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|  | DELHI METRO RAIL CORPORATION LTD. |
| (Metro Bhawan, Fire Brigade Lane, Barakhamba Road, Delhi-110001) |  |$\right]$

Section: Technical
Q. 1 Consider a closed-loop system with transfer function $\frac{C(s)}{R(s)}=\frac{s^{2}+2 s+8}{s^{3}+2 s^{2}+6 s+10}$

Find the number of poles in right half of s plane and in left half of s plane.
Ans
Х1.3,1

- 2. 0,3

X3.3,2
X4.5,4
Q. 2 The measured value of a resistance is $20.25 \Omega$, whereas its true value is $20 \Omega$. Determine the absolute error.

Ans
$X 1.1 .0 \Omega$
$X$
2. $0.5 \Omega$
$X$
3. $5.0 \Omega$
4. $0.25 \Omega$
Q. 3 A charge Q is located at $(0,0,3)$ and -Q is located at $(0,0,-3)$. The electric field intensity $(\mathrm{E})$ at point $(4,0,0)$ is:

Ans $\quad X$ 1. Negative $X$ - direction2. Positive Y-direction

X 3. Positive $Z$ - direction
4. Negative Z - direction

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Q. 4 A 1- $\Phi$ transformer has total iron losses of 2500 W at 50 Hz and 400 V input supply voltage. When the applied voltage is 200 V and supply frequency is 25 Hz , the total iron loss is found to be 850 W . Calculate the eddy current loss at 400 V 50 Hz .
(consider $\mathrm{V} / \mathrm{f}$ ratio as constant)
Ans
X 1. 2000 W

- 2. 1600 W

X 3. 1500 W
X 4. 1000 W
Q. 5 The per unit impedance of a synchronous machine is 0.242 . If the base voltage is increased by 1.1 times, then the per unit impedance will be:
Ans
$X 1.1 .0$
$X 2$
2. 0.6

X 3. 0.8
4. 0.2
Q. 6 For the two-port network shown here, find the values of $Z_{11}$ and $Z_{22}$.


Ans
X 1. $10 \Omega$ and $60 \Omega$
X2. $15 \Omega$ and $20 \Omega$
X 3. $30 \Omega$ and $10 \Omega$

- $4.9 \Omega$ and $24 \Omega$
Q. 7 Three identical resistors connected in star consume 4000 W when connected across balanced 3- $\Phi$ supply. What is the power consumed, if the three resistors are connected in delta across the same supply?
Ans
X 1. 20000 W
7

2. 16000 W

X 3. 4000 W
4. 12000 W

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Q. 8 Figure shows 1- $\Phi$ full converter feeding RLE load with $X_{L}=3 \Omega, R=4 \Omega$, and $E=10 \mathrm{~V}$. Determine the average value of load voltage for the average load current of $\mathrm{I}_{\mathrm{Lo}}=50 \mathrm{~A}$.


Ans
$\times 1.150$
Х 2.190
X 3.110
4. 260
Q. 9 A n -bit Analog to Digital Converter $(\mathrm{ADC})$ is required to convert an analog input in the range $0-5 \mathrm{~V}$ dc to an accuracy of 5 mV . What is the value of n ? (where n denotes resolution of ADC )
Ans
$X 1.8$
2. 10
$\times 3.12$
X4.9

Question ID : 6395132799
Q. 10 The fractional slip of 3- $\Phi$ induction motor is the ratio of:

Ans
$X 1$. rotor copper loss / rotor output
$X$ 2. stator copper loss / stator input
$X$ 3. rotor copper loss / stator copper loss

- 4. rotor copper loss rotor input
Q. 11 A 3- $\Phi, 5 \mathrm{~kW}$ induction motor has a p.f. of 0.75 lagging. A bank of capacitors is connected in delta across the supply terminals, then p.f. is raised to 0.9 lagging. Determine the kVAr rating of the capacitors connected in each phase.
Ans
$X 1.0 .313 \mathrm{kVAr}$
X 2. 0.256 kVAr
- 3. 0.663 kVAr

X 4. 0.113 kVAr

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Q. 12 Forward path transfer function of a unity feedback system is
$\mathrm{G}(\mathrm{s})=\frac{K}{(s+5)(s+10)(s+15)}$
Select appropriate value of K for the system to be oscillatory.
Ans
X 1.4000
$\times 2.5250$
$\times 3.2400$
4. 7500
Q. 13 If $f(t)$ is the step-response of a linear time invariant system, then its impulse response $h(t)$ is given by:
(where ' t ' indicates continuous time domain)
Ans
$X 1 \cdot h(t)=\int f(t)$
2. $h(t)=\frac{d}{d t} f(t)$

X 3. $\mathrm{h}(\mathrm{t})=[\mathrm{f}(\mathrm{t})]^{2}$
X 4. $\mathrm{h}(\mathrm{t})=\mathrm{f}(\mathrm{t})$
Q. 14 An alternator has 18 slots per pole and the first coil lies in slots 1 and 16 . Calculate the pitch factor of the coil for $3^{\text {rd }}$ harmonic.
Ans
X 1.1 .5
X 2. 2.5
3. 0.707
$\times 4.3 .0$
Q. 15 Two wattmeters are connected to measure the total power consumed by a $3-\Phi$ load at 0.5 power factor lagging. The total power consumed by the load as indicated by the two wattmeters is 30 kW . Find the individual wattmeter readings.

Ans
X ${ }^{1} \cdot W_{1}=10 \mathrm{~kW} \& \mathrm{~W}_{2}=20 \mathrm{~kW}$
X 2. $\mathrm{W}_{1}=15 \mathrm{~kW} \& \mathrm{~W}_{2}=15 \mathrm{~kW}$3. $\mathrm{W}_{1}=5 \mathrm{~kW} \& \mathrm{~W}_{2}=25 \mathrm{~kW}$
4. $\mathrm{W}_{1}=30 \mathrm{~kW} \& \mathrm{~W}_{2}=0$

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Q. 16 A series R-L-C circuit is supplied by $100 \mathrm{~V}, 50 \mathrm{~Hz} \mathrm{AC}$. What is the power factor of the circuit at resonance?
(where $\mathrm{R}=10 \Omega, \mathrm{~L}=10 \mathrm{mH}, \mathrm{C}=100 \mu \mathrm{~F}$ )
Ans

1. Zero
2. Unity
$X$ 3. 0.6 lagging
$\times 4.0 .6$ leading
Q. 17 Determine average power of the signal
$x(t)=\cos \left(2 \pi f_{0} t\right)$
(where $f_{0}$ is the fundamental frequency and ' $t$ ' indicates continuous time domain)
Ans
X 1.1 .0 W
X2. 2.0 W
X 3. 10 W

- 4. 0.5 W
Q. 18 Given is the magnetic field intensity $\overline{\mathrm{H}}=3 \overline{a_{x}}+7 y \overline{a_{y}}+2 x \overline{a_{z}} \mathrm{~A} / \mathrm{m}$ / Calculate the current density $\overline{\mathrm{J}}\left(\mathrm{A} / \mathrm{m}^{2}\right)$.

Ans
X1. $3 \overline{a_{x}}$
2. $-2 \overline{a_{y}}$
$\times 3.12 \overline{a_{y}}$
X4. $-7 \overline{a_{z}}$

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Q. 19 The difference equation of the system is $2 y(n-2)-3 y(n-1)+y(n)=4 x(n-1)+x(n)$. Determine $\mathrm{Y}(\mathrm{z}) / \mathrm{X}(\mathrm{z})$.
(all initial conditions are zero; ' n ' represents discrete time signal, $\mathrm{Y}(\mathrm{z})$ is output signal and $\mathrm{X}(\mathrm{z})$ is input signal)
Ans
X 1. $\frac{z^{2}}{z^{2}-3 z+2}$2. $\frac{4 z}{z^{2}-3 z}$3. $\frac{z^{2}+4 z}{z^{2}-3 z+2}$4. $\frac{z^{2}+4 z}{3 z+2}$
Q. 20 A 3- $\Phi$ full-wave converter as shown in the figure is operated from a 3- $\Phi$ Y-connected $208-\mathrm{V}$ (line -line rms ), $50-\mathrm{Hz}$ supply and the load resistance is $R=10 \Omega$. If the delay angle $\alpha$ is $60^{\circ}$, find the average output voltage?


Ans
X 1.160 .32 V

- 2. 140.45 V

X 3. 200.56 V
X4. 100 V
Q. 21 For the common emitter configuration shown in the figure, find the value of $R_{C}$
$\left(\mathrm{V}_{\mathrm{CC}}=15 \mathrm{~V}, \mathrm{~V}_{\mathrm{CE}}=5 \mathrm{~V}, \mathrm{I}_{\mathrm{C}}=5 \mathrm{~mA}\right.$, current gain $\left.(\beta)=100\right)$


Ans
-1. $1.98 \mathrm{k} \Omega$
Х2. $2.54 \mathrm{k} \Omega$
Х3. $3.56 \mathrm{k} \Omega$
Х4. $4.20 \mathrm{k} \Omega$
Q. 22 Find the divergence of a vector $\vec{A}=x^{2} \hat{a}_{x}+6 y^{2} \hat{a}_{y}+z^{3} \hat{a}_{z}$ at point $\mathrm{P}(2,4,1)$.

Ans
$\times 1.10$
$X$
2. 24
$X$
3. 16
4. 55
Q. 23 The single-phase half-bridge inverter as shown in the figure here has a resistive load with output power of 240 W and the DC input voltage of $\mathrm{Vs}=48 \mathrm{~V}$. Determine the value of load resistance $(\mathrm{R})$ connected?


Ans
-1. $2.4 \Omega$
X2. $10 \Omega$
X 3. $20.6 \Omega$
X $4.6 .4 \Omega$
Q. 24 A unity feedback system is given by
$G(s)=\frac{10(s+2)}{s^{2}(s+5)}$
For input, $r(t)=1+2 t, t>0$ the steady state error $e(t)$ is:
Ans
$X$ 1. infinity

- 2. zero3. six4. five
Q. 25 A 4-pole, $50 \mathrm{~Hz}, 3-\Phi$ induction motor has a slip of $6 \%$. Calculate the speed of the motor.

Ans
$X 1.1250 \mathrm{rpm}$
$\times 2.1350 \mathrm{rpm}$
X 3.1500 rpm
4. 1410 rpm

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Q. 26 Find the range of K for the system shown in the figure to be stable.

where $\mathrm{G}(\mathrm{s})=\frac{K}{s^{2}+2 s+4}$ and $\mathrm{H}(\mathrm{s})=\frac{1}{s^{2}+3 s+5}$
Ans
X 1. $-5<\mathrm{K}<-2$

- 2. $-1<\mathrm{K}<1$

X 3. $-2<\mathrm{K}<0$
X 4. Unstable
Q. 27 The rating of $1-\Phi, 2400 / 240 \mathrm{~V}$ two winding transformer is 50 kVA . It is reconnected as step up auto transformer with 2400 V as input. Find the kVA rating of auto transformer:
Ans
X 1. 250 kVA
2. 550 kVA

X 3. 1000 kVA
X 4. 750 kVA
Q. 28 A $40 \mathrm{kVA}, 100 / 400 \mathrm{~V}, 1-\Phi, 50 \mathrm{~Hz}$ transformer has iron loss of 400 W and copper loss of 1600 W at full load. What is the efficiency of the transformer at half load with 0.8 power factor lagging?

Ans

1. 95.2 \%

X 2. $86.6 \%$
X $3.99 .1 \%$
X $4.90 .8 \%$
Q. 29 Distance protection relay is used in:

Ans
$X$ 1. transformer
$X$ 2. generator

- 3. transmission line

X 4. motor

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Q. 30 A $500 \mathrm{M} \mathrm{VA}, 18 \mathrm{kV}$ alternator has reactance of 0.25 p .u. Find the per unit reactance of the alternator for the base value of $100 \mathrm{MVA}, 20 \mathrm{kV}$.

Ans

1. 0.2103 p.u.

X 2. 0.1243 p.u.
X 3. 0.4301 p.u.

- 4. 0.0405 p.u.
Q. 31 Select the correct relation [ $\mathrm{D}=$ Duty cycle].

Ans Boost converter:

- 1
$\frac{V_{\text {out }}}{V_{\text {in }}}=\frac{1}{1-\mathrm{D}}$
Buck converter:
$\times 2$
$\frac{V_{\text {out }}}{V_{\text {in }}}=1-\mathrm{D}$
Boost converter:
$X 3$
$\frac{v_{\text {out }}}{V_{\text {in }}}=\mathrm{D}$
Buck-boost converter:
$\times 4$

$$
\frac{v_{\text {out }}}{v_{\text {in }}}=\mathrm{D}
$$

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Q. 32 Calculate the transfer function of the following system.


Ans

$$
\text { 1. } \frac{G_{a} G_{b}}{1+G_{a} H_{a}+G_{b} H_{b}+G_{a} G_{b} H_{a} H_{b}}
$$

⒉ $\frac{G_{a} G_{b}}{1-G_{a} H_{a}-G_{b} H_{b}+G_{a} G_{b} H_{a} H_{b}}$
$\times$ 3. $\frac{G_{a} G_{b}}{1+G_{a} G_{b}+H_{b} H_{a}}$
$\times 4 . \frac{G_{a} G_{b}}{1+G_{a} G_{b} H_{b}+G_{b} H_{a}}$
Q. 33 If a voltage-controlled bus is treated as a load bus, then which of the following limits would be violated?

Ans

1. Active power
2. Reactive power
$X$ 3. Phase angle
$X$ 4. Energy
Q. 34 Transfer function $\frac{C(s)}{R(s)}$ of the system shown in the figure here is:


Ans
⒈ $\frac{G_{a} G_{b}}{H_{a}\left(1+G_{a} G_{b} H_{b}\right)}$
$\times 2 \cdot \frac{G_{a} G_{b}}{1+G_{a} G_{b} H_{a} H_{b}}$
$\times$ 3. $\frac{G_{a} G_{b} H_{b}}{H_{a}\left(1+G_{a} G_{b} H_{b}\right)}$
4. $\frac{G_{a} H_{b}}{H_{a}\left(1+G_{a} G_{b} H_{b}\right)}$
Q. 35 A potential field is given by $V=3 x^{2} y-y z$. Find the electric field at $(1,0,-1)$

Ans
$X 1.4 \hat{a}_{z}$
$\times 2.3 \hat{a}_{x}-3 \hat{a}_{y}$
, 3. $-4 \hat{a}_{y}$
$X 43 \hat{a}_{x}+4 \hat{a}_{y}$
Q.36 The armature resistance of an 18.65 kW 250 V dc series motor is $0.1 \Omega$, the brush voltage drop is 3 V and series field resistance is $0.05 \Omega$. When the motor takes 80 A , its speed is 600 rpm . Calculate the speed when the motor takes a current of 100 A .
Ans
$X 1.556 \mathrm{rpm}$
X 2.315 rpm

- 3. 474 rpm

X4. 653 rpm
Q. 37 The plot of armature torque $\left(\mathrm{T}_{\mathrm{a}}\right)$ Vs armature current $\left(\mathrm{I}_{\mathrm{a}}\right)$ of a de series motor is:
( $\mathrm{T}_{\mathrm{a}}$ on Y -axis and $\mathrm{I}_{\mathrm{a}}$ on X -axis)
Ans

- 1. parabola up to saturation and straight tine afterwards
$\times$ 2. straight line throughout
X 3. constant (parallel to X-axis)
X 4. parabola throughout
Q.38 A simple slide wire potentiometer is used for measurement of current in a circuit. The voltage drop across a standard resistor of $0.1 \Omega$ is balanced at 75 cm . Find the magnitude of current if the standard cell emf of 1.45 volt is balanced at 50 cm .
Ans
X 1.40 A
$\times 2.35 \mathrm{~A}$
$\times 3.15 .5 \mathrm{~A}$
- 4. 21.75 A


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Q. 39 Consider a signal $\mathrm{x}(\mathrm{t})$ as shown in the figure here.


Plot the graph of $x(-2 t+3)$.
(where ' $t$ ' indicates continuous time domain)
Ans
$\times 1$.

$\times 2$


$\times 4$

Q. 40 A buck converter has an input current of 2.4 A while required output current is 6 A . What will be the duty cycle of the converter? [Assume lossless system]
Ans
-1. 0.4
$\times 2.1 .0$
$\times 3.0 .8$
$\times 4.2 .0$
Q. 41 Determine the Nyquist rate of signal $\mathrm{x}(\mathrm{t})=\cos (200 \pi \mathrm{t}) * \sin (300 \pi t)$ according to the sampling theorem.
(where ' $t$ ' indicates continuous time domain)
Ans
$\times 1.150$
$\times 2.100$

- 3. 500
$X$

4. 250
Q. 42 The starting current of an induction motor is five times the full load current while the full load slip is $8 \%$. Find the ratio of starting torque to full load torque.

Ans

1. 8.0
2. 4.0
$X$
3. 0.6
4. 2.0
Q. 43 What is the value of $(64)_{16}+(80)_{10}$ ?

Ans

- 1. $(180)_{10}$
$\times$ 2. $(76)_{10}$
$X^{3 .}(164)_{10}$
$\times 4 .(100)_{10}$
Q. 44 Consider the system
$\mathrm{G}(\mathrm{s}) \mathrm{H}(\mathrm{s}$

$$
\mathrm{I}(\mathrm{~s})=\frac{1}{s(1+3 s)(1+5 s)}
$$

Select the appropriate phase crossover frequency from the following options.
Ans
$X 1.6 \mathrm{rad} / \mathrm{sec}$
$X$
2. $2.46 \mathrm{rad} / \mathrm{sec}$
$X$
3. $3.23 \mathrm{rad} / \mathrm{sec}$
4. $0.2582 \mathrm{rad} / \mathrm{sec}$

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Q. 45 Which circuit parameter is predominant in the overhead lines?

Ans

- 1. Inductance
$X$ 2. Capacitance
X 3. Resistance
X 4. Luminescence
Q. 46 The amount of negative feedback applied to an amplifier reduces its gain by a factor of 10 . Then the bandwidth:

Ans . increases by a factor of 10
$X$ 2. decreases by a factor of 20
$X$ 3. decreases by a factor of 10
$X$ 4. remains the same
Q. 47 Identify the number of prime implicants and essential prime implicants for the function
$\mathrm{f}(\mathrm{A}, \mathrm{B}, \mathrm{C}, \mathrm{D})=\sum \mathrm{m}(0,1,4,6,7,8,10,14,15)$
(where ' m ' represents minterms)
Ans
7,2
X2.6,2
X 3.7,1
X4.6,1
Q.48 A string insulator has 4 units. The voltage across the bottom most unit is $33.33 \%$ of the total voltage. Find the string efficiency.

Ans
X $1.25 \%$
X 2. $66.67 \%$
X $3.33 .33 \%$

- $4.75 \%$


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Q. 49 Assume that the source in the circuit shown here is delivering maximum power to the load resistor. What is the total power loss?


Ans
X 1.5 W
2. 2.5 W

X 3. 20 W
$\times 4.10 \mathrm{~W}$
Q. 50 The figure shown here is a branch of an electric circuit where current is flowing from A to B . Find the value of voltage
$\left(\mathrm{V}_{\mathrm{A}}-\mathrm{V}_{\mathrm{B}}\right)$.

Ans
X1. 5 V
$X$
2. 30 V
$X$
3. 20 V
-4. 10 V
Q. 51 The currents in a 3- $\Phi$ unbalanced system are: $I_{R}=(12+j 6) A ; I_{Y}=(12-j 12) A ; I_{B}=(-15+j 10)$ A. Calculate positive sequence component of the R -phase current by considering RYB as phase sequence.
Ans
X 1. $(-1.85-\mathrm{j} 5.47) \mathrm{A}$
2. $(10.85+\mathrm{j} 10.13) \mathrm{A}$

X 3. $(3+\mathrm{j} 5.47) \mathrm{A}$
X $4 .(3+\mathrm{j} 1.33) \mathrm{A}$
Q. 52

The bus admittance matrix of a power system is given by
$\left[\begin{array}{ccc}-j 50 & \text { j10 } & \text { j5 } \\ \text { j10 } & -j 30 & \text { j10 } \\ j 5 & \text { j10 } & -j 25\end{array}\right]$

The impedance of line between bus 2 and 3 will be equal to:
Ans
X $1 .-\mathrm{j} 0.5$
2. j 0.1

X 3. j0.2
X 4. -j0.2

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Q. 53 Find the value of Norton resistance at the terminals a-b for the circuit shown here.
(where $\mathrm{V}=10 \mathrm{~V}, \mathrm{I}=5 \mathrm{~A}, \mathrm{R}_{1}=9 \Omega, \mathrm{R}_{2}=18 \Omega, \mathrm{R}_{3}=4 \Omega$ )


Ans
Х1. $50 \Omega$
Х2. $25 \Omega$3. $10 \Omega$
<4. $20 \Omega$
Q. 54 Calculate the time constant for the RC circuit shown here.


Ans
$X 1.25 \mathrm{~ms}$
X2. 20 ms3. 12 ms4. 50 ms
Q. 55 What is the magnetic field produced due to an infinite linear current carrying conductor?

Ans
$X 1 \cdot H=\mu \mathrm{I} / 2 \pi \mathrm{r} \cdot \mathrm{A} \cdot \mathrm{m}$

- 2. $\mathrm{H}=\mathrm{I} / 2 \pi \mathrm{r} \mathrm{A} / \mathrm{m}$

X 3. $\mathrm{H}=\mu \mathrm{I} / 2 \mathrm{r} \mathrm{A} / \mathrm{m}$
X 4. $\mathrm{H}=\mathrm{I} / \mathrm{r} \mathrm{A} / \mathrm{m}$

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Q. 56 Find the value of the current flowing in $2 \Omega$ resistor?


Ans
X1.6A
$\checkmark$
2. 4 A
$\times 3.10 \mathrm{~A}$
$\times 4.15 \mathrm{~A}$
Q. 57 A dc shunt generator is delivering 20 kW at a terminal voltage of 200 V to a resistive load. The armature and shunt resistances are $0.5 \Omega$ and $100 \Omega$, respectively. Calculate the induced emf in the armature.
(neglect brush voltage drop)
Ans

1. 251 V

X 2. 292 V
X 3. 202 V
X4.351 V
Q. 58 In a negative feedback RC coupled amplifier, when the bypass capacitor is removed it acts as $\qquad$ topology.
Ans $\quad$ 1. series-shunt

- 2. series-series
$X$ 3. shunt-series
$X$ 4. shunt-shunt
Q. 59 Select the correct option:
[ $\xi$ is the damping factor of second order system]
Ans $\quad X 1 . \xi=1$; undershoot system
$X 2 . \xi=-2$; overshoot system
$X$ 3. $\xi=-1$; critical damped system
- 4. $\xi=0.5$; undershoot system


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Q. 60 For a 3- $\Phi, 50 \mathrm{HZ}$ supply, calculate the ratio of output voltage ripple-frequency to the supply-voltage frequency of 6 pulse diode bridge rectifier.

Ans
$X 1.3$
$\times 2.12$
$\times 3.2$
4. 6
Q. 61 The Lissajous pattern observed in a CRO is shown here. What is the frequency ratio of the vertical signal to the horizontal signal?


Ans
X $1.3: 2$
$X$
2. $2: 5$

- 3 . 4 :

X4.5:2
Q. 62 The transfer function of a system $H(s)$ is given by $H(s)=\frac{1}{s^{2}(s-2)}$. The impulse response of system is:
(* denotes convolution and $u(t)$ is unit step function)
Ans

1. $\left(t^{2} * e^{-2 t}\right) u(t)$

- 2. $\left(t * e^{2 t}\right) u(t)$3. $\left(t^{2} e^{-2 t}\right) u(t)$4. $\left(t e^{-2 t}\right) u(t)$
Q. 63 In a dc generator, the process of reversal of current in an armature coil as it crosses magnetic neutral axis is called:

Ans

1. commutation
$X$ 2. demagnetisation
$X$ 3. armature reaction
$X$ 4. cross magnetisation

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Q. 64 Mention the power factor of 1- $\Phi$ full bridge diode rectifier supplying high inductive load.

Ans
X 1.1 .5
2. Less than 1

X 3.1
4. Greater than 2
Q. 65 A $200 / 2000 \mathrm{~V}, 1-\Phi, 50 \mathrm{~Hz}$ transformer has primary and secondary resistance of $5 \Omega$ and $20 \Omega$, respectively. Find the value of equivalent resistance of the transformer referred to the primary side.

Ans

1. $20 \Omega$
2. $10 \Omega$

- $3.2 \Omega$

X $4.12 .4 \Omega$
Q. 66 The incremental fuel cost for two generating units are given by
$\mathrm{IC}_{1}=10+0.2 \mathrm{PG}_{1}$
$\mathrm{IC}_{2}=16+0.2 \mathrm{PG}_{2}$, where $\mathrm{PG}_{1}$ and $\mathrm{PG}_{2}$ are real power generated by the units. Find the economic allocation for a total
load of 170 MW .
(neglect transmission line loss)
Ans
⒈ $\mathrm{PG}_{1}=60 \mathrm{MW}, \mathrm{PG}_{2}=110 \mathrm{MW}$
X2. $\mathrm{PG}_{1}=80 \mathrm{MW}, \mathrm{PG}_{2}=90 \mathrm{MW}$
, 3. $\mathrm{PG}_{1}=100 \mathrm{MW}, \mathrm{PG}_{2}=70 \mathrm{NW}$
X4. $\mathrm{PG}_{1}=120 \mathrm{MW}, \mathrm{PG}_{2}=50 \mathrm{MW}$

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Q. 67 The Fourier transform of $\mathrm{x}(\mathrm{t})=t e^{-|t|}$
(where ' $t$ ' indicates continuous time domain)
Ans
$X$ 1. $X(\omega)=\frac{4}{\left(1+\omega^{2}\right)^{2}}$
2. $X(\omega)=\frac{-j 4 \omega}{\left(1+\omega^{2}\right)^{2}}$
‥ $X(\omega)=\frac{-j 4}{\left(1+\omega^{2}\right)^{2}}$
X 4. $X(\omega)=\frac{-4}{\left(1+\omega^{2}\right)^{2}}$
Q. 68 A 3- $\Phi, 6$ pulse diode bridge rectifier is supplied by $(100 * \pi) / \sqrt{6} V\left(\frac{r m s}{\text { phase }}\right), 50 \mathrm{~Hz}$. Find the average output voltage.

Ans
-1. 300 V
$\times 2.900 \mathrm{~V}$
X 3.100 V
X4. 500 V the open-loop and closed-loop configurations of the system is
Ans
X 1. unstable and stable
2. unstable and unstable
( 3. stable and unstable
4. stable and stable

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Q. 70 In the circuit shown here, find the value of $R_{x}$ at which the ac bridge is balanced.


Ans
Х1. $100 \Omega$
Х2. $200 \Omega$

- 3. $350 \Omega$

X $4.250 \Omega$
Q. 71 Find the number of $2 \times 1$ MUX (multiplexers) required to implement $16 \times 1$ MUX.

Ans
-1. 15
$\times 2.20$
$\times 3.5$
$\times 4.9$
Q. 72 Determine the minimised expression of Boolean function.
$F=\bar{X} \bar{Z}+\bar{Y} \bar{Z}+Y \bar{Z}+X Y Z$
Ans
$X 1 \cdot \overline{X Y}+Z$

- 2. $\bar{Z}+X Y$
$X$ 3. $\bar{X} Y+Z$
$X 4 . \mathrm{XYZ}$


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Q. 73 In the circuit shown here, find the value of $R$ such that $V_{2}=0.5 \mathrm{~V}_{3}-2 \mathrm{~V}_{1}$


Ans
$X 1.75 \mathrm{k} \Omega$
X 2. $25 \mathrm{k} \Omega$
3. $50 \mathrm{k} \Omega$

X $4.100 \mathrm{k} \Omega$

$\mathrm{G}(\mathrm{s})=\frac{5}{s(s+5)(s+15)}$
Ans
X 1. $20 \log _{10} 500 \mathrm{~dB}$
2. $20 \log _{10} 300 \mathrm{~dB}$

X 3. $20 \log _{10} 50 \mathrm{~dB}$
X4. $20 \log _{10} 100 \mathrm{~dB}$
Q. 75 Identify the output voltage waveform $\left(\mathrm{V}_{0}\right)$ of the clipper circuit shown in the figure here, where $\mathrm{V}_{\mathrm{i}}$ is sinusoidal input to
the circuit.


Ans

< 2

$\times 3$.

$\checkmark 4$


Section : General Awareness
Q. 1 Who has hit the most sixes during the entire tournament, making a record total of 36 , In the ICC Cricket World Cup 2015?

Ans
X

1. Ricky Ponting2. Abraham Benjamin (AB) de Villiers

X
3. Sachin Tendulkar
4. Kumar Sangakkara
Q. 2 Hyperinflation is when prices skyrocket more than $\qquad$ a month.
Ans

- $1.50 \%$
$x$

2. $10 \%$
$X$
3. $30 \%$
$x$
4. $20 \%$
Q. 3 पृथ्वी के ऊपरी क्रोड और निचले क्रोड के बीच के अनिरंतरता (डिस्कंटीन्यूटी) को $\qquad$ कहा जाता है।

Ans

1. कॉनराड अनिरंतरता (डिस्कंटीन्यूटी)
2. लेहमन अनिरंतरता (डिस्कंटीन्यूटी)
3. रेपेट्टी अनिरंतरता (डिस्कंटीन्यूटी)
$\times$
4. मोहो अनिरंतरता (डिस्कंटीन्यूटी)
Q. 4 RTI अधिनियम आपको $\qquad$ दिनों के भीतर सूचना के माध्यम से उत्तर प्राप्त करने का अधिकार देता है।
Ans
$X$ 1. 40
$X$
5. 15

- 3.304. 60
Q. 5 $\qquad$ is the frozen water part of the Earth water system.

Ans
入 1. Mesosphere
< 2. Troposphere3. Cryosphere
< 4. Lithosphere
Q. 6 Which state government has unveiled the world's 2nd tallest statue of Vallabhbhai Patel?

Ans1. Madhya Pradesh2. Gujarat
3. Rajasthan4. Maharashtra

## Join Telegram More Update

Q. 7 भारतीय प्रधान मंत्री ने 15 अगस्त, 2019 को $\qquad$ के केंद्रीय द्वार पर देश का झंडा फहराया।
Ans

1. ताजमहल
2. इंडिया गेट
3. लाल क़िला
$\times$
4. आगरा का किला
Q. 8 Nearly $84 \%$ of the earth's volume and $67 \%$ of the earth's mass is occupied by the

Ans

$X$
2. core

X
3. crust
4. hydrosphere
Q. 9 सुभाष चंद्र बोस, $\qquad$ की मदद से, ब्रिटिश सेनाओं से लड़ने से पहले और न केवल अंडमान और निकोबार द्वीप समूह को अंग्रेजों से मुक्त कराया बल्कि भारत की उत्तर-पूर्वी सीमा में भी प्रवेश किया।

Ans

1. दक्षिण अफ्रीका
$\$$
2. संयुक्त राज्य
$\checkmark$
3. जापान4. चीन
Q. 10 $\qquad$ उत्तर पूर्व भारत में स्थित असम का एक प्रसिद्ध नृत्य है जिसका अर्थ है बॉडी ऑफ़ डांस।
Ans
4. मोहिनीअट्टम
5. कूचिपूड़ी

X
3. छाऊ
4. सत्रीया
Q. 11 कुतुब मीनार स्थल दिल्ली में मामलुक राजवंश के संस्थापक $\qquad$ द्वारा शुरू किया गया था।

Ans

1. मुहम्मद बिन तुग़लक़
2. कुतुब उद-दीन ऐबक3. इब्राहिम लोदी
3. फ़िरोज़ शाह तुग़लक़
Q. 1227 मार्च, 2019 को प्रधान मंत्री नरेंद्र मोदी ने घोषणा की कि भारत ने खुद को दुनिया के $\qquad$ सबसे बड़े अंतरिक्ष सुपर पावर के रूप में स्थापित किया है।
Ans
4. सातवाँ
$\checkmark$
5. चौथा
$X$
6. तीसरा4. दूसरा
Q. 13 भारतीय संविधान का कौन सा हिस्सा हमारे राज्य के नीति निर्देशक तत्व से संबंधित है?

Ans

- 1. भाग IV

2. भाग III
3. भाग VI
$x$
4. भाग $V$
Q. 14 Indian economy is considered a $\qquad$ as it has well defined areas for functioning of public and private sectors and economic planning.
Ans
X 1. Traditional economy
X 2. Market economy
$\checkmark$
5. Mixed economy4. Planned economy
Q. 15 Justice $\qquad$ was on November 18, 2019, sworn in as the 47th Chief Justice of India.
Ans1. Dipak Misra
6. T. S. Thakur
7. Sharad Arvind Bobde4. Ranjan Gogoi

Section : Quantitative Aptitude

## Join Telegram More Update Note: All previous year Exam paper provides

Q. 1 Select the quadratic equation whose sum of roots is 4 and product of roots is 1 .

Ans
X 1. $x^{2}-4 x-1=0$

- 2. $x^{2}-4 x+1=0$

ㄱ. $x^{2}-5 x-1=0$
Х 4. $x^{2}+4 x+1=0$
Q. 2 If the ratio of Ram and Sham's marks is $2: 5$ and Sham and Ganesh's marks is $3: 7$, then what is the ratio of Ram and Ganesh's marks?

Ans
X $1.15: 35$2. $6: 35$
$X$
3. $6: 5$
4. $6: 15$
Q. 3 एक कंटेनर पानी से भरा हुआ है। इसमें से 36 लीटर पानी निकाल कर इसे दूध से भर दिया जाता है। फिर से 36 लीटर मिश्रण निकालकर कंटेनर को फिर से दूध से भर दिया जाता है। यदि पानी और दूध का अनुपात $36: 13$ है, तो कंटेनर में मौजूद द्रव की मात्रा ज्ञात कीजिए।

Ans

1. 250 लीटर

X 2. 352 लीटर
X 3. 253 लीटर
4. 252 लीटर
Q. 4 The sum of series $0.7+0.77+0.777+$ $\qquad$ up to 25 terms is:

Ans
X 1. $\frac{7}{81}\left[220+\frac{1}{10^{25}}\right]$
X2. $\frac{7}{81}\left[225+\frac{1}{10^{25}}\right]$
ง. $\frac{7}{81}\left[224+\frac{1}{10^{25}}\right]$
X4. $\frac{7}{81}\left[223+\frac{1}{10^{25}}\right]$
Q. 5 Arun travels a distance of 15 km in 1 hour. In how many hours will he travel a distance of 165 km ?

Ans
$X 1.14$ hours
X 2. 12 hours

- 3. 11 hours

X4. 13 hours
Q. 6 What is the compound interest on ₹ 1,400 at $20 \%$ per annum in 2 years?

Ans
$X 1$. ₹ 613
$X$
2. ₹ 614
$X$
3. ₹ 6154. ₹ 616
Q. 7 किसी दूध विक्रेता के पास तीन प्रकार के दूध हैं, जिनकी मात्राएं क्रमशः 276,322 और 414 लीटर हैं। विक्रेता उन्हें बिना आपस में मिलाए समान धारिता वाले कंटेनरों की न्यूनतम संख्या में रखना चाहता है। प्रत्येक कंटेनर की धारिता और आवश्यक कंटेनरों की संख्या ज्ञात कीजिए।
Ans

1. 46 लीटर और 22 कंटेनर

X ${ }^{2} 276$ लीटर और 22 कंटेनर
X ${ }^{3} .322$ लीटर और 46 कंटेनर
X4. 46 लीटर और 23 कंटेनर
Q. 8 Arun buys a scooter at $₹ 14,000$ and sells it at a loss of $25 \%$. What is the selling price of the scooter?

Ans
X 1. ₹10,520
X 2. ₹ 10,530

- 3. ₹ 10,500

X4. ₹ 10,510

## Join Telegram More Update Note: All previous year Exam paper provides

Q. 9 A biquadratic equation has how many possible roots?

Ans
-1. 4
<2. 2
$\times 3.5$
$\times 4.3$
Q. 10 If the average of the numbers $10,15, x, 25,35$ and 45 is 25 , then what will be the value of $x$ ?

Ans
X 1.23
$\times 2.21$
$\checkmark$
3. 20

X4.25
Q.11 The HCF of decimal numbers $1.5,2.05$ and 3.5 is:

Ans
X 1.1 .5
$\times 2.2 .5$
$\times 3.2 .05$

- 4. 0.05
Q. 12 The value of $\sin 75^{\circ}$ is:

Ans

1. $\frac{\sqrt{2}(\sqrt{3}+1)}{4}$

X2. $\frac{\sqrt{2}(\sqrt{3}+2)}{4}$$\frac{\sqrt{2}(\sqrt{3}+3)}{4}$
$x$
4. $\frac{\sqrt{2}(\sqrt{3}+4)}{4}$
Q. 13 एक मंदिर के शीर्ष पर एक ध्वज लगाया गया है। मंदिर के आधार से 15 m की दूरी पर स्थिति एक बिंदु से ध्वज के शीर्ष और मंदिर के शीर्ष के उन्नयन कोण क्रमशः $60^{\circ}$ और $45^{\circ}$ हैं। ध्वजदंड की लंबाई ज्ञात कीजिए।

Ans
X1.17 $(\sqrt{3}-1) \mathrm{m}$
X2. $14(\sqrt{3}-1) \mathrm{m}$
3. $15(\sqrt{3}-1) \mathrm{m}$

X4. $16(\sqrt{3}-1) \mathrm{m}$
Q. 14 राजू और रूपेंद्र एक साथ मिलकर किसी कार्य को 9 दिनों में पूरा कर सकते हैं। राजू, रूपेंद्र से $\frac{9}{5}$ गुना कुशल है। राजू अकेले 1 दिन में उस कार्य के कितने हिस्से को पूरा कर सकता है?

Ans
X1. $\frac{5}{126}$2. $\frac{9}{126}$3. $\frac{11}{126}$4. $\frac{7}{126}$
Q. 15 एक आदमी एक मोबाइल बेचता है। यदि मोबाइल को ₹ 22,000 में बेचने पर हुआ प्रतिशत लाभ, उसी मोबाइल को ₹ 18,000 में बेचने पर हुई प्रतिशत हानि के बराबर है, $35 \%$ लाभ प्राप्त करने के लिए मोबाइल का विक्रय मूल्य ज्ञात कीजिए।
Ans
$X 1$. ₹ 25,000
X2. ₹ 23,0003. ₹ 17,000
4. ₹ 27,000

Section: General Intelligence and Reasoning
Q. 1 एक श्रृंखला दी गई है जिसमें एक पद लुप्त है। दिए गए विकल्पों में से सही विकल्प का चयन करें जो श्रृंखला को पूरा करेगा।
e2, j6, 012, t20, $\qquad$
Ans

- $1 . \mathrm{y} 30$

X2. 230
入3.z25
$>$
4. y 25
Q. 2 उस विकल्प का चयन करें जो उसी आधार पर तीसरे पद से संबंधित है जैसे दूसरा पद पहले पद से संबंधित है। आग : धुआं :: ? ?

Ans
X1. छत:घर
2. बंदूक : गोली
3. दीवारे:स्तंभ

X
4. रसोई : बगीचा
Q. 3 दिए गए शब्दों में निम्नलिखित में से कौन सही संबंध दर्शाता है? धातु, एल्युमिनियम, सोडियम

Ans

$\times 2$

$\times$.

$X 4$

Q. 4 A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.
$15,16,20,21,26$, ?
Ans
X 1.31
$X$ 2. 283. 27

X4.30
Q. 5 The statements below are followed by two conclusions labeled 1 and 2. Assuming that the information in the statement is true, even if it appears to be at variance with generally established facts, decide which conclusion(s) logically and definitely follow(s) from the information given in the statement.
Give answer:
(A) If only conclusion I follows
(B) If only conclusion II follows
(C) If either I or II follows
(D) If both I and II follow.

STATEMENT : Aerated drinks are harmful for health .
CONCLUSION 1: Leads to increase in amount of fat CONCLUSION 2: Leads to insulin resistance.
Ans
X1.A
$-2$ 2. D
\$3.c
>4.
Q. 6 A series is given with one term missing. Select the correct alternative from the given ones that will complete the series. Z 100, X81, T64, ?
Ans
<1.P50

2. N50
3. P49
4. N49
Q. 7 दिए गए क्रम में: 6\&pQ@231qsY\# क्रमशः अनुक्रम के उल्टे क्रम में \#@ की स्थिति का पता लगाएं।
Ans
>1.1,52. 11,8
3. 1,8

7
4. 10,12
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

Q. 9 नीचे दिए गए प्रश्न में, एक कथन दिया गया है जिसके बाद दो निष्कर्ष । और II दिए गए हैं। आपको कथन में दिए गए सब कुछ को सत्य मान लेना है, फिर दो निष्कर्षों पर एक साथ विचार करें और निर्णय लें कि कथन में दी गई जानकारी में से कौन सा तार्किक रूप से एक उचित संदेह से परे है।
उत्तर दीजिए:
(A) यदि केवल निष्कर्ष । का अनुसरण करता है
(B) यदि केवल निष्कर्ष II का अनुसरण करता है
(C) यदि I या II अनुसरण करते है
(D) यदि I और II दोनों अनुसरण करते है

कथन: सूर्य में हिलियम की भारी मात्रा होती है। सूर्य एक विशिष्ट मध्य आकार का तारा है।
निष्कर्ष 1: अधिकांश मध्य आकार के तारों में कुछ हिलियम होगा।
निष्कर्ष 2: बड़े तारों में छोटे तारों की तुलना में अधिक हिलियम होता है।
Ans

- $1 . \mathrm{A}$
>2. в
<3.
$>4$ 4. C
Q. 10 Find the missing number in the following number series.



Ans
$x$
2.16

入 3.9
$\$$
4. 17
Q. 11 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

- 1. NILE
$X$

2. K2
<3.ALPS4. MOUNT EVEREST
Q. 12 The letters of the following word, when arranged, form an appropriate word.

TVLIEON
What is the position of alphabet ' T ' in the word formed?
Ans

- 1.7
> 2.2
X 3.1
X

4. 6
Q. 13 In the given figure, A represents people liking APPLES, B represents people liking BANANAS, C represents people liking CHIKOO.
How many people like ONLY APPLES?


Ans
$\times 1.6$
$\times 2.3$
<3.4

- 4.10
Q. 14 Find the missing number in the following number series.

| 30 | 15 | 4 |
| :---: | :---: | :---: |
| 60 | 12 | 10 |
| 96 | 16 | $?$ |

Ans
$\times 1.16$
$\times 2.14$
$X$
3.184.12
Q. 15 Arrange the following in a meaningful sequence:

1) Pond
2) Lake
3) Sea
4) Ocean

Ans1. 2314
2. 1432
$X$
3. 1234
4. 4123

[^0]
## Comprehension:

A passage is given with five questions following it. Read the passage carefully and select the best answer to the given question out of the given four options.

It is well known that Technology adds a lot of efficiency when it comes to today's lifestyle, especially with regards to healthcare from what we know and hear about all the time.

The adoption of electronic health records helps eliminate a lot of repetitive testing that can add to savings and help with deficit reduction. The electronic record also makes easier for disease and care management for individuals.

The integration of information into one source can improve efficiency and help eliminate additional steps of obtaining patient information from multiple sources. Providers find it easier to perform tasks such as processing claims and billing. A provider can access a patient record with speed and ease. With all this information available a provider can also make a quick informed decision that ultimately can affect a patient's outcome of care management that could have a long term effect to one's health in the future.

With patient information being available in a centralized location the use of Decision support systems come into play by using this combined source to aid in care management, medication management and also drug interactions for a patient. There is a reduced likely hood of errors and this also eliminates duplication

Even though a physician can potentially reduce his overhead through say the use of an electronic scanner instead of paper claims, and reduce the number of office staff employed at the practice. There could also be some short term unforeseen negative effects as a result of this. What happens to all the people who normally manage these functions? This is an indirect negative effect of technology in the short term, where some of these jobs will slowly be replaced by a few highly skilled specialized individuals or by computer systems.

So despite there being a positive effect to reduce healthcare costs and improve the overall strain healthcare has on the national deficit, the short term effects of job reduction from this is also impending.

SubQuestion No: 1
Q. 1 Select a suitable title to the passage from among the given options.

1 1. The free availability of patient information.
2. Strain of healthcare on the national deficit.

Х 3. Ways to increase efficiency and manage costs.

* 4. The role of technology in our healthcare system


## Comprehension:

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SubQuestion No: 2
Q. 2 The tone/attitude of the author towards the passage can be best described as:

Ans
1 1. Narrative

- 2. Direct
- 3. Belittling
(4. Cynical


## Comprehension:

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So despite there being a positive effect to reduce healthcare costs and improve the overall strain healthcare has on the national deficit, the short term effects of job reduction from this is also impending.

SubQuestion No: 3
Q. 3 The last paragraph mentions "the short term effects of job reduction from this is also impending". Identify the most appropriate replacement of the word 'impending' as used in the context of the passage.
Ans

- 1. approaching

X 2. unlikely
<3. distant4. unreachable

## Comprehension:

A passage is given with five questions following it. Read the passage carefully and select the best answer to the given question out of the given four options.

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The adoption of electronic health records helps eliminate a lot of repetitive testing that can add to savings and help with deficit reduction. The electronic record also makes easier for disease and care management for individuals.

The integration of information into one source can improve efficiency and help eliminate additional steps of obtaining patient information from multiple sources. Providers find it easier to perform tasks such as processing claims and billing. A provider can access a patient record with speed and ease. With all this information available a provider can also make a quick informed decision that ultimately can affect a patient's outcome of care management that could have a long term effect to one's health in the future.

With patient information being available in a centralized location the use of Decision support systems come into play by using this combined source to aid in care management, medication management and also drug interactions for a patient. There is a reduced likely hood of errors and this also eliminates duplication.

Even though a physician can potentially reduce his overhead through say the use of an electronic scanner instead of paper claims, and reduce the number of office staff employed at the practice. There could also be some short term unforeseen negative effects as a result of this. What happens to all the people who normally manage these functions? This is an indirect negative effect of technology in the short term, where some of these jobs will slowly be replaced by a few highly skilled specialized individuals or by computer systems.

So despite there being a positive effect to reduce healthcare costs and improve the overall strain healthcare has on the national deficit, the short term effects of job reduction from this is also impending.

SubQuestion No: 4
Q. 4 Which of the following options is definitely false as per the views expressed by the author?

Ans

1. The technological aid makes processing claims and billing easier.

Х 2. The adoption of electronic health records eliminate repetitive testing.
Х 3. The decision support systems come into play by using combined source to aid in care management, medication management and drug interactions for a patient.
4. The integration of patient information in to one source can lead to data misuse and issues of unauthorized data usage.

## Comprehension:

A passage is given with five questions following it. Read the passage carefully and select the best answer to the given question out of the given four options.

It is well known that Technology adds a lot of efficiency when it comes to today's lifestyle, especially with regards to healthcare from what we know and hear about all the time.

The adoption of electronic health records helps eliminate a lot of repetitive testing that can add to savings and help with deficit reduction. The electronic record also makes easier for disease and care management for individuals.

The integration of information into one source can improve efficiency and help eliminate additional steps of obtaining patient information from multiple sources. Providers find it easier to perform tasks such as processing claims and billing. A provider can access a patient record with speed and ease. With all this information available a provider can also make a quick informed decision that ultimately can affect a patient's outcome of care management that could have a long term effect to one's health in the future.

With patient information being available in a centralized location the use of Decision support systems come into play by using this combined source to aid in care management, medication management and also drug interactions for a patient. There is a reduced likely hood of errors and this also eliminates duplication.

Even though a physician can potentially reduce his overhead through say the use of an electronic scanner instead of paper claims, and reduce the number of office staff employed at the practice. There could also be some short term unforeseen negative effects as a result of this. What happens to all the people who normally manage these functions? This is an indirect negative effect of technology in the short term, where some of these jobs will slowly be replaced by a few highly skilled specialized individuals or by computer systems.

So despite there being a positive effect to reduce healthcare costs and improve the overall strain healthcare has on the national deficit, the short term effects of job reduction from this is also impending.

SubQuestion No: 5
Q. 5 What according to the passage is the indirect negative impact of technology in the long run?
(1. People's inherent unwillingness to put their trust in the medical fraternity.
2. Reduction in the overhead healthcare cost by reducing the number of office staff.

7
3. The government's increased interference in the pharmaceutical company's
administrative affairs.
4. The jobs being replaced by a few highly skilled individuals or by computer systems.
Q. 6 A sentence with an underlined word is given below. Select the most appropriate SYNONYM for the underlined word from the given options.

She was completely baffled by his strange behaviour.
Ans
< 1. Assured
2. Peacefur
(3. Convinced

- 4. Confused
Q. 7 Identify the correct statement from the options given.

Ans1. Rachel, who served as a model from Chad's sister, thought her interpretation of the role was the best.
2. Rachel, who served as a model for Chad's sister, thought her interpretation of the role was the best.
X
3. Rachel, who serves as a model for Chad's sister, thought her interpretation of the role was the best.

X 4. Rachel, who served as a model for Chad's sister, thought her interpretation of a role was the best.
Q. 8 A sentence has been given in Active/Passive voice. Out of the four alternatives suggested, select the one which best expresses the same sentence in Passive/Active voice.

Somebody has stolen the purse which I had bought recently.
Ans

1. I had bought a purse recently and it has been stolen.
$>$
2. My purse which had been bought recently by her has been stolen.3. My purse which I had bought recently has been stolen.
3. The purse which had been bought recently by me has been stolen.
Q. 9 Identify the segment in the sentence which contains the grammatical error from the given options. If there is no error, mark your answer as 'No error'.

He feels badly about the defeat
Ans
> 1. He feels
$v$
2. badly
$X$
3. about the defeat4. No error,
Q. 10 In the following sentence some parts in BOLD letters. Choose the better of the two alternatives for ever such part and then choose the best combination as your answer.

Her son doesn't (A)/ didn't (B) have the faintest idea what he will (A)/ will he (B) do after leaving(A)/ he had left(B) school.
Ans
>1. BBA2. AAA
$\$$
3. $A B B$4. BAB
Q. 11 Identify the segment in the sentence which contains the grammatical error from the given options. If there is no error, mark your answer as 'No error'.

The team played real good for the first five minutes
Ans
X 1. The team played

- 2. real good for the

3. first five minutes
<4. No error
Q. 12 A sentence has been given in Active/Passive voice. Out of the four alternatives suggested, select the one which best expresses the same sentence in Passive/Active voice.

His subject accused him of various atrocities.
Ans
Х 1. His subject accused that he had done various atrocities.

- 2. He was accused of various atrocities by his subject.3. It was accused by his subject that he had done various atrocities.4. His subject accused him of various atrocities.
Q. 13 Identify the segment in the sentence which contains the grammatical error from the given options.

The government's proposal has been set alarm bells ringing for people on low incomes.
Ans

1. ringing for people
2. on low incomes.

- 3. has been set alarm bells
(4. The government's proposal
Q. 14 Choose the most appropiate combination of preposition in the given sentences.

His friends condoled $\qquad$ him on his bereavement.
The approach to this pan of the book is similar $\qquad$ that to the other part,
He has reverted $\qquad$ his former job.
I am sick $\qquad$ entire episode.
Ans
\1. of, on, in, by

- 2. before, to, to, in

X 3. between, to, into, too
4. at, by, with, on
Q. 15 A sentence has been given in Active/Passive voice. Out of the four alternatives suggested, select the one which best expresses the same sentence in Passive/Active voice.

How much a month are you paid?
Ans

1. How much a month do you pay them?2. In a month how much do you pay?
2. How much a month do you pay?
3. How much a month do they pay you?
Q. 16 Choose the most appropiate combination of preposition in the given sentences.

Where have you been $\qquad$ ?
He lives $\qquad$ Delhi in India.
I would occupy myself with no more important business than $\qquad$ this. He has not been cured $\qquad$ his disease.
Ans
(1. with, before, at, in

X
2. with, between, no preposition, of3. no preposition, in, no preposition, of
4. no preposition, with, in, at
Q. 17 Identify the segment in the sentence which contains the grammatical error from the given options.

The customer insisted to speaking to the manager personally.
Ans

- 1. insisted to
(2. manager personally.

3. The customer
4. speaking to the
Q. 18 Identify the segment in the sentence which contains the grammatical error from the given options. If there is no error, mark your answer as 'No error'.

The programme which came on television these days in the evenings is very interesting.
Ans
(1. The programme which2. these days in the evenings is very interesting.
3. came on television
<4. No error
Q. 19 Select the most appropriate SYNONYM of the given word.

Guilty
Ans

1. Virtuous

X 2. Innocent
3. Unrepentant
4. Accountable
Q. 20 Choose the most appropiate combination of preposition in the given sentences.

My brother is deficient $\qquad$ mathematics.
We are expecting the reply $\qquad$ evening.
The final decision rests ${ }^{\text {the }}$

Ans

1. by, in with, on2. in, by, with, under

X
3. in, on, in, by
4. under, by, with, it
Q. 21 Select the most appropriate ANTONYM of the given word.

Dabbler
Ans
人 1. Loyal
2. Professional

7
3. Truthful
4. Talkative
Q. 22 Select the most appropriate SYNONYM of the given word.

Harsh
Ans 1. Soft-spoken
2. Whisper
$X$
3. Polite
4. Scold
Q. 23 Two sentences are given below. Choose the correct conjunction to join the given sentences.

Several members have not replied for over three years.
Their names have therefore been removed from the mailing list.
Ans
X1. But
7
2. Yet3. Else
4. And
Q. 24 In the following question, out of the four alternatives, select the alternative which is the best substitute of the phrase.

A funeral song or tune
Ans
<1. Elixir2. Hymn
3. Dirge4. Flux
Q. 25 In the following question a sentence is given in Direct/Indirect speech. Out of the four alternatives choose the one which best expresses the sentence in Indirect/Direct Speech.
"How dare you come in without permission?" she asked.
Ans

1. She said to him to dare to come in without permission.
$>$
2. She asked how he could dared to come in without permission.3. She asked him how he dared to cometin without permission4. She told him if he could dare to come in without permission.
Q. 26 Choose the most appropiate combination of preposition in the given sentences.

Roberta and the psychologist disagreed, however, when Roberta said that the semicolon
The best punctuation mark.
The director said that he $\qquad$ know what to make of Roberta's punctuation obsession.
Ans

1. is, didn't2. is, doesn't

7
3. was, didn't
< 4. were, don't
Q. 27 A sentence has been given in Active/Passive voice. Out of the four alternatives suggested, select the one which best expresses the same sentence in Passive/Active voice.

Someone saw him stealing.
Ans

1. He was seen stealing by someone
2. He is seen by someone stealing
3. He was seen by one when he is stealing.
$>$
4. He had been seen stealing.
Q. 28 In the following sentence some parts in BOLD letters. Choose the better of the two alternatives for ever such part and then choose the best combination as your answer.
"You don't have to be (nasty(A)/nastily(B))!" replied the duck.
The two creatures (swift(A)/swiftly(B)) circled each other, both looking for a (clear(A)/clearly(B)) advantage.

Ans

- 1. $A B A$2. $A B B$3. BBA
<4. AAB
Q. 29 Identify the segment in the sentence which contains the grammatical error from the given options. If there is no error, mark your answer as 'No error'.

You would not like others to blame you for the loss, wouldn't you?
Ans

1. You would not like others
2. to blame you for the loss,
$v$
3. wouldn't you?4. No error
Q. 30 Identify the segment in the sentence which contains the grammatical error from the given options. If there is no error, mark your answer as 'No error'.

You are very unreliable to be trusted
Ans

1. unreliable to

- 2. You are very
<3. No error
<4. be trusted
Q. 31 Choose the best alternative among the four given which can replace the part in bold to make the sentence grammatically correct.

Even though leprosy has been eliminated from India as a public health problem in 2005, a dreaded disease continue to raise its ugly head periodically.

Ans

1. a dreaded disease continues to raise its

7
2. an dreaded disease continues to raise its3. the dreaded disease continues to raise its
$>$
4. the dreaded disease continue rising its
Q. 32 Choose the best alternative among the four given which can replace the part in bold to make the sentence grammatically correct.

The way people consume entertainment is changing at a fast rate globally and nowhere so rapidly as we have seen in India.

Ans
(1. so rapidly as we may have seen in India
$X$
2. so rapidly as we might saw in India3. as rapidly as we have seen in India
< 4. more rapidly as we saw in India
Q. 33 In the following sentence some parts in BOLD letters. Choose the better of the two alternatives for ever such part and then choose the best combination as your answer.
(Since(A)/Because(B)) he is quite old it isn't (at all(A)/after all(B)) surprising (but (A)/that
(B)) he can't run as fast as you can.

Ans

- 1. AAB

X
2. $A B A$

7
3. $B A B$
<4.AAA
Q. 34 Select the most appropriate SYNONYM of the given word. Devious
Ans
X 1. Honest2. Distinguished
3. Two-faced
\$4. Supreme
Q. 35 A sentence has been given in Active/Passive voice. Out of the four alternatives suggested, select the one which best expresses the same sentence in Passive/Active voice.

Who knows you?
Ans

1. To whom are you known?
2. By whom are you known?
3. Whom are you known by?
4. Who are you known?
Q. 36 In the statement below, a part of the sentence is highlighted bold. Out of the four options which follow, choose the one which best replaces the highlighted bold part. If no replacement is required, select No improvement.

One of my drawbacks is that I did
not have tolerance of ambiguity.
Ans

- 1. do not have
(2. no improvement
(3. did not had
$X$

4. am not
Q. 37 Select the most appropriate meaning of the given idiom.

Bite the bullet
Ans

1. to amuse yourself by doing something unpleasant
2. to restrain yourself from doing something unpleasant
$>$
3. to dislike yourself for having done something unpleasant
4. to force yourself to do something unpleasant
Q. 38 A sentence with an underlined word is given below. Select the most appropriate ANTONYM for the underlined word from the given options.

If cancers are spotted early there's a high chance of survival.
Ans
(1. Living

X
2. Continuance
3. Extinction4. Advancement
Q. 39 In the following question, out of the four alternatives, select the alternative which is the best substitute of the phrase.

A disease that causes a large number of people to die
Ans

1. Pestilence
< 2. Bariatric
X 3. Congenital4. Sporadic
Q. 40 Choose the most appropiate combination of preposition in the given sentences.

The commentator seems to be enamoured $\qquad$ quotes from Shakespeare.
The poor man is beset $\qquad$ difficulties.
The weather was not very congenial $\qquad$ him. We should adapt $\qquad$ the changing times.
Ans

1. off, with, into, of
$-2$
2. of, with, to, to3. of, on, in, by
3. with, at, in, off
Q.41 Choose the most appropiate combination of preposition in the given sentences.

Narasimha Rao is distinguished in the cartoons $\qquad$ his pout.
Patanjali is an authority $\qquad$ Sanskrit grammar.
He is a descendant $\qquad$ the Mughal royalty.
The shopkeeper deals $\qquad$ cotton and cloth.

Ans

- 1. into, for, off, of

7 2. on, by of, in3. with, of, for, no preposition
4. by, on, of, in
Q. 42 Identify the segment in the sentence which contains the grammatical error from the given options. If there is no error, mark your answer as 'No error'.

The dead are peacefully sleeping in their graves
Ans

1. in their graves2. No error

K
3. The dead are
4. peacefully sleeping
Q. 43 Select the most appropriate SYNONYM of the given word. Bucolic
Ans

1. Conservative
v 2. Rural
X3. Urban
(4. Ancient
Q. 44 Select the most appropriate ANTONYM of the given word.

Smart
Ans

1. Ugly
< 2. Pretty
2. Handsome

入4. Beautiful
Q. 45 Choose the most appropiate combination of words for the given sentence.

The psychologist complained that quotation marks $\qquad$ him in and $\qquad$ him feel trapped.
Ans

1. hem, made
$\checkmark$
2. hemmed, made
( 3. hem, make
$>$
3. hemmed, make
Q. 46 In the following question a sentence is given in Direct/Indirect speech. Out of the four alternatives choose the one which best expresses the sentence in Indirect/Direct Speech.

He said, 'My God! I am ruined.'
Ans
X 1. He exclaimed that he was ruined.2. He exclaimed sadly that he ruined.
3. He exclaimed sadly that he had been ruined.
4. He exclaimed sadly that he was ruined.
Q. 47 Choose the best alternative among the four given which can replace the part in bold to make the sentence grammatically correct.

The Bishnoi community of Rajasthan and parts of Punjab believe that crop yield increase in fields where black buck had gazed.
Ans

1. crops yields decreases in fields where black buck was gazing

7
2. crop yields increases in fields where black buck had gazed.3. that crop yield increase in fields where black buck were gazing
4. crops yields increases in fields where black buck was gazing
Q. 48 Select the most appropriate meaning of the given idiom.

Beat a dead horse
Ans

1. A significant effort
>
2. A joint effort
$\checkmark$
3. A futile effort
4. A deliberate effort
Q. 49 In the following question a sentence is given in Direct/Indirect speech. Out of the four alternatives choose the one which best expresses the sentence in Indirect/Direct Speech.
"I wonder how the magician shows such wonderful magic!" said the boy.
Ans
< 1. The boy wondered how the magician would show such wonderful magic.
5. The boy wondered how such wonderful magic shown by the magician.
6. Thy boy wondered how the magician showed such wonderful magic4. The boy said how he wondered how the magician showed such wonderful magic.
Q. 50 A sentence with an underlined word is given below. Select the most appropriate ANTONYM for the underlined word from the given options.

Birds are abundant in the tall vegetation.
Ans
X1. Plentiful
$\$$
2. Copious
$\checkmark$
3. Scanty
(4. Ample
Q. 51 In the following question a sentence is given in Direct/Indirect speech. Out of the four alternatives choose the one which best expresses the sentence in Indirect/Direct Speech.

She asked him what was it that made him stronger and braver than other men.
Ans
X1. She asked, "What is it that made you stronger and braver than other men?"
2. She asked, "What made you stronger and braver than other men?"
3. She asked, "What is it that makes you stronger and braver than other men?"
4. She asked, "What was it that made you stronger and braver than other men?"
Q. 52 In the following sentence some parts in BOLD letters. Choose the better of the two alternatives for every such part and then choose the best combination as your answer.
"You are (extreme(A)/extremely(B)) territorial about these pipes," added the duck. The alligator retreated (fearful(A)/fearfully(B)) as the duck quacked (sharp(A)/sharply(B)).
Ans
<1. BBA
2. BBB3. $A A A$
<4. AAB
Q. 53 Select the most appropriate ANTONYM of the given word.

Dubious
Ans
<1. Intelligent
< 2. Sharp

- 3. Certain
<4. Drastic
Q. 54 In the statement given below, a part of the sentence is highlighted bold. Out of the four options which follow choose the one which best replaces the highlighted phrase.

The use of radar as well as two-way radio paging make it possible for state police to intercept most speeders.
Ans

- 1. makes it possible

2. allows the possibility

X 3. make possible4. makes possible

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Q. 55 In the following question a sentence is given in Direct/Indirect speech. Out of the four alternatives choose the one which best expresses the sentence in Indirect/Direct Speech.

Filled with shame, she replied that she could not help snoring and hoped that her son would understand.

Ans
X 1. "I am sorry but I can't" help snoring, son," she said. "I hope you understand.

- 2. "I can't help snoring, son" she said, filled with shame. "I hope you will understand."

Х 3. "Son, I can't help it, but I hope you understand that I snore," she said.
Х 4. "I hope you understand that I can't help snoring," she told her son.
Q. 56 Select the most appropriate meaning of the given idiom.

Red-handed
Ans

- 1. To catch someone doing something illegal

2. To try to arrest someone without any evidence3. To discover a murderer using the clues4. To catch a thief who steals red paints
Q. 57 Identify the segment in the sentence which contains the grammatical error from the given options.

She wept for joy when she was told that her husband is still alive.
Ans

1. when she was told
2. She wept for joy

* 3. is still alive.4. that her husband
Q. 58 Select the idiom that can best subsitute the bracketed word in the sentence given below.

He (confessed) his guilt in front of god.
Ans

1. to move heaven and earth
2. Nip in the bud
$\$$
3. Cry for the moon
$\checkmark 4$
4. make a clean breast of it

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Q. 59 Identify the segment in the sentence which contains the grammatical error from the given options. If there is no error, mark your answer as 'No error'.

He was too exhausted when he got home
Ans
X 1. he got home
2. exhausted when
3. No error
4. He was too
Q. 60 Select the most appropriate meaning of the idiom Go against the grain.
Ans

1. Something that we can accept with difficulty
2. Something that is ugly and unpopular3. Something in conflict with one's value system4. Something done deliberately

[^0]:    Section : General English

