestion No: 20
Q. 20 अनुच्छेद के अनुसार सच्ची मानवता क्या है ?

Ans
A. दूसरों के लिए सब न्योछावर कर देना
$X$ B. ईश्वर के लिए सब न्योछावर कर देना
C. अपने लिए सब न्योछावर कर देना
X. पशुओं के लिए सब न्योछावर कर देना

## Section : Discipline1

Q. 1 What condition holds for perpendicularity of 2 vectors?

Ans $X$ A. the vectors are equal
$X$ B. one of the two vectors is zero
$\checkmark$ c. their dot product is zero
$X$ D. their cross product is zero
Q. 2 The graph of a quadratic equation $\mathrm{y}=\mathrm{ax}^{2}+\mathrm{bx}+\mathrm{c}$ is a parabola, when it will be upwards and downwards curve?

Ans $\quad$ A. it will be open upwards if $\mathrm{a}>0$ and downwards if $\mathrm{a}<0$
$X$ B. it will be open upwards if $\mathrm{a}<0$ and downwards if $\mathrm{a}>0$
$X$ c. it will never be open upwards
$X$ D. it will never be open downwards
Q. 3 When the fluid $(\mathrm{F})$ is incompressible then which of following condition holds?

Ans $\quad X A \cdot F=0$
B. $\operatorname{div}(\mathrm{F})=0$
$X$ c. $\operatorname{div}(F)$ is non zero
$X$ D. scalar product vanishes

Q. 4 If f be a function defined in $[\mathrm{a}, \mathrm{b}]$ and is twice differentiable, then it is said to be concave upwards if:

Ans
$X$ A. $\mathrm{f}^{\prime}(\mathrm{x})<0$ for all x
B. $\mathrm{f}^{\prime}(\mathrm{x})>0$ for all $\mathrm{x} \in[\mathrm{a}, \mathrm{b}]$
$x$ c. $f^{\prime}(x)>0$ for all $x$
$X$ D. $\mathrm{f}^{\prime}(\mathrm{x})<0$ for all x
Q. 5 The surface area of a sphere of radius a is

Ans $\times$ A. 0
X B. $4 \pi \mathrm{a}$
C. $4 \pi \mathrm{a}^{2}$
$\times$ D. $-4 \pi \mathrm{a}^{2}$
Q. 6 The inverse of 3 modulo 7 is $\qquad$ ?
Ans $\times$ A. -4
X в. -1
C. -2
$\times$ D. -3
Q. 7 If $A=2 i+j+k B=4 i+j-k$ find $A . B$ ?

Ans $\times$ A. 10
X B. 11
$\times$ c. 9

- D. 8
Q. 8 The points $\mathrm{a}, \mathrm{b}, \mathrm{c}, \mathrm{d}$, taken in that order, in the complex plane are the vertices of a parallelogram if __?

Ans $\times$ A. $a+b=c+d$
$X$ B. $a-b=b-c$
C. $a+c=b+d$

X D. $a+b=b+c$
Q. 9 Which of the following is correct for the function $f(x)=x^{3}-3 x^{2}-9 x-1$ ?

Ans $X$ A. it has local maximum at 3 but has no local minimum
B. it has local maximum at -1 and local minimum at 3
$X$ c. it has local maximum at 3 and local minimum at -2
$X$ D. it neither has local maximum not local minimum
Q. 10 A real number sequence $<\mathrm{f} \_\mathrm{n}>$ is said to be oscillating finitely if?

Ans $\checkmark \mathrm{A}$. it is not divergent
$X B$. it is not convergent
$X$ c. it is not bounded; it is not convergent; it is not divergent
$X$ D. it is not bounded
Q. 11 Which theorem states that "Every bounded sequence has at least a limit point"?

Ans
A. Bolzano weierstrass theorem
$X$ B. Representation theorem
$X$ c. Sandwich theorem
$X$ D. Initial value problem
Q. 12 If $|\mathrm{A}|=4$, find the number of partitions of A ?

Ans $\times$ A. 10
X B. 25
C. 15

X D. 20
Q. 13 To reduce the matrix to row echleon form the leading entry of each row must be?

Ans $X$ A. 2
$X$ B. 0
X C. -1
D. 1
Q. 14 When is a curve said to be symmetric about the pole or origin?

Ans $\quad X$ A. if curve changes when $r$ is replaced by $2 r$
$X$ b. if curve changes when $r$ is replaced by -r
$\checkmark$ C. if curve doesn't change when $r$ is replaced by $-r$
$X$ D. if curve doesn't change when $r$ is replaced by $2 r$
Q. 15 Which of the following is not included in general method to draw a algebraic curve for tracing ?

Ans A. orthogonality
X B. symmetry
$X$ c. tangent to the curve
$X$ D. region
Q. 16 Find the number of anti symmetric relations on set A having 2 elements?

Ans $\times$ A. 14
$X$ B. 16
C. 12

X D. 10
Q. 17 Let A be an $\mathrm{n} \times \mathrm{m}$ matrix with each entry equal to $+1,-1$ or 0 such that every column has exactly one +1 and exactly one
-1 then what can $u$ say about rank of the matrix?
Ans
$X$ A. $\operatorname{rank} A=m$
$X$ B. $\operatorname{rank}(A)=n-1$,
X c. $\operatorname{rank}(\mathrm{A})=\mathrm{n}<\mathrm{m}$
D. $\operatorname{rank} A<=n-1$
Q. 18 Euler function is:
$\square$
$\because$

Ans A. neither one one nor onto
$X$ в. one one
$X$ c. onto
$X$ D. onto but not one one
Q. 19 Identify the set in which supremum of set is equal to infimum of the set?

Ans $\times$ A. empty
$X$ B. $\{1,2,3\}$
C. $\{a\}$
$X$ D. $\{a, b\}$
Q. 20 The congruence relation $\mathrm{ax}=\mathrm{b}(\bmod \mathrm{m})$ has a unique solution if ?

Ans A. $\operatorname{gcd}(a, m)=1$
$X$ B. $\operatorname{gcd}(a, m)$ is any non zero number
$X$ c. $\operatorname{gcd}(a, m)=m$
$X$ D. $\operatorname{gcd}(a, m)$ is any prime number

Section : Discipline2
Q. 1 Find the limit of function $f(x, y)=x+2 y$ as $(x, y)-->(1,2)$ ?

Ans
$X$ A. 3
$X$ B. 2
XC. 4
D. 5
Q. 2 For what value of k does the function $\mathrm{f}(\mathrm{x}, \mathrm{y})=3 \mathrm{xy}$; where $(\mathrm{x}, \mathrm{y})$ is not equal to $(2,3)$ and k whenever $(\mathrm{x}, \mathrm{y})=(2,3)$ ?

Ans
A. 18
$\times$ в. 8
XC. 12

X D. 6

Q. 3 Logistic growth equation is given by?

Ans A. $\mathrm{rN}((\mathrm{K}-\mathrm{N}) / \mathrm{K})$
$X$ B. $\mathrm{rN} / \mathrm{K}$
Xc. $\mathrm{rN}(\mathrm{K}-\mathrm{N})$

X D. $\mathrm{rN} /(\mathrm{k}(\mathrm{k}-\mathrm{N}))$
Q. 4 Local minimizer u of J is isolated if there exists $\mathrm{p}>0$ and for u in S we have?

Ans
A. $\mathrm{J}(\mathrm{u})<\mathrm{J}(\mathrm{v})$
$X$ B. $J(v)$ is possible
$X$ c. $\mathrm{J}(\mathrm{u})>\mathrm{J}(\mathrm{v})$
$\times$ D. $J(u)$ is possible
Q. 5 Many scientists use mathematical model to convert data into $\qquad$ ?
Ans $\times$ A. passage
$X$ B. system
$\checkmark$ C. model
$X$ D. raw form
Q. 6 The infinite series $\sum \cos (1 / \mathrm{n})$ where n goes from 1 to infinity is?

Ans A. divergent
$X$ B. finite
$X$ c. convergent
$X$ D. oscillates finitely
Q. 7 Find the limit point of the sequence $<1+1 / n>$ ?

Ans $\times$ A. 2
X в. -1
$X$ c. 0

- D. 1
Q. 8 Find the limit of the function $f(n)=1 / n$ where $n$ approaches infinity

Ans $\times$ A. 3
XB. 2
C. 0
$X$ D. 1
Q. 9 Let $A=\{z \in C:|z|>1\} B=\{z \in C: z$ is not equal to 0$\}$ then which is the false statement?

Ans $X$ A. there is a continuous onto function $f: A-->B$
$X$ B. there is a non constant Analytic function $f: A-->B$
$\checkmark$ c. there is a non constant Analytic function from $\mathrm{f}: \mathrm{B}-\mathrm{-}>\mathrm{A}$
$X$ D. there is a continuous function one to one function $f: B-->A$

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Q. 10 Which rule is used to calculate limits when the function reaches to indeterminate forms?

Ans $X$ A. $C$ and $D$ rule
$X$ b. Leibnitz rule
$\checkmark$ C. L' Hospital's rule
$X$ D. Cinco rule
Q. 11 If $L$ be a limit point of the sequence $<A>$ then there exists a subsequence $<B>$ of the sequence $<A>$ which converges to?

Ans $\times$ A. 2 L
X B. 3L
$\checkmark$ C. L
X D. 4 L
Q. 12 ( $\mathrm{B}(\mathrm{x}, \mathrm{y})$ symmetric group of order n ) is a closed subspace of $(\mathrm{B}(\mathrm{x}, \mathrm{y})$ group of order n$)$ for what value of n ?

Ans
A. n greater than or equal to 2
$X B$. for infinite n
$X c$. for $n$ equal to one
$X \mathrm{D}$. for n having zero value
Q. 13 The solution of the initial value problem $x y^{\prime}-y=0$ with $y(1)=1$ is?

Ans
$x$ A. $y=2 x-1$
$X$ B. $y=1 / x$
C. $\mathrm{y}=\mathrm{x}$

X D. $\mathrm{y}=1 /(2 \mathrm{x}-1)$
Q. 14 Change in number of individuals in population over a period of time is called $\qquad$
Ans $\times$ A. logistic growth
$X$ B. exponential growth
$\checkmark$ c. population growth
$X$ D. sigmoid growth
Q. 15 What will we do to make the given differential equation exact?

Ans $\times$ A. we divide it by its derivatives
$X$ B. we do integration on both sides
$X$ c. we bipolarate the same
$\checkmark$ D. we multiply it with integrating factor
Q. 16 The infinite series -1-3-5-7...... diverges to?

Ans $X$ A. infinity
$\checkmark$ B. negative of infinity
$X$ c. zero
$X$ D. one
Q. 17 Pick the true statement

Ans $\times$ A. series always converges to a finite number
B. Every convergent sequence is cauchy sequence
$X$ c. every convergent sequence is not bounded
$X$ D. No Cauchy sequence is convergent
Q. 18 Function $\mathrm{f}(\mathrm{x}, \mathrm{y})$ is said to be continuous at $(\mathrm{a}, \mathrm{b})$ whenever $|\mathrm{f}(\mathrm{x}, \mathrm{y})-\mathrm{f}(\mathrm{a}, \mathrm{b})|<€$ if?

Ans
$X$ A. no such function exists
B. $|\mathrm{y}-\mathrm{b}|<$ delta both follow.
$X$ c. $|\mathrm{y}-\mathrm{b}|<$ delta
$X$ D. $|\mathrm{x}-\mathrm{a}|<$ delta
Q. 19 All non trivial solutions of $x^{2} y^{\prime \prime}+x y^{\prime}+4 x y$ are?

Ans $\checkmark$ A. bounded and non periodic
$X$ B. periodic
$X c$. bounded and periodic
$X$ D. unbounded
Q. 20 Let $A$ is a subset of $R$ and $f: A$ to $R$ is given by $f(x)=x^{2}$, then $f$ is uniformly continuous if ?

Ans $\quad X A$. $A$ is dense subset of $R$
$X$ B. A is open
$\checkmark$ C. A is bounded subset of R
$X$ D. $A$ is unbounded

## Section : Discipline3

Q. 1 The area bounded by the curve $y=2 \sqrt{ } x, y=-x, x=1$ and $x=4$ is given by ?

Ans
XA. 25

- B. $101 / 6$

X c. $(1 / 2)$
X D. $(1 / 56)$

Q. 2 Function $\mathrm{f}:[\mathrm{a}, \mathrm{b}]-->\mathrm{R}, \mathrm{P}$ and Q are partition of $[\mathrm{a}, \mathrm{b}]$ s.t. P is contained in Q then?

Ans $\quad X A \cdot L(f, P)>=U(f, Q)$
$X$ B. both never hold
$\checkmark$ c. $\mathrm{L}(\mathrm{f}, \mathrm{P})<=\mathrm{L}(\mathrm{f}, \mathrm{Q})$
$X D$. one is true other is false
Q. 3 In which case improper integral becomes equal to Riemann integrable?

Ans $\times$ A. never possible
B. as a special case of Lebesgue integral
$X$ c. sometimes differentiable
$X$ D. occurs somehow
Q. 4 Find radius of convergence of $\infty \sum \mathrm{n}=0(\mathrm{x}-7)^{\wedge}((\mathrm{n}+1) / \mathrm{n} \wedge \mathrm{n})$.?

Ans $X$ A. 0
XB. 2
XC. 1
$\checkmark$ D. infinity
Q. 5 For the function to be Riemann integrable what will be the condition in terms of affecting the power series?

Ans $\times$ A. upper integral does not exist
$X$ B. lower integral is less then upper integral
$X$ c. lower integral does not exist
$\checkmark$ D. lower integral is same as upper integral
Q. 6 Pick the wrong statement?

Ans A. discontinuity always occurs at upper limit
$X$ B.
Discontinuity occurs at both upper and lower limits of the function
$\times \mathrm{c}$.
Improper integral of 2 nd kind has discontinuity at lower limit
$\times$ D.
Improper integral of 2 nd kind has discontinuity at upper limit
Q. 7 The divergence of a vector field A is always equal to zero if the vector field A can be expressed as ?

Ans $\times$ A. the divergence of vector field
$\times$.
divergence of any scalar field: Is this option a direct eliminator? Better change it
$X$ c. gradient of any scalar field
$\checkmark$ D. the curl of any vector field
Q. 8 If $R$ is the position vector, then $\operatorname{divR}$ is equal to

Ans $\times$ A. 2
$X$ B. 4
XC. 1

จ. 3
Q. 9 Which of the following function contains odd terms in the expansion of Taylor's series?

Ans
$X$ A. $\cos \left(\mathrm{x}^{2}\right)$
B. $\sin \left(\mathrm{x}^{3}\right)$
Xc. $\sin \left(x^{2}\right)$

X D. $\cos \left(\mathrm{x}^{3}\right)$
Q. 10 Green's theorem is used to ?

Ans $\quad \times \mathrm{A}$. volume of plane figures
B. solve 2-D flow equation
$X$ c. bipolarate the same:
$X$ D. parameter of plane figures
Q. 11 The necessary and sufficient condition for Taylor's theorem is that?

Ans $X$ A. $f$ is not differentiable
$\checkmark$ B. f has higher derivatives
$X$ c. $f$ is continuous
$X$ D. f should exist
Q. 12 The line integrals can be converted to surface integral using -------- in multiple connected domain?

Ans $\times$ A. Riemann equation
$X$ B. Baire's Sandwich theorem
$X$ c. Sandwich theorem

- D. Green's theorem
Q. 13 Find the value of $f(x, y)=8 x+5 y-7$ at $(x, y)=(1,2)$

Ans A. 11
$X$ B. 14
Xc. 13
$\times$ D. 12
Q. 14 A function is said to be Riemann integrable of over $[a, b]$ s.t.any number $L$ lying between $L(f, P)$ and $U(f, P)$ s.t. for $€>0$ s.t.?

Ans
$\checkmark$ A. $|\mathrm{U}(\mathrm{f}, \mathrm{P})-\mathrm{L}|<€$ and $|\mathrm{L}-\mathrm{L}(\mathrm{f}, \mathrm{P})|<€$
$X$ в. $|\mathrm{U}(\mathrm{P}, \mathrm{f})-\mathrm{L}|>€$
$X$ c. contractive
$X$ D. $|\mathrm{L}-\mathrm{L}(\mathrm{f}, \mathrm{P})|>€$
Q. 15 The domain of $\cos (x)$ is ___?


Ans $X$ A. $[0,1]$
$X$ B. $[1,2]$
C. $[-1,1]$

X D. $[-1,0]$
Q. 16 Find the interior of $\{1,2,3,4$,$\} ?$

Ans $\times$ A. $\{3\}$
X B. $\{1\}$
C. empty

X D. $\{2\}$
Q. 17 If p and q are positive numbers and $\mathrm{p}^{2}+\mathrm{q}^{2}=1$ then maximum value of $\mathrm{p}+\mathrm{q}$ is?

Ans $X$ A. infinity
X B. $\sqrt{3}$
C. $\sqrt{2}$

X D. 14
Q. 18 Evaluate the double integral $\mathrm{x} \sin (\mathrm{x}+\mathrm{y}) \mathrm{dxdy}$ over $\mathrm{R}=[0, \pi ; 0, \pi / 2]$ ?

Ans $\times$ A. $\pi+2$
X B. $-2 \pi$
XC. $2 \pi$
D. $\pi-2$
Q. 19 The limit points of $<1,0,2,1,0,2,1,0,2 \ldots>$ ? Is/are:

Ans $X$ A. 2 only
B. $1,0,2$
Xc. 1 only

X D. 0 only
Q. 20 The set of limit points of a sequence is:


Ans A. closed set
$X$ B. both open and closed
$X$ c. neither open nor closed
$X$ D. open set
Q. 1 Which property does not hold as a binary operation in groups?

Ans $X$ A. Matrix multiplication
$X$ B. multiplication
$X$ c. addition
D. subtraction
Q. 2 If $f(z)=u+i v$ is an analytic function in domain $D$ then?

Ans
A. u and v form orthogonal family
$X B . u$ and $v$ are parallel
$X$ c. $u$ and $v$ intersect each other
$X \mathrm{D} . \mathrm{u}$ and v bipolarate each other
Q. 3 A linear operator define by T in metric space is said to be bounded iff?

Ans $X A$. $T(x)$ is positive
X B. $\|\mathrm{T}(\mathrm{x})\|$ exists
$\checkmark$ c. $\|\mathrm{T}(\mathrm{x})\|<\mathrm{k}\|\mathrm{x}\|$
$X$ D. $T(x)$ is negative

A. $\mathrm{I}(\mathrm{x})$ is negative

Q. 4 A set G with one binary operation which is closed as well as associative is called?

Ans $\times$ A. groupoid
$X$ B. monoid
$\checkmark$ c. semigroup
$X$ D. group
Q. 5 A metric space X is said to be complete if

Ans
A. if every Cauchy sequence in X converges in X
$X$ в. if every convergent sequence in it is bounded
$X$ c.
if every Cauchy sequence in X has more than 2 convergent subsequences
$X$ D. if Cauchy sequence in X is not convergent
Q. 6 A metric space defined by $\{d(x, y)=r$ for all $x, y \in R\}$ is called as

Ans A. sphere
$X$ B. set
$X$ c. open ball
$X$ D. algebra
Q. 7 Which is known as multiplicative identity of group with respect to external binary operation?

Ans $X$ A. 0
$X$ в. Q
C. 1
$X$ D. R
Q. 8 How many subgroups(p) of non cyclic groups $G$ is possible?

Q. 10 Let $A$ be a subset of $R$. which of the following properties imply $A$ is compact?

Ans $\times$ A.
there is no one one and continuous function from A onto $(0,1)$

- B. Every continuous function f from A to R is bounded
$X c$. there exists a continuous function from $A$ onto $[0,1]$
$\times$.
Every sequence $\{\mathrm{x}\}$ in A has no convergent subsequence converging to a point in A
Q. 11 For any two subsets X and Y let $\mathrm{X}+\mathrm{Y}=\{\mathrm{x}+\mathrm{y}: \mathrm{x} \in \mathrm{X}, \mathrm{y} \in \mathrm{Y}\}$ then find the wrong one?

Ans $X$ A. if X is closed Y is compact then $\mathrm{X}+\mathrm{Y}$ is closed
$X$ B. if $X$ and $Y$ are compact then $X+Y$ is compact
C. If X and Y are closed then $\mathrm{X}+\mathrm{Y}$ is closed
$X$. if $X$ and $Y$ are open sets then $X+Y$ is open
Q. 12 Continuous function $C[a, b]$ from $a$ to $b$ is called

Ans $\times$ A. not defined
$X$ B. cyclic
$X$ c. not bounded
D. bounded function
Q. 13 Choose the wrong statement

Ans $\times$ A. every non abelian group has abelian subgroup
$X$ B. Every element generates a cyclic subgroup of its own order
C. Klein's group is not abelian
$X$ D. a subgroup of a cyclic group is cyclic
Q. 14 What are maximal subgroups of Klein's group?

Ans A. $\{\mathrm{e}, \mathrm{c}\}$
$X$ в. $\{e, a\},\{e, b\},\{e, c\}$
$X c .\{e, a\}$
$X$ D. $\{e, b\}$
Q. 15 The symmetric property in a metric space is

Ans
$x$ A. $d(x, y)>0$
$X$ B. $d(x, y)=0$
C. $\mathrm{d}(\mathrm{x}, \mathrm{y})=\mathrm{d}(\mathrm{y}, \mathrm{x})$

X D. $\mathrm{d}(\mathrm{x}, \mathrm{y})<0$
Q. 16 Integrate $1 /\left(z^{3}-1\right)^{2}$, the counter clockwise around the circle $|z-1|=1$ ?

Ans $\times$ A. $-2 \pi \mathrm{i} / 9$
X B. $2 \pi \mathrm{i}$
Xc. $4 \pi \mathrm{i}$
D. $-4 \pi \mathrm{i} / 9$
Q. 17 For what values of $z$ the function defined by the equation $z=\sinh u \cdot \cos v+i \sinh u \cdot \operatorname{sinv} ; w=u+i v$ ceases to be analytic?

Ans
$\checkmark$ A. $+\mathrm{i},-\mathrm{i}$
X B. 1
$X$ c. 0
$X$ D. -1
Q. 18 Number of onto homomorphism from Klein's group to Symmetric group of order 4?

Ans
XA. 1
$X$ B. 2
$\checkmark$ C. does not exist
X D. 3
Q. 19 The external direct product of two groups is abelian if and only if?

Ans $X$ A.
both are not abelian - do you mean None is abelian - if so, better change it like that
$X$ B. one is abelian
$X$ c.
other is abelian - What option is this? Is this not included in the previous option itself?
D. both are abelian
Q. 20 Let K be a group with 8 elements. Let H be a subgroup of K and $\mathrm{H}<\mathrm{K}$. It is known that the size of H is at least 3 . The size of H is?
Ans $\times$ A. 1
$X$ в. 3
XC. 2
D. 4
Q. 1 How many real roots are possible for the equation $x^{5}-x^{4}+x^{3}-1=0$ ?

Ans $\times$ A. atleast three real roots
$\checkmark$ B. at least one real root
$X$ c. no real root
$X$ D. atleast two real roots
Q. 2 The line integral of function $F=y z i$, in the counterclockwise direction, along the circle $x^{2}+y^{2}=1$ at $z=1$ is?

Ans $X$ A. 0
XB. 2
C. $\pi \mathrm{i}$

X D. $-\pi \mathrm{i}$
Q. 3 What will be the minimum degree of polynomial with integer coefficients, having roots $2-\sqrt{ } 5,3,4$ ?

Ans A. 4
$X$ B. 1
$X$ c. 2
XD. 3

Q. 4 Which theorem connects the result $<T(x), y>=\langle x, z>$ ?

Ans
A. Riesz representative theorem
$X$ B. Hilbert Theorem
$X$ c. Hahn Banach Theorem
X D. Picard theorem
Q. 5 If $u=(1,0,1) v=(0,1,1)$ find the cosine of angle between these two vectors using inner product?
Ans
XA. (1/4)
B. $(1 / 2)$
$X$ c. 0
X D. $(1 / 3)$
Q. 6 Find the residue of $(2 z+1) /((z+1)(z-1))$ at $z=1$ ?

Ans
X A. (1/2)

- B. (3/2)
Xc. $(5 / 2)$
$X$ D. $(7 / 2)$
Q. 7 Find the residue of $z^{3} /\left(z^{2}-1\right)$ at $z=$ infinity?

Ans
X A. -2
B. -1
$\times$ c. 2
X D. 1
Q. 8 Choose the wrong statement

Ans $X A$. If $R$ is integral domain then $R[x]$ is also an integral domain
$X B$. If $R$ is integral domain then unit of $R$ and $R[x]$ are same
C. $\mathrm{R}[\mathrm{x}]$ is not CRU
$X D . R[x]$ is infinite ring
Q. 9 Evaluate the integral ( $1 / \mathrm{z}$ ) dz where C is the circle $\mathrm{z}=\mathrm{e} \wedge$ ( ib ) where $0<\mathrm{b}<\pi$ ?

Ans $\times$ A. $2 \pi \mathrm{i}$
$\times$ B. 0
C. $\pi \mathrm{i}$

X D. $-\pi \mathrm{i}$
Q. 10 Which of the following is not a polynomial ring?

Ans
$X A . \mathrm{Q}[\mathrm{x}]$
$X$ B. $C[\mathrm{x}]$
Xc. $\mathrm{R}[\mathrm{x}]$
D. $\mathrm{R}[\mathrm{x}]-\mathrm{Z}[\mathrm{x}]$

## Q. 1 CIC stands for <br> $\qquad$

Ans $\quad$ A. Competent interactional classroom
B. Competent intern classroom

X C. Competent institutional classroom
D. Classroom interactional competence

## Q. 2 From following which is not a type of Blog?

Ans
X A. Group blog
X B. Micro blog
C. Social blog

X D. Personal blog

## Q. 3 In 2009 which Shiksha Abhiyan was launched ?

Ans A. The Rashtriya Madhyamik
$X$ B. The primary Section
X C. The Prabhakar Madhyamik
$X$ D. The Secondary Section


## Q. 4 Constructivist theory in education is based on

Ans
A. the idea that people actively construct or make their own knowledge
B. the idea that learn from the society

X C. the knowledge from the book they learn
$X$ D. the idea that teacher give

## Q. 5 Hard applied discipline emphasizes on which of the following?

Ans $\quad$ A. Emphasize understanding and interpretation
B. Emphasize Products and techniques

X C. Emphasize Process and Protocols
X D. Emphasize discoveries and Explanations
Q. 6 Which one is not a part of Organisation and Integration of Learning Experiences and Content?
Ans
X A. Available learning situations in school

- B. Principles of teachers

Х C. Inputs for effective classroom interaction
X D. Developmental level of learning
Q. 7 Which colour is regarded as masculine?

Ans
X A. Grey
X B. Red
× C. Pink
D. Blue
Q. 8 Educational realism is the belief that we should study $\qquad$ critical thinking, and the scientific method to teach students to perceive and understand reality.
Ans
X A. fallacy
X B. irrational
C. logic

X D. incoherent
Q. 9 Which pairs help participants to develop interpersonal skills, confidence, communication, and assertiveness?
Ans

C. Mix gender

X D. Male
Q. 10 $\qquad$ is the major means of learning.
Ans $\quad \times$ A. Writing
B. Experience
$X$ c. Practice
$\times$ D. Reading

