UGC NET 2022 ELECTRONIC SCIENCE

Topic:- 088_PARTA_S2

1) In a MOSFET, the transconductance in linear region can be expressed as :

(1) $\frac{\mu_0 C_{ox} W}{L}(V_G - V_T)$

(2) $\frac{\mu_0 C_{ox} W}{2L}(V_G - V_T)V_D$

(3) $\frac{\mu_0 C_{ox} W}{L}V_D$

(4) $\frac{\mu_0 C_{ox} L}{W}(V_G - V_T)$

[Question ID = 3241][Question Description = 101_88_ETS_SEP22_S1_Q01]
1. 1 [Option ID = 12961]
2. 2 [Option ID = 12962]
3. 3 [Option ID = 12963]
4. 4 [Option ID = 12964]

2) In a junction field effect transistor the depletion layer width at a distance x from the source is :

(1) $[2\epsilon_s [V(x) + V_G + V_{bi}]/qN_D]^{1/2}$

(2) $\left[\frac{V(x) + V_G + V_{bi}}{2\epsilon_s qN_D}\right]^{1/2}$
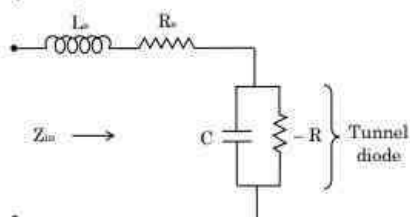
(3) $\frac{qN_D}{2\epsilon_s}(V(x) + V_{bi})^{1/2}$

(4) $[2\epsilon_s [V(x) + V_{bi}]/qN_D]^{1/2}$

[Question ID = 3242][Question Description = 102_88_ETS_SEP22_S1_Q02]
1. 1 [Option ID = 12965]
2. 2 [Option ID = 12966]
3. 3 [Option ID = 12967]
4. 4 [Option ID = 12968]

3) The equivalent circuit of Tunnel diode is shown in the following Figure. The resistive cut off frequency is given by :

(1) $\frac{1}{2\pi}\sqrt{\frac{R}{R_s} - 1}$

(2) $\frac{1}{2\pi RC}\sqrt{\frac{R}{R_s} - 1}$
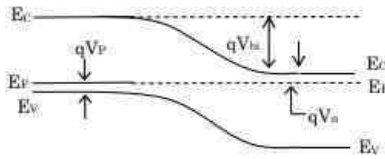
(3) $\frac{1}{2\pi RC}\sqrt{\frac{R_s}{R}}$

(4) $\frac{1}{2\pi RC}\sqrt{\frac{R_s}{R} - 1}$

[Question ID = 3243][Question Description = 103_88_ETS_SEP22_S1_Q03]
1. 1 [Option ID = 12969]
2. 2 [Option ID = 12970]
3. 3 [Option ID = 12971]

4. 4 [Option ID = 12972]

4) An abrupt $p-n$ junction in thermal equilibrium is shown in Fig. The built in potential V_{bi} is given as :

(1) $qV_n + qV_p$

(2) $Eg - (qV_n + qV_p)$

(3) $Eg + (qV_n + qV_p)$

(4) $Eg - (qV_n - qV_p)$

[Question ID = 3244][Question Description = 104_88_ETS_SEP22_S1_Q04]
1. 1 [Option ID = 12973]
2. 2 [Option ID = 12974]
3. 3 [Option ID = 12975]
4. 4 [Option ID = 12976]

5) For a thermally grown silicon dioxide layer, in a MOSFET, the leakage current between the gate and channel is :

(1) 0

(2) Very small

(3) Large

(4) Very large

[Question ID = 3245][Question Description = 105_88_ETS_SEP22_S1_Q05]
1. 1 [Option ID = 12977]
2. 2 [Option ID = 12978]
3. 3 [Option ID = 12979]
4. 4 [Option ID = 12980]

6) If N is the doping level of substrate and V is the effective voltage across the junction in a MOSFET, then the depletion region width for the junction is given by :

(1) $\sqrt{\dfrac{2\varepsilon_{si}\varepsilon_0 V}{qN}}$

(2) $\sqrt{\dfrac{2\varepsilon_{si}\varepsilon_0 qV}{N}}$

(3) $\sqrt{\dfrac{2\varepsilon_{si} N}{qV}}$

(4) $\dfrac{2\varepsilon_{si}\varepsilon_0 V}{qN}$

[Question ID = 3246][Question Description = 106_88_ETS_SEP22_S1_Q06]
1. 1 [Option ID = 12981]
2. 2 [Option ID = 12982]
3. 3 [Option ID = 12983]
4. 4 [Option ID = 12984]

7) For n MOSFET fabrication the substrate required is :

(1) n - type substrate

(2) p -type substrate

(3) Insulator type substrate

(4) Degenerate type silicon

[Question ID = 3247][Question Description = 107_88_ETS_SEP22_S1_Q07]
1. 1 [Option ID = 12985]
2. 2 [Option ID = 12986]
3. 3 [Option ID = 12987]

4. 4 [Option ID = 12988]

8) The current voltage relationship for the MOS transistor in a saturation region is expressed as :

   (1) $\frac{\mu_n C_{ox} W}{2L} (V_{gs} - V_t)^2$

   (2) $\frac{\mu_n C_{ox} W}{L} (V_{gs} - V_t)^2$

   (3) $\frac{\mu_n C_{ox} L}{2W} (V_{gs} - V_t)^2$

   (4) $\frac{C_{ox} \mu_n}{\mu_n W L} (V_{gs} - V_t)^2$

[Question ID = 3248][Question Description = 108_88_ETS_SEP22_S1_Q08]
1. 1 [Option ID = 12989]
2. 2 [Option ID = 12990]
3. 3 [Option ID = 12991]
4. 4 [Option ID = 12992]

9) The z transform of e^{-t} sampled at 10Hz will be :

   (1) $\frac{z}{z-10}$

   (2) $\frac{z}{z-0.1}$

   (3) $\frac{z}{z-0.9}$

   (4) $\frac{z}{z-1.1}$

[Question ID = 3249][Question Description = 109_88_ETS_SEP22_S1_Q09]
1. 1 [Option ID = 12993]
2. 2 [Option ID = 12994]
3. 3 [Option ID = 12995]
4. 4 [Option ID = 12996]

10) If b and n be the number of branches and number of nodes, respectively, and s be the number of separate parts, then the number of independent loop equations will be :

   (1) $b + n - s$

   (2) $b - n + s$

   (3) $b + n + s$

   (4) $b - n - s$

[Question ID = 3250][Question Description = 110_88_ETS_SEP22_S1_Q10]
1. 1 [Option ID = 12997]
2. 2 [Option ID = 12998]
3. 3 [Option ID = 12999]
4. 4 [Option ID = 13000]

11) A Two – port network is reciprocal if and only if :

   (1) $Z_{11} = Z_{22}$

   (2) $Y_{12} = -Y_{21}$

   (3) $f = fc$

   (4) $h_{12} = h_{21}$

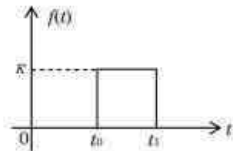**[Question ID = 3251][Question Description = 111_88_ETS_SEP22_S1_Q11]**
1. 1 [Option ID = 13001]
2. 2 [Option ID = 13002]
3. 3 [Option ID = 13003]
4. 4 [Option ID = 13004]

12) A K -step function is shown in the following figure.

The Laplace transform of the function $f(t)$ will be :

(1) $\frac{K}{s}[e^{-st_0} + e^{-st_1}]$

(2) $E\theta$

(3) $\frac{K}{s}[e^{+st_0} + e^{-st_1}]$

(4) $\frac{K}{s}[e^{st_0} - e^{-st_1}]$

13) An essential requirement of a well designed choke input filter is :

(1) X_C at input frequency be equal to R_L

(2) X_L be equal to X_C at input frequency

(3) X_L be much less than X_C at input frequency

(4) X_L be much greater than X_C at input frequency

14) The total output offset voltage of an operational amplifier is a function of these effects.

(1) Input offset voltage and Input bias currents

(2) Input offset voltage and Input offset currents

(3) Input offset currents and Input bias currents

(4) Input voltage range and Input offset currents

15) An Audio pre-amplifier needs to reproduce signals as high as 20 kHz. The maximum output swing is 10 V peak. The minimum acceptable slew rate for the op-amp used is :

(1) $2.514\,V/\mu s$

(2) $1.257\,V/\mu s$

(3) $12.568\,V/\mu s$

(4) $25.136\,V/\mu s$

16) Which of the following terms is not applicable for Absolute-value output circuit?

   (1)   Output is always positive regardless of the polarity of the Input Signal

   (2)   Gain of the circuit is greater than 1

   (3)   Positive peak amplitudes are same as input peak amplitudes

   (4)   Diode D_3 compensates for the voltage drop across diodes D_1 and D_2

[Question ID = 3256][Question Description = 116_88_ETS_SEP22_S1_Q16]

1. 1 [Option ID = 13021]
2. 2 [Option ID = 13022]
3. 3 [Option ID = 13023]
4. 4 [Option ID = 13024]

17) Consider the expression $Y = P \oplus Q \oplus R$ where P, Q, R are the input variables and Y is the output variable. Y will be logic 0 if

   (A)   an odd number of input variables are 1

   (B)   an even number of input variables are 1

   (C)   an odd number of inputs variables are 0

   (D)   an even number of input variable are 0

   (E)   an odd number of input variable between 0 and 1

Choose the correct answer from the options given below:

   (1)   (A), (C) only

   (2)   (E), (D) only

   (3)   (A), (D) only

   (4)   (B) only

[Question ID = 3257][Question Description = 117_88_ETS_SEP22_S1_Q17]

1. 1 [Option ID = 13025]
2. 2 [Option ID = 13026]
3. 3 [Option ID = 13027]
4. 4 [Option ID = 13028]

18) Transmission line of the driving gate is represented by load equal to characteristic impedence of the line Z_0. What is the behaviour of following transmission line circuit when a pulse is applied to the transmission line?
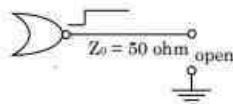
   (1)   Reflected pulse

   (2)   Undershoot

   (3)   Overshoot and ringing after several reflections

   (4)   Undershoot and ringing after five reflections

[Question ID = 3258][Question Description = 118_88_ETS_SEP22_S1_Q18]

1. 1 [Option ID = 13029]
2. 2 [Option ID = 13030]
3. 3 [Option ID = 13031]
4. 4 [Option ID = 13032]

19) Which of the following is true about a tracking A/D converter?

   (1)   It uses up counter only

   (2)   It uses down counter only

   (3)   It uses down/up counter

   (4)   It uses up/down counter

[Question ID = 3259][Question Description = 119_88_ETS_SEP22_S1_Q19]

1. 1 [Option ID = 13033]
2. 2 [Option ID = 13034]
3. 3 [Option ID = 13035]
4. 4 [Option ID = 13036]

20) A 4-bit synchronous counter uses flip-flops with propagation delay of 20 ms each. The maximum possible time required to change of state will be :

(1) 20 ms
(2) 40 ms
(3) 60 ms
(4) 80 ms

[Question ID = 3260][Question Description = 120_88_ETS_SEP22_S1_Q20]
1. 1 [Option ID = 13037]
2. 2 [Option ID = 13038]
3. 3 [Option ID = 13039]
4. 4 [Option ID = 13040]

21) Which one of the following is not the feature of 8051?

(1) 128 bytes of RAM
(2) 4K bytes of on-chip ROM
(3) 16 Interupts
(4) Four 8-bit I/O ports

[Question ID = 3261][Question Description = 121_88_ETS_SEP22_S1_Q21]
1. 1 [Option ID = 13041]
2. 2 [Option ID = 13042]
3. 3 [Option ID = 13043]
4. 4 [Option ID = 13044]

22) In a version of 8051 the crystal frequency is 12 MHz, find the time delay associated with loop section of the following DELAY subroutine. Consider the machine cycle lasts 12 clock cycles of the crystal frequency

DELAY : MOV R3, # 200

HERE : NOP

NOP

NOP

DJNZ R3; HERE

RET

(1) 0.5 milliseconds

(2) 1 millisecond

(3) 1.5 milliseconds

(4) 2 milliseconds

[Question ID = 3262][Question Description = 122_88_ETS_SEP22_S1_Q22]
1. 1 [Option ID = 13045]
2. 2 [Option ID = 13046]
3. 3 [Option ID = 13047]
4. 4 [Option ID = 13048]

23) What is the operation performed by the following assembly language program of 8051?

        CLR   A

        MOV   R1, # 100H

        MOV   R7, # 21H

AGAIN : MOV   @ R1, A

        INC   R1

        DJNC   R7, AGAIN

(1) Clears the 21 RAM locations starting from address 100 H
(2) Clears 100 RAM locations starting from address 21 H
(3) Clears 33 RAM locations starting from address 100 H
(4) Clears 33 RAM locations starting from address 21 H

24) A stepper motor has the following specifications :

Step angle : 2°

Steps per revolution : 180

No. of rotor teeth : 45

Movement per 4 – step sequence : 8°

The following program will rototate a motor by how many degrees?

```
        ORG     0000H
        MOV     A, # 66H
        MOV     RO, # 32
BACK :  RR      A
        MOV     P1, A
        ACALL   DELAY
        DJNZ    RO, BACK
        END
```

(1) 64°

(2) 32°

(3) 90°

(4) 180°

25) The absolute potential at a point P which is 2 m from a point charge of $+5\mu C$ is given by :

(1)   22.5 kV

(2)   11.25 kV

(3)   45.00 kV

(4)   90.00 kV

26) A sphere of radius $r_1 = 30$ cm has a charge density variation $\rho_0 (r/r_1)$

where $\rho_0 = 200$ pC/m^3. The value of total charge on the sphere is

(1)   17 pC

(2)   8.5 pC

(3)   34 pC

(4)   200 pC

27) To match the impedance of a 'ground penetrating radar antenna' to the ground, impedance of ground is given by the expresion, (if $\epsilon_r = 14$, $\mu_r = 1$, $\sigma = 10^{-2}$ ℧/m, operating frequency = 200 MHz)

(1) $377\sqrt{\dfrac{j}{0.9+j14}}$

(2) $\sqrt{\dfrac{j}{0.9+j14}}$

(3) $377\sqrt{\dfrac{1}{0.9+j14}}$

(4) $377\left(\dfrac{1}{14+j0.7}\right)$

[Question ID = 3267][Question Description = 127_88_ETS_SEP22_S1_Q27]
1. 1 [Option ID = 13065]
2. 2 [Option ID = 13066]
3. 3 [Option ID = 13067]
4. 4 [Option ID = 13068]

28) For an isotropic antenna $P_n(\theta,\varphi) = 1$, $D = 1$, for all θ and φ. The beam area for the isotropic antenna is given by :

(1) π

(2) 4π

(3) 3π

(4) 2π

[Question ID = 3268][Question Description = 128_88_ETS_SEP22_S1_Q28]
1. 1 [Option ID = 13069]
2. 2 [Option ID = 13070]
3. 3 [Option ID = 13071]
4. 4 [Option ID = 13072]

29) The appropriate value of modulation index β for transition between narrow band and wide band FM is considered as :

(1) 0.150

(2) 0.471

(3) 0.271

(4) 0.015

[Question ID = 3269][Question Description = 129_88_ETS_SEP22_S1_Q29]
1. 1 [Option ID = 13073]
2. 2 [Option ID = 13074]
3. 3 [Option ID = 13075]
4. 4 [Option ID = 13076]

30) For a given probability of error, binary coherent FSK is inferior to binary coherent PSK by :

(1) 0 dB

(2) 2 dB

(3) 3 dB

(4) 6 dB

[Question ID = 3270][Question Description = 130_88_ETS_SEP22_S1_Q30]
1. 1 [Option ID = 13077]
2. 2 [Option ID = 13078]
3. 3 [Option ID = 13079]
4. 4 [Option ID = 13080]

31) A voice signal band limited to 3.4 kHz is sampled at 8 kHz and pulse code modulated using 64 quantization levels. Ten such signals are time division multiplexed using on 5-bit synchronising word. The minimum channel band width will be

(1)   64 kHz
(2)   128 kHz
(3)   320 kHz
(4)   520 kHz

[Question ID = 3271][Question Description = 131_88_ETS_SEP22_S1_Q31]
1. 1 [Option ID = 13081]
2. 2 [Option ID = 13082]
3. 3 [Option ID = 13083]
4. 4 [Option ID = 13084]

32) The number of reference patterns in the code book (N), the number of samples in each

block (K) and the coded transmission rate in bits per sample (r) are related as :

(1) $r = N \, log_2(K)$
(2) $r = K \, log_2(N)$
(3) $r = \dfrac{K}{log_2(N)}$
(4) $r = \dfrac{log_2(N)}{K}$

[Question ID = 3272][Question Description = 132_88_ETS_SEP22_S1_Q32]
1. 1 [Option ID = 13085]
2. 2 [Option ID = 13086]
3. 3 [Option ID = 13087]
4. 4 [Option ID = 13088]

33) A graded indexed optical fiber has a parabolic refractive index profile ($\alpha = 2$). If the fiber has a numerical aperture = 0.22 the total number of guided modes at a wavelength of 1310 nm is given by :

(1)   174
(2)   1740
(3)   119
(4)   274

[Question ID = 3273][Question Description = 133_88_ETS_SEP22_S1_Q33]
1. 1 [Option ID = 13089]
2. 2 [Option ID = 13090]
3. 3 [Option ID = 13091]
4. 4 [Option ID = 13092]

34) In optical Communication system the Zero dispersion wave length is given by :

(1)   0 nm
(2)   1310 nm
(3)   1550 nm
(4)   900 nm

[Question ID = 3274][Question Description = 134_88_ETS_SEP22_S1_Q34]
1. 1 [Option ID = 13093]
2. 2 [Option ID = 13094]
3. 3 [Option ID = 13095]
4. 4 [Option ID = 13096]

35) An R-L load is connected to a 250V, 400 Hz step down dc converter. The average load current is 100 A. The load resistance is 0.5 Ohm. The allowed ripple limit is 15%. The minimum value of inductor to limit the maximum ripple current is :

(1) 66.7 mH

(2) 6.67 mH

(3) 3.67 mH

(4) 36.7 mH

[Question ID = 3275][Question Description = 135_88_ETS_SEP22_S1_Q35]
1. 1 [Option ID = 13097]
2. 2 [Option ID = 13098]
3. 3 [Option ID = 13099]
4. 4 [Option ID = 13100]

36) A thyristor can be fired with $\frac{uv}{dt}$ of $200^V/\mu s$. If the forward breakover current of the device is 5 mA. The value of diffusion capacitance is given by :

(1) 25 pF

(2) 2.5 pF

(3) $25\mu F$

(4) $2.5\mu F$

[Question ID = 3276][Question Description = 136_88_ETS_SEP22_S1_Q36]
1. 1 [Option ID = 13101]
2. 2 [Option ID = 13102]
3. 3 [Option ID = 13103]
4. 4 [Option ID = 13104]

37) Which of the following statements is not correct about Electromagnetic Flow meter?

(1) This technique can be used for electrical non-contacting fluids like gases.

(2) The principle of operation is directly analogus to Faraday's law of electromagnetic induction for solid conductors.

(3) Electromagnetic flow meter is suitable for fluids containing solid matter.

(4) The use of these meters is limited to fluids having conductivity atleast of the order of 1×10^{-6} Ʊ/cm.(mho/cm)

[Question ID = 3277][Question Description = 137_88_ETS_SEP22_S1_Q37]
1. 1 [Option ID = 13105]
2. 2 [Option ID = 13106]
3. 3 [Option ID = 13107]
4. 4 [Option ID = 13108]

38) For an Ionization chamber, If 'S' is ionization density, 'N_o' represents ionizing particles arriving each second 'L' is active length of Chamber 'P' is pressure of gas in Chamber and 'e' is the charge of an electron. Then Ionization current is calculated using equation.

(1) $Is = \frac{SLP}{N_O e}$

(2) $Is = \frac{N_O SLP}{e}$

(3) $Is = \frac{N_O SLe}{P}$

(4) $Is = N_O SLPe$

[Question ID = 3278][Question Description = 138_88_ETS_SEP22_S1_Q38]
1. 1 [Option ID = 13109]
2. 2 [Option ID = 13110]
3. 3 [Option ID = 13111]
4. 4 [Option ID = 13112]

39) Which of the following is not a desirable characteristic of manometer fluid?

(1) It should have high viscosity.

(2) It should be non-corrosive.

(3) It should be free from capillary effects

(4) It should have negligible surface tension

[Question ID = 3279][Question Description = 139_88_ETS_SEP22_S1_Q39]

1. 1 [Option ID = 13113]
2. 2 [Option ID = 13114]
3. 3 [Option ID = 13115]
4. 4 [Option ID = 13116]

40) The Q of an unknown coil using parallel connection measurement method can be calculated using which of the following equations.

(1) $Qp = \dfrac{C_1 \Delta Q}{(C_1 - C_2)(Q_1 Q_2)}$

(2) $Qp = \dfrac{(C_1 - C_2)}{C_1 \Delta Q}$

(3) $Qp = \dfrac{(C_1 - C_2)(Q_1 Q_2)}{C_1 \Delta Q}$

(4) $Qp = \dfrac{C_1 \Delta Q}{(C_1 + C_2)(Q_1 Q_2)}$

[Question ID = 3280][Question Description = 140_88_ETS_SEP22_S1_Q40]
1. 1 [Option ID = 13117]
2. 2 [Option ID = 13118]
3. 3 [Option ID = 13119]
4. 4 [Option ID = 13120]

41) The pull up to pull down ratio for an n mos inverter driven by another n mos inverter can be evaluated from:

(A) $V_{inv} = V_t - \dfrac{V_{td}}{\sqrt{Zpu/Zpd}}$

(B) $V_{inv} = \dfrac{-V_{td}}{\sqrt{Zpu/Zpd}}$

(C) $\dfrac{W_{pd}}{L_{pd}}(V_{inv} - V_t)^2 = \dfrac{W_{pu}}{L_{pu}}(-V_{td})^2$

(D) $\dfrac{W_{pd}}{L_{pd}}(V_{inv} - V_t) = \dfrac{W_{pu}}{L_{pu}}(-V_{td})^2$

Choose the correct answer from the options given below:

(1) (A), (B) only

(2) (B), (C) only

(3) (C), (D) only

(4) (A), (C) only

[Question ID = 3281][Question Description = 141_88_ETS_SEP22_S1_Q41]
1. 1 [Option ID = 13121]
2. 2 [Option ID = 13122]
3. 3 [Option ID = 13123]
4. 4 [Option ID = 13124]

42) The layers of nmos involves a subset of layers. For nmos we require :

(A) Contact, (Black or Brown)

(B) Polysilicon (Green)

(C) Metal (Blue)

(D) Implant (Yellow)

Choose the correct answer from the options given below:

(1) (A), (B), (C) only

(2) (B), (C), (D) only

(3) (A), (C), (D) only

(4) (A), (B), (D) only

[Question ID = 3282][Question Description = 142_88_ETS_SEP22_S1_Q42]
1. 1 [Option ID = 13125]
2. 2 [Option ID = 13126]
3. 3 [Option ID = 13127]
4. 4 [Option ID = 13128]

43) The layout of nmos involves a subset of the layers and features set out. For nmos we require

(A) N-diffusion (Green)   (B) Implant (Yellow)
(C) Polysilicon (Red)   (D) N-diffusion (Blue)

Choose the correct answer from the options given below:

(1) (A), (B), (C) only
(2) (A), (C), (D) only
(3) (B), (C), (D) only
(4) (A), (B), (D) only

[Question ID = 3283][Question Description = 143_88_ETS_SEP22_S1_Q43]

1. 1 [Option ID = 13129]
2. 2 [Option ID = 13130]
3. 3 [Option ID = 13131]
4. 4 [Option ID = 13132]

44) The electron current density in semiconductor devices is given as

(A) $q\mu_n n\varepsilon + q\bar{D}n\frac{\partial n}{\partial x}$ (B) $q\mu_n \, p\varepsilon + qDp\frac{\partial n}{\partial x}$

(C) $q\mu_n \left(n\varepsilon + \frac{kT}{q}\frac{\partial n}{\partial x}\right)$ (D) $q\mu_n \left(n\varepsilon - \frac{kT}{q}\frac{\partial n}{\partial x}\right)$

Choose the correct answer from the options given below:

(1) (A) and (B) only
(2) (A) and (C) only
(3) (A) and (D) only
(4) (C) and (D) only

[Question ID = 3284][Question Description = 144_88_ETS_SEP22_S1_Q44]

1. 1 [Option ID = 13133]
2. 2 [Option ID = 13134]
3. 3 [Option ID = 13135]
4. 4 [Option ID = 13136]

45) The number of occupied conduction band levels in intrinsic semiconductor is

(A) $N_c \, exp\left(-\frac{E_C - E_F}{kT}\right)$ (B) $\int_{E_C}^{E_{top}} N(E)F(E)dE$

(C) $N_c \, exp\left(\frac{E_F - E_C}{kT}\right)$ (D) $\int_{E_F}^{E_{top}} exp \;\; (N(E))dE$

Choose the correct answer from the options given below:

(1) (A) and (B) only
(2) (B) and (C) only
(3) (C) and (D) only
(4) (A) and (D) only

[Question ID = 3285][Question Description = 145_88_ETS_SEP22_S1_Q45]

1. 1 [Option ID = 13137]
2. 2 [Option ID = 13138]
3. 3 [Option ID = 13139]
4. 4 [Option ID = 13140]

46) Read the following statements regarding transfer function.

(A) The transfer function is used to describe networks which have only two ports.

(B) The transfer function is used to describe networks which have atleast two ports.

(C) The ratio of transforms of one current to another current is called current transfer function.

(D) The ratio of transforms of one voltage to another current is called transfer admittance function.

Choose the correct answer from the options given below:

(1) (A) and (C) only

(2) (B) and (C) only

(3) (B) and (D) only

(4) (C) and (D) only

[Question ID = 3286][Question Description = 146_88_ETS_SEP22_S1_Q46]
1. 1 [Option ID = 13141]
2. 2 [Option ID = 13142]
3. 3 [Option ID = 13143]
4. 4 [Option ID = 13144]

47) Read the following statements regarding two port networks.

(A) The condition of reciprocity and symmetry for a two-port network with 'g' parameter representation can be deduced from the interrelationship of 'h' and g parameters.

(B) The condition of reciprocity for 'h' parameter representation leads to the condition of reciprocity for 'g' parameters representation as $g_{12} = -g_{21}$

(C) The condition of symmetry in h-parameters representation never leads to the condition of symmetry in 'g' parameters representation.

(D) The symmetry condition in 'h' and 'g' parameter representation can be deduced by putting $h_{11} = g_{11}$.

Choose the correct answer from the options given below:

(1) (A) and (B) only

(2) (B) and (C) only

(3) (C) and (D) only

(4) (A) and (D) only

[Question ID = 3287][Question Description = 147_88_ETS_SEP22_S1_Q47]
1. 1 [Option ID = 13145]
2. 2 [Option ID = 13146]
3. 3 [Option ID = 13147]
4. 4 [Option ID = 13148]

48) Which of the following statements are correct?

(A) An Instrumentation Amplifier must have low dc offset as well as low output impedance.

(B) A Voltage to current converter is used for LED and Zener diode testing.

(C) Current to voltage converter is also called transconductance amplifier.

(D) A Sample and hold circuit is used in digital to analog interfacing.

(E) A precision diode may never be used as peak value detector.

Choose the correct answer from the options given below :

(1) (A) and (B) only

(2) (A) and (C) only

(3) (D) and (E) only

(4) (B) and (D) only

[Question ID = 3288][Question Description = 148_88_ETS_SEP22_S1_Q48]
1. 1 [Option ID = 13149]
2. 2 [Option ID = 13150]
3. 3 [Option ID = 13151]
4. 4 [Option ID = 13152]

49) Which of the following statements are correct?

(A) Zero crossing detector is a comparator with $V_{ref} = 0$

(B) An astable multivibrator is used to generate pulses of desired duration.

(C) The phase shift and wien bridge are commonly used sinewave oscillators for radio frequency.

(D) The frequency of a square wave generator is independant of trigger levels of comparator.

(E) A Triangular wave can be generated by integrating a square wave.

Choose the correct answer from the options given below :

(1) (A) and (B) only

(2) (A) and (C) only

(3) (A) and (E) only

(4) (D) and (E) only

[Question ID = 3289][Question Description = 149_88_ETS_SEP22_S1_Q49]
1. 1 [Option ID = 13153]
2. 2 [Option ID = 13154]
3. 3 [Option ID = 13155]
4. 4 [Option ID = 13156]

50) Which of the following statements are correct?

(A)   In a boost regulator, the output voltage is filtered with choke-input filter.

(B)   A capacitor may be needed in a discrete voltage regulator to prevent oscillations.

(C)   Thermal shutdown occurs in an IC regulator if internal temperature is too high.

(D)   An increase of line voltage into a power supply produces an increase in load voltage.

(E)   A series regulator is an example of a switching regulator.

Choose the correct answer from the options given below :

(1)   (A),(C) and (E) only

(2)   (B),(C) and (D) only

(3)   (B),(D) and (E) only

(4)   (C),(D) and (E) only

[Question ID = 3290][Question Description = 150_88_ETS_SEP22_S1_Q50]
1. 1 [Option ID = 13157]
2. 2 [Option ID = 13158]
3. 3 [Option ID = 13159]
4. 4 [Option ID = 13160]

51) The steps for subtracting two positive numbers (M-N) using (r–1)'s complement are:

(A)   Add the minuend M to the (r–1)'s complement of the substrahend N.

(B)   If an end carry occurs, add 1 to the least significant bit.

(C)   If end carry does not occur, take the (r–1)'s complement of the number obtained in step A and place negative sign in front

(D)   Take (r–1)'s complement of the number obtained in step B on step C.

Choose the correct answer from the options given below :

(1)   (A),(B),(D) only

(2)   (A),(B),(C) only

(3)   (A),(C),(D) only

(4)   (B),(C),(D) only

[Question ID = 3291][Question Description = 151_88_ETS_SEP22_S1_Q51]
1. 1 [Option ID = 13161]
2. 2 [Option ID = 13162]
3. 3 [Option ID = 13163]
4. 4 [Option ID = 13164]

52) For an R S flip flop :

(A) $R = 0, S = 0, Q_{n+1} = 1$

(B) $R = 0, S = 0, Q_{n+1} = \overline{Q}_n$

(C) $R = 0, S = 0, Q_{n+1} = Q_n$

(D) $R = 1, S = 0, Q_{n+1} = 0$

(E) $R = 0, S = 1, Q_{n+1} = 1$

Choose the correct answer from the options given below :

(1) (C),(D),(E) only

(2) (A),(D), (E) only

(3) (B),(D),(E) only

(4) (C) and (D) only

[Question ID = 3292][Question Description = 152_88_ETS_SEP22_S1_Q52]
1. 1 [Option ID = 13165]
2. 2 [Option ID = 13166]
3. 3 [Option ID = 13167]
4. 4 [Option ID = 13168]

53) The methods of passing parameters to a procedure are:

(A) Using interrupt routine

(B) Using general memory and named memory locations

(C) Using register to pass values of the variables

(D) Using the stack to pass values of variables

Choose the correct answer from the options given below :

(1) (A),(B),(D) only

(2) (A),(B),(C) only

(3) (A),(C),(D) only

(4) (B),(C),(D) only

[Question ID = 3293][Question Description = 153_88_ETS_SEP22_S1_Q53]
1. 1 [Option ID = 13169]
2. 2 [Option ID = 13170]
3. 3 [Option ID = 13171]
4. 4 [Option ID = 13172]

54) Which of the following steps are necessary for developing an assembly language program?

(A) Write down in general terms the algorithm for the task program has to solve using flow chart

(B) Write an initialization chek-list for your program

(C) Determine instruction statements required to do each part of the program

(D) Start writting assembly language code for the program

(E) Execute the program on the microprocessor

Choose the correct answer from the options given below :

(1) (A),(D),(E) only

(2) (A),(B),(C),(E) only

(3) (C),(D),(E) only

(4) (A),(B),(C),(D) only

[Question ID = 3294][Question Description = 154_88_ETS_SEP22_S1_Q54]
1. 1 [Option ID = 13173]
2. 2 [Option ID = 13174]
3. 3 [Option ID = 13175]
4. 4 [Option ID = 13176]

55) Read the following statements regarding signal flow graph.

(A) The signal travels along a branch in the direction of an arrow.

(B) The Node transmitts signals in all the branches entering at that Node.

(C) Input signal at Node is the sum of all signals leaving that Node.

(D) The input signal is multiplied by the transmittance to obtain the output signal.

Choose the correct answer from the options given below :

(1) (A) and (B) only

(2) (B) and (D) only

(3) (A) and (D) only

(4) (B) and (C) only

[Question ID = 3295][Question Description = 155_88_ETS_SEP22_S1_Q55]
1. 1 [Option ID = 13177]
2. 2 [Option ID = 13178]
3. 3 [Option ID = 13179]
4. 4 [Option ID = 13180]

56) For sky waves, following statements are given :

(A) $n > 1$, this shows $81\frac{N}{f^2}$ positive

(B) $n > 1$, show $81\frac{N}{f^2}$ Negative

(C) $n < 1$ shows $81\frac{N}{f^2} < 1$

(D) $v_g \cdot v_p = c^2$

(E) $n = 0$ shows $81\frac{N}{f^2} = 1$, $f = f_c$

Choose the correct answer from the options given below :

(1)   (A),(D) only

(2)   (B),(D) only

(3)   (B),(C),(D),(E) only

(4)   (A),(D),(E) only

[Question ID = 3296][Question Description = 156_88_ETS_SEP22_S1_Q56]
1. 1 [Option ID = 13181]
2. 2 [Option ID = 13182]
3. 3 [Option ID = 13183]
4. 4 [Option ID = 13184]

57) For Poynting vector, following are given :

(A)   Poynting Vector around a point source is radial

(B)   There are only E_θ & E_φ present and are transverse

(C)   There is only E_θ component is present

(D)   There is only E_φ is present

(E)   Poynting vector does not exist around a point source

Choose the correct answer from the options given below :

(1)   (A) and (D) only

(2)   (B) and (E) only

(3)   (E) and (D) only

(4)   (A) and (B) only

[Question ID = 3297][Question Description = 157_88_ETS_SEP22_S1_Q57]
1. 1 [Option ID = 13185]
2. 2 [Option ID = 13186]
3. 3 [Option ID = 13187]
4. 4 [Option ID = 13188]

58) For electrical drives

(A)   For $Tm(t) < T_L(t), \frac{dw}{dt} > 0$

(B)   For $Tm(t) > T_L(t), \frac{dw}{dt} > 0$, speed increases

(C)   For $Tm(t) = T_L(t), \frac{dw}{dt} = 0$, drive attains steady state

(D)   The Equation $J\frac{dw}{dt} + \frac{w^2}{2}\frac{dJ(\alpha)}{d\alpha} = Tm(t) - T_L(t)$

(E)   Equation $J\frac{dw}{dt} - \frac{w^2}{2}\frac{dJ(\alpha)}{d\alpha} = Tm(t) - T_L(t)$

Choose the correct answer from the options given below :

(1)   (B),(C),(E) only

(2)   (A),(C),(D) only

(3)   (A) and (E) only

(4)   (B) and (D) only

[Question ID = 3298][Question Description = 158_88_ETS_SEP22_S1_Q58]
1. 1 [Option ID = 13189]
2. 2 [Option ID = 13190]
3. 3 [Option ID = 13191]

4. 4 [Option ID = 13192]

59) In optical fibers, following statements are given:

(A) $\frac{1}{v_g} = -\frac{\lambda^2}{2\pi c}\frac{db}{d\lambda}$

(B) $v_g = -\frac{\lambda^2}{2\pi c}d\beta/d\lambda$

(C) $D = -\frac{2\pi c}{\pi^2}\beta_2$

(D) $\beta_2 = -\frac{2\pi c}{\pi^2}.D$

(E) Material dispersion is a function of (λ) wavelength

Choose the correct answer from the options given below :

(1) (B),(C),(E) only

(2) (A),(D),(E) only

(3) (A),(C),(E) only

(4) (B),(D),(E) only

[Question ID = 3299][Question Description = 159_88_ETS_SEP22_S1_Q59]
1. 1 [Option ID = 13193]
2. 2 [Option ID = 13194]
3. 3 [Option ID = 13195]
4. 4 [Option ID = 13196]

60) In induction motors :

(A) In regenerative breaking, the synchronous speed is greater than rotor speed

(B) The slip is Negative in regenerative breaking

(C) In regenerative breaking rotor speed is greater than synchronous speed

(D) The slip is positive in regenerative breaking

Choose the correct answer from the options given below :

(1) (A) and (B) only

(2) (A) and (D) only

(3) (B) and (C) only

(4) (C) and (D) only

[Question ID = 3300][Question Description = 160_88_ETS_SEP22_S1_Q60]
1. 1 [Option ID = 13197]
2. 2 [Option ID = 13198]
3. 3 [Option ID = 13199]
4. 4 [Option ID = 13200]

61) Read the following statements :

(A)   A selective filtering method is most commonly used for generation of SSB signals

(B)   A selective filtering method is most commonly used for generation of DSB signals

(C)   A VSB modulation is also known as asymmetric side band system

(D)   A VSB modulation is also known as symmetric sideband system

Choose the correct answer from the options given below :

(1)   (A) and (B) only

(2)   (B) and (C) only

(3)   (A) and (C) only

(4)   (A) and (D) only

[Question ID = 3301][Question Description = 161_88_ETS_SEP22_S1_Q61]
1. 1 [Option ID = 13201]
2. 2 [Option ID = 13202]
3. 3 [Option ID = 13203]
4. 4 [Option ID = 13204]

62) In digital data transmission, a line code should have the following properties

(A)   Transmission bandwidth should be as small as possible

(B)   Transmitted power should be as high as possible

(C)   Transmission bandwidth should be as high as possible

(D)   Transmitted power should be as low as possible

Choose the correct answer from the options given below :

(1)   (A) and (B) only

(2)   (B) and (C) only

(3)   (C) and (D) only

(4)   (A) and (D) only

[Question ID = 3302][Question Description = 162_88_ETS_SEP22_S1_Q62]
1. 1 [Option ID = 13205]
2. 2 [Option ID = 13206]
3. 3 [Option ID = 13207]
4. 4 [Option ID = 13208]

63) Which of the following statements are correct about an IR photodiode?

(A) IR photodiodes cause no risk of contamination or physical damage to the object surface

(B) For higher temperatures, IR photodiode devices have shorter life

(C) IR photodiodes can not be used to measure temperature of moving objects (conveyer bell)

(D) IR photodiodes are capable of measuring hazardous and physically in accessible process

Choose the correct answer from the options given below :

(1) (A), (B) and (C) only

(2) (B) and (C) only

(3) (A) and (D) only

(4) (B), (C) and (D) only

[Question ID = 3303][Question Description = 163_88_ETS_SEP22_S1_Q63]
1. 1 [Option ID = 13209]
2. 2 [Option ID = 13210]
3. 3 [Option ID = 13211]
4. 4 [Option ID = 13212]

64) Which of the following statements are correct about AC Bridges?

(A) The Maxwell bridge is suitable for measurement of Medium-Q Coils $(1 < Q < 10)$

(B) For measurements at low frequencies, an oscillator supplies excitation voltage while at higher frequencies, power line may serve as source of excitation

(C) The Hay bridge is convenient for measuring very low-Q coils $(Q < 1)$

(D) The Schering bridge is particularly useful for the measure of insulating properties i.e. for phase angles nearly 90°

Choose the correct answer from the options given below :

(1) (A) and (B) only

(2) (A) and (D) only

(3) (B) and (C) only

(4) (B) and (D) only

[Question ID = 3304][Question Description = 164_88_ETS_SEP22_S1_Q64]
1. 1 [Option ID = 13213]
2. 2 [Option ID = 13214]
3. 3 [Option ID = 13215]
4. 4 [Option ID = 13216]

65) For transducers, following statements are given :

(A) An optical interferometer is useful for measuring extremely small motions

(B) The damping ratio of a seismic instrument should be low for good dynamic performance

(C) A rate gyro is a relative motion measuring device

(D) A pneumatic motion transducer is non-linear over a wide range of motion

(E) A piezoelectric accelerometer can only be used for static motion measurement

Choose the correct answer from the options given below :

(1) (A) and (B) only

(2) (A) and (C) only

(3) (A) and (D) only

(4) (C) and (E) only

[Question ID = 3305][Question Description = 165_88_ETS_SEP22_S1_Q65]
1. 1 [Option ID = 13217]
2. 2 [Option ID = 13218]
3. 3 [Option ID = 13219]
4. 4 [Option ID = 13220]

66) Match List I with List II :

List I	List II
(A) JFET	(I) Two dimensional electron gas
(B) MOSFET	(II) Negative resistance device
(C) Tunnel diode	(III) Enhancement mode
(D) HEMT	(IV) Voltage controlled resistor

Choose the correct answer from the options given below :

(1) (A)-(IV), (B)-(III), (C)-(II), (D)-(I)

(2) (A)-(III), (B)-(II), (C)-(I), (D)-(IV)

(3) (A)-(II), (B)-(I), (C)-(IV), (D)-(III)

(4) (A)-(I), (B)-(IV), (C)-(III), (D)-(II)

[Question ID = 3306][Question Description = 166_88_ETS_SEP22_S1_Q66]
1. 1 [Option ID = 13221]
2. 2 [Option ID = 13222]
3. 3 [Option ID = 13223]
4. 4 [Option ID = 13224]

67) Match List I with List II :

List I	List II
(A) JFET	(I) Two dimensional electron gas
(B) MOSFET	(II) Negative resistance device
(C) Tunnel diode	(III) Enhancement mode
(D) HEMT	(IV) Voltage controlled resistor

Choose the correct answer from the options given below :

(1) (A)-(IV), (B)-(III), (C)-(II), (D)-(I)

(2) (A)-(III), (B)-(II), (C)-(I), (D)-(IV)

(3) (A)-(II), (B)-(I), (C)-(IV), (D)-(III)

(4) (A)-(I), (B)-(IV), (C)-(III), (D)-(II)

68) Match List I with List II :

List I

List II

Nature of Roots

Coefficients of $s^2 + a_1 s + a_2 = 0$

(I) Negative real and equal

(A) $a_1^2 > 4a_2$

(II) Conjugate Imaginary

(B) $a_1^2 = 4a_2$

(III) Negative Real and Unequal

(C) $a_1^2 < 4a_2$

(IV) Conjugate Complex (Real part negative)

(D) $a_1 = 0$

$a_2 \neq 0$

Choose the correct answer from the options given below :

(1) (A)-(IV), (B)-(II), (C)-(I), (D)-(III)

(2) (A)-(III), (B)-(IV), (C)-(II), (D)-(I)

(3) (A)-(III), (B)-(I), (C)-(IV), (D)-(II)

(4) (A)-(IV), (B)-(III), (C)-(II), (D)-(I)

69) Match List I with List II :

List I

Bias Configuration of BJT

List II

Stability factor equation

(A) Fixed Bias Configuration

(I) $S(V_{BE}) = -\dfrac{\beta/R_E}{\beta + R_{TH}/R_E}$

(B) Emitter Bias Configuration

(II) $S(V_{BE}) = -\beta/R_B$

(C) Voltage Divider Configuration

(III) $S(V_{BE}) = -\dfrac{\beta/R_C}{\beta + R_B/R_C}$

(D) Feedback Bias Configuration

(IV) $S(V_{BE}) = -\dfrac{\beta/R_E}{\beta + R_B/R_E}$

Choose the correct answer from the options given below :

(1) (A)-(II), (B)-(I), (C)-(IV), (D)-(III)

(2) (A)-(II), (B)-(III), (C)-(IV), (D)-(I)

(3) (A)-(II), (B)-(IV), (C)-(I), (D)-(III)

(4) (A)-(IV), (B)-(II), (C)-(I), (D)-(III)

70) Match List I with List II :

List I		List II	
(Decimal)		(8-bit sign magnitude number)	
(A)	+43	(I)	10111000
(B)	+123	(II)	01111011
(C)	−56	(III)	00101011
(D)	−107	(IV)	11101011

Choose the correct answer from the options given below :

(1)   (A)-(IV), (B)-(II), (C)-(I), (D)-(III)

(2)   (A)-(III), (B)-(II), (C)-(I), (D)-(IV)

(3)   (A)-(I), (B)-(II), (C)-(III), (D)-(IV)

(4)   (A)-(II), (B)-(III), (C)-(IV), (D)-(I)

71) Match List I with List II :

List I		List II	
(Communication Mode)		(Features)	
(A)	Mode 0	(I)	High speed; 8-bit shift register; one baud rate of $f/12$
(B)	Mode 1	(II)	Standard 8-bit UART; variable baud rate using time 1 overflows
(C)	Mode 2	(III)	Multiprocessor 9-bit UART; variable baud rate using time 1 overflows
(D)	Mode 3	(IV)	Multiprocessor 9-bit UART ; two baud rates of $f/32$ and $f/64$

Choose the correct answer from the options given below :

(1)   (A)-(I), (B)-(II), (C)-(IV), (D)-(III)

(2)   (A)-(I), (B)-(II), (C)-(III), (D)-(IV)

(3)   (A)-(IV), (B)-(III), (C)-(I), (D)-(II)

(4)   (A)-(II), (B)-(III), (C)-(I), (D)-(IV)

72) Match List I with List II :

	List I		List II
	Optical Amplifiers		Operating band
(A)	PDFFA	(I)	S-band
(B)	TDFA	(II)	C-band
(C)	EDFA	(III)	L-band
(D)	Gain shifted EDFA	(IV)	O-band

Choose the correct answer from the options given below :

(1)   (A)-(IV), (B)-(III), (C)-(I), (D)-(II)

(2)   (A)-(IV), (B)-(II), (C)-(I), (D)-(III)

(3)   (A)-(IV), (B)-(I), (C)-(II), (D)-(III)

(4)   (A)-(II), (B)-(I), (C)-(IV), (D)-(III)

[Question ID = 3312][Question Description = 172_88_ETS_SEP22_S1_Q72]
1. 1 [Option ID = 13245]
2. 2 [Option ID = 13246]
3. 3 [Option ID = 13247]
4. 4 [Option ID = 13248]

73) Match List I with List II :

	List I		List II
(A)	Shannon's theorem	(I)	Capacity of Gaussian Noise channel
(B)	Shannon-Hartley theorem	(II)	Rate of Information
(C)	Baye's theorem	(III)	Energy of a signal
(D)	Parseval's theorem	(IV)	Conditional probabilities

Choose the correct answer from the options given below :

(1)   (A)-(II), (B)-(I), (C)-(III), (D)-(IV)

(2)   (A)-(II), (B)-(I), (C)-(IV), (D)-(III)

(3)   (A)-(III), (B)-(II), (C)-(IV), (D)-(I)

(4)   (A)-(II), (B)-(III), (C)-(I), (D)-(IV)

[Question ID = 3313][Question Description = 173_88_ETS_SEP22_S1_Q73]
1. 1 [Option ID = 13249]
2. 2 [Option ID = 13250]
3. 3 [Option ID = 13251]
4. 4 [Option ID = 13252]

74) Match List I with List II :

List I

Effect of ξ

List II

Condition of System

(A) $0 < \xi < 1$

(I) Over damped

(II) Undamped

(B) $\xi > 1$

(III) Unstable

(C) $\xi = 0$

(IV) Under damped

(D) $\xi = -1$

Choose the correct answer from the options given below :

(1) (A)-(III), (B)-(I), (C)-(II), (D)-(IV)

(2) (A)-(IV), (B)-(II), (C)-(I), (D)-(III)

(3) (A)-(IV), (B)-(I), (C)-(III), (D)-(II)

(4) (A)-(IV), (B)-(I), (C)-(II), (D)-(III)

[Question ID = 3314][Question Description = 174_88_ETS_SEP22_S1_Q74]
1. 1 [Option ID = 13253]
2. 2 [Option ID = 13254]
3. 3 [Option ID = 13255]
4. 4 [Option ID = 13256]

75) Match List I with List II :

List I

Transducer

List II

Application

(A) Pirani gage

(I) Liquid level

(B) Dielectric gage

(II) Displacement

(C) Magnetostriciton gage

(III) Gas flow

(D) Variable capacitance pressure gage

(IV) Sound

Choose the correct answer from the options given below :

(1) (A)-(III), (B)-(IV), (C)-(I), (D)-(II)

(2) (A)-(II), (B)-(I), (C)-(IV), (D)-(III)

(3) (A)-(IV), (B)-(II), (C)-(I), (D)-(III)

(4) (A)-(III), (B)-(I), (C)-(IV), (D)-(II)

[Question ID = 3315][Question Description = 175_88_ETS_SEP22_S1_Q75]
1. 1 [Option ID = 13257]
2. 2 [Option ID = 13258]
3. 3 [Option ID = 13259]
4. 4 [Option ID = 13260]

76) Arrange the following in ascending order of their dielectric constant :

(A) Si_3N_4

(B) Ge

(C) GaAs

(D) SiO_2

Choose the correct answer from the options given below :

(1) (A), (B), (D), (C)

(2) (B), (C), (A), (D)

(3) (C), (D), (B), (A)

(4) (D), (A), (C), (B)

[Question ID = 3316][Question Description = 176_88_ETS_SEP22_S1_Q76]
1. 1 [Option ID = 13261]
2. 2 [Option ID = 13262]
3. 3 [Option ID = 13263]
4. 4 [Option ID = 13264]

77) Arrange the following in descending order of their switching times :

(A) Schottky diode

(B) Power transistor (Darlington)

(C) IGBT

(D) Triac

Choose the correct answer from the options given below :

(1) (C), (D), (B), (A)

(2) (B), (C), (D), (A)

(3) (C), (B), (D), (A)

(4) (D), (B), (C), (A)

[Question ID = 3317][Question Description = 177_88_ETS_SEP22_S1_Q77]
1. 1 [Option ID = 13265]
2. 2 [Option ID = 13266]
3. 3 [Option ID = 13267]
4. 4 [Option ID = 13268]

78) Consider the network given in the following figure and arrange the following in their increasing order of numbers :

(A) Total numbers of branches

(B) Total numbers of non touching loops

(C) Number of independent loops

(D) Number of nodes

Choose the correct answer from the options given below :

(1) (B), (C), (D), (A)

(2) (B), (C), (A), (D)

(3) (C), (B), (A), (D)

(4) (C), (B), (D), (A)

[Question ID = 3318][Question Description = 178_88_ETS_SEP22_S1_Q78]
1. 1 [Option ID = 13269]
2. 2 [Option ID = 13270]
3. 3 [Option ID = 13271]
4. 4 [Option ID = 13272]

79) The components of class D amplifier are given below. Arrange these in order of their use from input towards output :

(A) Amplifier

(B) Comparator

(C) Sawtooth generator

(D) Low-pass filter

Choose the correct answer from the options given below :

(1) (C), (D), (B), (A)

(2) (D), (A), (B), (C)

(3) (C), (B), (A), (D)

(4) (B), (C), (D), (A)

[Question ID = 3319][Question Description = 179_88_ETS_SEP22_S1_Q79]
1. 1 [Option ID = 13273]
2. 2 [Option ID = 13274]
3. 3 [Option ID = 13275]
4. 4 [Option ID = 13276]

80) Arrange the following activities to properly run the TYPE-4 Interrupt in 8086 micro processor:

(A) Pushes the CS and IP value on stack for next instruction

(B) Pushes the flag register on the stack

(C) Reset TF and IF

(D) Gets the CS value for start of interrupt service procedure

Choose the correct answer from the options given below :

(1) (A), (B), (D), (C)

(2) (C), (B), (A), (D)

(3) (B), (C), (A), (D)

(4) (D), (C), (B), (A)

81) Compare the IC logic families based on their rise time in ascending order :

(A) MECL

(B) CMOS

(C) Low power schottky TTL

(D) PECL
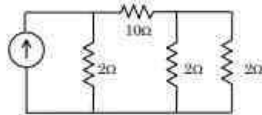
Choose the correct answer from the options given below :

(1) (D), (A), (C), (B)

(2) (B), (C), (A), (D)

(3) (C), (B), (D), (A)

(4) (B), (D), (A), (C)

82) Arrange the following in ascending order of Molecular density in various regions of

ionosphere :

(A) F_1 Layer   (B) F_2 Layer

(C) D Layer   (D) E Layer

Choose the correct answer from the options given below :

(1) (A), (D), (B), (C)

(2) (B), (C), (D), (A)

(3) (B), (A), (D), (C)

(4) (A), (B), (D), (C)

83) Arrange the following in decressing order of the noise generated by them :

(A) Diode   (B) Transistor

(C) Avalanche photo diode   (D) FET

Choose the correct answer from the options given below :

(1) (C), (B), (D), (A)

(2) (C), (B), (A), (D)

(3) (B), (C), (A), (D)

(4) (B), (C), (D), (A)

[Question ID = 3323][Question Description = 183_88_ETS_SEP22_S1_Q83]
1. 1 [Option ID = 13289]
2. 2 [Option ID = 13290]
3. 3 [Option ID = 13291]
4. 4 [Option ID = 13292]

84) Arrange the following in terms of their dielectric strength in ascending order :

(A) Bakelite

(B) Mica

(C) Paper (impregnated)

(D) Teflon

Choose the correct answer from the options given below :

(1) (D), (A), (B), (C)

(2) (A), (C), (D), (B)

(3) (A), (B), (C), (D)

(4) (B), (A), (C), (D)

[Question ID = 3324][Question Description = 184_88_ETS_SEP22_S1_Q84]
1. 1 [Option ID = 13293]
2. 2 [Option ID = 13294]
3. 3 [Option ID = 13295]
4. 4 [Option ID = 13296]

85) Arrange the following thermal sensors in ascending order of their cost for an application :

(A) Thermocouple

(B) Thermistor

(C) Resistance Temperature Detector (RTD)

(D) IR Photodiode

Choose the correct answer from the options given below :

(1) (C), (B), (A), (D)

(2) (A), (B), (C), (D)

(3) (B), (A), (D), (C)

(4) (B), (A), (C), (D)

[Question ID = 3325][Question Description = 185_88_ETS_SEP22_S1_Q85]
1. 1 [Option ID = 13297]
2. 2 [Option ID = 13298]

3. 3 [Option ID = 13299]
4. 4 [Option ID = 13300]

86) For JFET and MOSFET, consider the following statements :

(A) MOSFET is a voltage controlled capacitor

(B) BJT is slower than FET

(C) Input impedance of MOSFET is greater than JFET

(D) Leakage currents are zero in FET

(E) MOSFET are slower that JFET

Choose the correct answer from the options given below :

(1) (A), (B) and (C) only

(2) (A), (B) and (D) only

(3) (B), (C) and (D) only

(4) (B) and (E) only

[Question ID = 3326][Question Description = 186_88_ETS_SEP22_S1_Q86]
1. 1 [Option ID = 13301]
2. 2 [Option ID = 13302]
3. 3 [Option ID = 13303]
4. 4 [Option ID = 13304]

87) Given below are two statements :

Statement I : Turbo codes exhibits performance, in terms of bit error probability, that is very close to the Shannon limit and can be efficiently implemented for high speed use

Statement II : Convolutional codes provide worst performance in noisy channels where a high proportion of the bits are in error

In the light of the above statements, choose the *correct* answer from the options given below :

(1) Both Statement I and Statement II are true

(2) Both Statement I and Statement II are false

(3) Statement I is true but Statement II is false

(4) Statement I is false but Statement II is true

[Question ID = 3327][Question Description = 187_88_ETS_SEP22_S1_Q87]
1. 1 [Option ID = 13305]
2. 2 [Option ID = 13306]
3. 3 [Option ID = 13307]
4. 4 [Option ID = 13308]

88) Given below are two statements :

Statement I : In proportional control, the actuating signal for the control action in a control system is proportional to the error signal

Statement II : It is desirable that control system be over damped for the point of view of quick response

In the light of the above statements, choose the **correct** answer from the options given below :

(1) Both statement I and Statement II are true

(2) Both statement I and Statement II are false

(3) Statement I is true but Statement II is false

(4) Statement I is false but Statement II is true

[Question ID = 3328][Question Description = 188_88_ETS_SEP22_S1_Q88]

1. 1 [Option ID = 13309]
2. 2 [Option ID = 13310]
3. 3 [Option ID = 13311]
4. 4 [Option ID = 13312]

89) Given below are two statements : One is labelled as Assertion A and the other is labelled as Reason R :

Assertion (A) : The biggest advantage of using a PROM as a programmable logic device is that its design can be changed and modified rapidly.

Reason (R) : The PROM can generate any possible logic function of input variables because it generates every possible AND product term.

In the light of the above statements, choose the correct answer from the options given below :

(1) Both (A) and (R) are true and (R) is the correct explanation of (A)

(2) Both (A) and (R) are true but (R) is not the correct explanation of (A)

(3) (A) is true but (R) is false

(4) (A) is not false but (R) is true

[Question ID = 3329][Question Description = 189_88_ETS_SEP22_S1_Q89]

1. 1 [Option ID = 13313]
2. 2 [Option ID = 13314]
3. 3 [Option ID = 13315]
4. 4 [Option ID = 13316]

90) Given below are two statements : One is labelled as Assertion A and the other is labelled as Reason R :

Assertion (A) : Power MOSFETs have a positive temperature coefficient, which combats the possibility of thermal runaway

Reason (R) : Negative temperature coefficient results in decreased level of resistance with increase in temperature and causes thermal runaway

In the light of the above statements, choose the correct answer from the options given below :

(1) Both (A) and (R) are true and (R) is the correct explanation of (A)

(2) Both (A) and (R) are true but (R) is not the correct explanation of (A)

(3) (A) is true but (R) is false

(4) (A) is false but (R) is true

[Question ID = 3342][Question Description = 190_88_ETS_SEP22_S1_Q90]
1. 1 [Option ID = 13365]
2. 2 [Option ID = 13366]
3. 3 [Option ID = 13367]
4. 4 [Option ID = 13368]

Topic:- 088_PARTB_S2

1) Read the following paragraph and answer the five questions that follow :

The internet of things (IOTs) and data analytics are the most significant emerging technologies in recent years that have a disruptive and transformational effect to every industry around the world. The IOT is a technology digitizing the physical world and is a prominent driver to the fourth industrial revolution (IR) that will have the impacts across the business and industry continuum around the world. Business executives and informed citizens are positively anticipating of the fourth IR and digital revolution with low impacts on employments. Applying IOT in to realm of our lives opens-up a host of new opportunities and challenges for consumers, enterprise and Government. IOT products and services enable improvements in productivity and time to market and create thousands of businesses and millions of jobs. Our lives are improved but at the cost of higher energy consumption that directly impacts our environment.

Which of the following is not used as a security protocols

(1) MAC 802.15.4

(2) 6LOWPAN

(3) RPL

(4) XMPP

[Question ID = 3344][Question Description = 191_88_ETS_SEP22_S1_Q91]
1. 1 [Option ID = 13373]
2. 2 [Option ID = 13374]
3. 3 [Option ID = 13375]
4. 4 [Option ID = 13376]

2) Read the following paragraph and answer the five questions that follow :

The internet of things (IOTs) and data analytics are the most significant emerging technologies in recent years that have a disruptive and transformational effect to every industry around the world. The IOT is a technology digitizing the physical world and is a prominent driver to the fourth industrial revolution (IR) that will have the impacts across the business and industry continuum around the world. Business executives and informed citizens are positively anticipating of the fourth IR and digital revolution with low impacts on employments. Applying IOT in to realm of our lives opens-up a host of new opportunities and challenges for consumers, enterprise and Government, IOT products and services enable improvements in productivity and time to market and create thousands of businesses and millions of jobs. Our lives are improved but at the cost of higher energy consumption that directly impacts our environment.

Which of the following is most commonly used IOT standards for Medium Access Control (MAC)

(1)   IEEE, 802.15.4

(2)   IEEE 802.11ah

(3)   IEEE 2413

(4)   IEEE 11073

[Question ID = 3345][Question Description = 192_88_ETS_SEP22_S1_Q92]
1. 1 [Option ID = 13377]
2. 2 [Option ID = 13378]
3. 3 [Option ID = 13379]
4. 4 [Option ID = 13380]

3) Read the following paragraph and answer the five questions that follow :

The internet of things (IOTs) and data analytics are the most significant emerging technologies in recent years that have a disruptive and transformational effect to every industry around the world. The IOT is a technology digitizing the physical world and is a prominent driver to the fourth industrial revolution (IR) that will have the impacts across the business and industry continuum around the world. Business executives and informed citizens are positively anticipating of the fourth IR and digital revolution with low impacts on employments. Applying IOT in to realm of our lives opens-up a host of new opportunities and challenges for consumers, enterprise and Government, IOT products and services enable improvements in productivity and time to market and create thousands of businesses and millions of jobs. Our lives are improved but at the cost of higher energy consumption that directly impacts our environment.

Match List I with List II :

List I		List II	
Technologies for IOT		Definitions	
(A)	Sensors	(I)	Analytical tools that improve the ability to describe phenomenons
(B)	Networks	(II)	Commonly accepted prescriptions for action
(C)	Augmented intelligence	(III)	A device that generates an electronic signal from a physical condition
(D)	Standards	(IV)	A mechanism for communicating an electronic signal

Choose the correct answer from the options given below :

(1) (A)-(II), (B)-(I), (C)-(III), (D)-(IV)

(2) (A)-(III), (B)-(IV), (C)-(II), (D)-(I)

(3) (A)-(III), (B)-(IV), (C)-(I), (D)-(II)

(4) (A)-(II), (B)-(I), (C)-(IV), (D)-(III)

[Question ID = 3346][Question Description = 193_88_ETS_SEP22_S1_Q93]
1. 1 [Option ID = 13381]
2. 2 [Option ID = 13382]
3. 3 [Option ID = 13383]
4. 4 [Option ID = 13384]

4) Read the following paragraph and answer the five questions that follow :

The internet of things (IOTs) and data analytics are the most significant emerging technologies in recent years that have a disruptive and transformational effect to every industry around the world. The IOT is a technology digitizing the physical world and is a prominent driver to the fourth industrial revolution (IR) that will have the impacts across the business and industry continuum around the world. Business executives and informed citizens are positively anticipating of the fourth IR and digital revolution with low impacts on employments. Applying IOT in to realm of our lives opens-up a host of new opportunities and challenges for consumers, enterprise and Government, IOT products and services enable improvements in productivity and time to market and create thousands of businesses and millions of jobs. Our lives are improved but at the cost of higher energy consumption that directly impacts our environment.

Arrange the following IOT technologies in ascending order of their wireless range :

(A)   Near-field communication

(B)   Wi-Fi

(C)   Blue tooth low energy

(D)   Cellular networks

Choose the correct answer from the options given below :

(1)   (A), (B), (C), (D)

(2)   (A), (C), (B), (D)

(3)   (B), (A), (C), (D)

(4)   (B), (C), (A), (D)

[Question ID = 3347][Question Description = 194_88_ETS_SEP22_S1_Q94]
1. 1 [Option ID = 13385]
2. 2 [Option ID = 13386]
3. 3 [Option ID = 13387]
4. 4 [Option ID = 13388]

5) Read the following paragraph and answer the five questions that follow :

The internet of things (IOTs) and data analytics are the most significant emerging technologies in recent years that have a disruptive and transformational effect to every industry around the world. The IOT is a technology digitizing the physical world and is a prominent driver to the fourth industrial revolution (IR) that will have the impacts across the business and industry continuum around the world. Business executives and informed citizens are positively anticipating of the fourth IR and digital revolution with low impacts on employments. Applying IOT in to realm of our lives opens-up a host of new opportunities and challenges for consumers, enterprise and Government, IOT products and services enable improvements in productivity and time to market and create thousands of businesses and millions of jobs. Our lives are improved but at the cost of higher energy consumption that directly impacts our environment.

Which of the following communication technologies has highest data rate?

(1)   Mi-Wi

(2)   4G

(3)   LoRa

(4)   Weightless -W

[Question ID = 3348][Question Description = 195_88_ETS_SEP22_S1_Q95]
1. 1 [Option ID = 13389]
2. 2 [Option ID = 13390]
3. 3 [Option ID = 13391]
4. 4 [Option ID = 13392]

Topic:- 088_PARTC_S2

Read the following paragraph and answer the questions from 96–100

A digital counter is a set of flipflops whose states change in response to the pulses applied at Input. Counters can be asynchronous counters or synchronous counters. A counter is an example of a state machine; the number of states is called the modulus. Two basic types of state machines are the Moore and the Mealy. In Moore machine, the combinational logic is a gate array with outputs that determine the next state of the flip-flops in the memory. For Mealy machine, the present state affects just as in Moore machine but in addition, the inputs also affect the outputs.

The components of a synchronous counter are given below. Arrange these in order of their occurrence for design of synchronous counters

(A)   Next-state table

(B)   Flip-flop transition table

(C)   Karnaugh maps

(D)   State diagram

(E)   Logic expressions for flipflop inputs

Choose the correct answer from the options given below :

(1)   (B), (A), (C), (D), (E)

(2)   (C), (A), (B), (E), (D)

(3)   (D), (A), (B), (C), (E)

(4)   (A), (C), (E), (B), (D)

[Question ID = 3349][Question Description = 196_88_ETS_SEP22_S1_Q96]
1. 1 [Option ID = 13393]
2. 2 [Option ID = 13394]
3. 3 [Option ID = 13395]
4. 4 [Option ID = 13396]

Read the following paragraph and answer the questions from 96–100

A digital counter is a set of flipflops whose states change in response to the pulses applied at Input. Counters can be asynchronous counters or synchronous counters. A counter is an example of a state machine; the number of states is called the modulus. Two basic types of state machines are the Moore and the Mealy. In Moore machine, the combinational logic is a gate array with outputs that determine the next state of the flip-flops in the memory. For Mealy machine, the present state affects just as in Moore machine but in addition, the inputs also affect the outputs.

A binary ripple counter is required to count upto $16,383_{10}$. If the clock frequency is 8.192 MHz, the number of flip-flops required and frequency of the output of MSB respectively are

(1)   28, 500 Hz

(2)   14, 250 Hz

(3)   28, 250 Hz

(4)   14, 500 Hz

[Question ID = 3350][Question Description = 197_88_ETS_SEP22_S1_Q97]
1. 1 [Option ID = 13397]
2. 2 [Option ID = 13398]
3. 3 [Option ID = 13399]
4. 4 [Option ID = 13400]

3) Read the following paragraph and answer the questions from 96–100

A digital counter is a set of flipflops whose states change in response to the pulses applied at Input. Counters can be asynchronous counters or synchronous counters. A counter is an example of a state machine; the number of states is called the modulus. Two basic types of state machines are the Moore and the Mealy. In Moore machine, the combinational logic is a gate array with outputs that determine the next state of the flip-flops in the memory. For Mealy machine, the present state affects just as in Moore machine but in addition, the inputs also affect the outputs.

Which of the following statements is correct about counter?

(1) Design and implementation of asynchronous counter becomes tedious and complex as number of states increases

(2) The main drawback of Asynchronous counters is their low speed as clock is propagated through a number of flip-flops

(3) Synchronous counter flip-flops can never be clocked simultaneously

(4) A counter in which the maximum number of states can be changed is called full modulus counter

[Question ID = 3351][Question Description = 198_88_ETS_SEP22_S1_Q98]
1. 1 [Option ID = 13401]
2. 2 [Option ID = 13402]
3. 3 [Option ID = 13403]
4. 4 [Option ID = 13404]

4) Read the following paragraph and answer the questions from 96–100

A digital counter is a set of flipflops whose states change in response to the pulses applied at Input. Counters can be asynchronous counters or synchronous counters. A counter is an example of a state machine; the number of states is called the modulus. Two basic types of state machines are the Moore and the Mealy. In Moore machine, the combinational logic is a gate array with outputs that determine the next state of the flip-flops in the memory. For Mealy machine, the present state affects just as in Moore machine but in addition, the inputs also affect the outputs.

In a 4-bit asynchronous binary counter, each D flip-flop is negative edge-triggered and has a propagation delay for 10 nanoseconds. What is the highest frequency allowed for the counter to avoid problems due to propagation delay?

(1) 40 MHz

(2) 80 MHz

(3) 25 MHz

(4) 50 MHz

[Question ID = 3352][Question Description = 199_88_ETS_SEP22_S1_Q99]
1. 1 [Option ID = 13405]
2. 2 [Option ID = 13406]
3. 3 [Option ID = 13407]
4. 4 [Option ID = 13408]

5)   Read the following paragraph and answer the questions from 96–100

A digital counter is a set of flipflops whose states change in response to the pulses applied at Input. Counters can be asynchronous counters or synchronous counters. A counter is an example of a state machine; the number of states is called the modulus. Two basic types of state machines are the Moore and the Mealy. In Moore machine, the combinational logic is a gate array with outputs that determine the next state of the flip-flops in the memory. For Mealy machine, the present state affects just as in Moore machine but in addition, the inputs also affect the outputs.

Which of the following statements is not correct about Glitch?

(1)   Strobing is advisable to eliminate glitch

(2)   Glitch causes more problems with synchronous counters than with asynchronous counters

(3)   A glitch is a voltage spike of short duration usually unwanted

(4)   A glitch is caused by behaviour of the logic circuit and can occur in both sequential as well as combinational circuits

[Question ID = 3353][Question Description = 200_88_ETS_SEP22_S1_Q100]
1. 1 [Option ID = 13409]
2. 2 [Option ID = 13410]
3. 3 [Option ID = 13411]
4. 4 [Option ID = 13412]

Topic:- 22 GP_29SEPT22_SH1_S2_A

1)

Based on the data in the table, answer the five questions that follow

The following table gives the sale figures of five different types of batteries (in thousands) sold by a company during the years 2015 to 2021.

Year-wise Sale of Batteries

Year	Types Of Batteries Sold (in thousands)				
	4AH	7AH	32AH	35AH	55AH
2015	75	144	114	102	108
2016	90	126	102	84	126
2017	96	114	75	105	135
2018	105	90	150	90	75
2019	90	75	135	75	90
2020	105	60	165	45	120
2021	115	85	160	100	145

What was the approximate percentage increase in the sales of 55AH batteries in 2021 compared to that in 2015?

1. 28 %
2. 31 %
3. 33 %
4. 34 %

निम्नलिखित तालिका में वर्ष 2015 से 2021 तक के दौरान एक कंपनी द्वारा बिक्री की गई विभिन्न प्रकार की बैटरियाँ (हजार में) के बिक्री - आंकड़े दिए गए हैं। इस तालिका के आंकड़ों के आधार पर पांच प्रश्नों के उत्तर दीजिए :

बैटरियों की वर्ष - वार बिक्री :

वर्ष	बिक्री की गई बैटरियों के प्रकार (हजार में)				
	4 ए एच	7 ए एच	32 ए एच	35 ए एच	55 ए एच
2015	75	144	114	102	108
2016	90	126	102	84	126
2017	96	114	75	105	135
2018	105	90	150	90	75
2019	90	75	135	75	90
2020	105	60	165	45	120
2021	115	85	160	100	145

2015 की तुलना में 2021 में 55 ए एच बैटरियों की बिक्री में लगभग प्रतिशत वृद्धि क्या थी ?

1. 28 %
2. 31 %
3. 33 %
4. 34 %

[Question ID = 4374][Question Description = 101_81_GP6_SEP22_S2_Q01]
1. 1 [Option ID = 17493]
2. 2 [Option ID = 17494]
3. 3 [Option ID = 17495]
4. 4 [Option ID = 17496]

2)

Based on the data in the table, answer the five questions that follow

The following table gives the sale figures of five different types of batteries (in thousands) sold by a company during the years 2015 to 2021.

Year-wise Sale of Batteries

Year	Types Of Batteries Sold (in thousands)				
	4AH	7AH	32AH	35AH	55AH
2015	75	144	114	102	108
2016	90	126	102	84	126
2017	96	114	75	105	135
2018	105	90	150	90	75
2019	90	75	135	75	90
2020	105	60	165	45	120
2021	115	85	160	100	145

The total sales of all the seven years is maximum for which type of battery?

1. 4AH
2. 7AH
3. 32AH
4. 35AH

निम्नलिखित तालिका में वर्ष 2015 से 2021 तक के दौरान एक कंपनी द्वारा बिक्री की गई विभिन्न प्रकार की बैटरियों (हजार में) के बिक्री - आंकड़े दिए गए हैं। इस तालिका के आंकड़ों के आधार पर पांच प्रश्नों के उत्तर दीजिए :

बैटरियों की वर्ष - वार बिक्री :

वर्ष	बिक्री की गई बैटरियों के प्रकार (हजार में)				
	4 ए एच	7 ए एच	32 ए एच	35 ए एच	55 ए एच
2015	75	144	114	102	108
2016	90	126	102	84	126
2017	96	114	75	105	135
2018	105	90	150	90	75
2019	90	75	135	75	90
2020	105	60	165	45	120
2021	115	85	160	100	145

इन सभी सात वर्षों में किस प्रकार की बैटरी की कुल बिक्री सर्वाधिक थी ?

1. 4 ए एच
2. 7 ए एच
3. 32 ए एच
4. 35 ए एच

[Question ID = 4375][Question Description = 102_81_GP6_SEP22_S2_Q02]

1. 1 [Option ID = 17497]
2. 2 [Option ID = 17498]
3. 3 [Option ID = 17499]
4. 4 [Option ID = 17500]

3)

Based on the data in the table, answer the five questions that follow

The following table gives the sale figures of five different types of batteries (in thousands) sold by a company during the years 2015 to 2021.

Year-wise Sale of Batteries

Year	Types Of Batteries Sold (in thousands)				
	4AH	7AH	32AH	35AH	55AH
2015	75	144	114	102	108
2016	90	126	102	84	126
2017	96	114	75	105	135
2018	105	90	150	90	75
2019	90	75	135	75	90
2020	105	60	165	45	120
2021	115	85	160	100	145

What is the difference in the number of 35AH batteries sold in 2016 and 2020?

1. 24000
2. 28000
3. 35000
4. 39000

निम्नलिखित तालिका में वर्ष 2015 से 2021 तक के दौरान एक कंपनी द्वारा बिक्री की गई विभिन्न प्रकार की बैटरियों (हजार में) के बिक्री - आंकड़े दिए गए हैं। इस तालिका के आंकड़ों के आधार पर पांच प्रश्नों के उत्तर दीजिए :

बैटरियों की वर्ष - वार बिक्री :

वर्ष	बिक्री की गई बैटरियों के प्रकार (हजार में)				
	4 ए एच	7 ए एच	32 ए एच	35 ए एच	55 ए एच
2015	75	144	114	102	108
2016	90	126	102	84	126
2017	96	114	75	105	135
2018	105	90	150	90	75
2019	90	75	135	75	90
2020	105	60	165	45	120
2021	115	85	160	100	145

वर्ष 2016 और 2020 में 35 ए एच बैटरियों की बिक्री संख्या में क्या अंतर है ?

1. 24000
2. 28000
3. 35000
4. 39000

[Question ID = 4376][Question Description = 103_81_GP6_SEP22_S2_Q03]
1. 1 [Option ID = 17501]
2. 2 [Option ID = 17502]
3. 3 [Option ID = 17503]
4. 4 [Option ID = 17504]

4)

Based on the data in the table, answer the five questions that follow

The following table gives the sale figures of five different types of batteries (in thousands) sold by a company during the years 2015 to 2021.

Year-wise Sale of Batteries

Year	Types Of Batteries Sold (in thousands)				
	4AH	7AH	32AH	35AH	55AH
2015	75	144	114	102	108
2016	90	126	102	84	126
2017	96	114	75	105	135
2018	105	90	150	90	75
2019	90	75	135	75	90
2020	105	60	165	45	120
2021	115	85	160	100	145

The percentage of 4AH batteries sold in a given year to the total number of batteries sold in that same year was maximum in the year:

1. 2017
2. 2018
3. 2019
4. 2020

निम्नलिखित तालिका में वर्ष 2015 से 2021 तक के दौरान एक कंपनी द्वारा बिक्री की गई विभिन्न प्रकार की बैटरियों (हजार में) के बिक्री - आंकड़े दिए गए हैं। इस तालिका के आंकड़ों के आधार पर पांच प्रश्नों के उत्तर दीजिए :

बैटरियों की वर्ष - वार बिक्री :

वर्ष	बिक्री की गई बैटरियों के प्रकार (हजार में)				
	4 ए एच	7 ए एच	32 ए एच	35 ए एच	55 ए एच
2015	75	144	114	102	108
2016	90	126	102	84	126
2017	96	114	75	105	135
2018	105	90	150	90	75
2019	90	75	135	75	90
2020	105	60	165	45	120
2021	115	85	160	100	145

किसी दिए गए वर्ष में बैटरियों की बिक्री की कुल संख्या के साथ उसी वर्ष में बिक्री की गयी 4 ए एच बैटरियों का प्रतिशत किस वर्ष अधिक था ?

1. 2017
2. 2018
3. 2019
4. 2020

[Question ID = 4377][Question Description = 104_81_GP6_SEP22_S2_Q04]
1. 1 [Option ID = 17505]
2. 2 [Option ID = 17506]
3. 3 [Option ID = 17507]
4. 4 [Option ID = 17508]

5)

Based on the data in the table, answer the five questions that follow

The following table gives the sale figures of five different types of batteries (in thousands) sold by a company during the years 2015 to 2021.

Year-wise Sale of Batteries

Year	Types Of Batteries Sold (in thousands)				
	4AH	7AH	32AH	35AH	55AH
2015	75	144	114	102	108
2016	90	126	102	84	126
2017	96	114	75	105	135
2018	105	90	150	90	75
2019	90	75	135	75	90
2020	105	60	165	45	120
2021	115	85	160	100	145

In case of which type of battery there was a continuous decrease in sales from 2015 to 2020?

1. 4AH
2. 7AH
3. 32AH
4. 35AH

निम्नलिखित तालिका में वर्ष 2015 से 2021 तक के दौरान एक कंपनी द्वारा बिक्री की गई विभिन्न प्रकार की बैटरियों (हजार में) के बिक्री - आंकड़े दिए गए हैं। इस तालिका के आंकड़ों के आधार पर पांच प्रश्नों के उत्तर दीजिए :

बैटरियों की वर्ष - वार बिक्री :

वर्ष	बिक्री की गई बैटरियों के प्रकार (हजार में)				
	4 ए एच	7 ए एच	32 ए एच	35 ए एच	55 ए एच
2015	75	144	114	102	108
2016	90	126	102	84	126
2017	96	114	75	105	135
2018	105	90	150	90	75
2019	90	75	135	75	90
2020	105	60	165	45	120
2021	115	85	160	100	145

वर्ष 2015 से 2020 तक किस प्रकार की बैटरी की बिक्री में निरंतर गिरावट हुयी ?

1. 4 ए एच
2. 7 ए एच
3. 32 ए एच
4. 35 ए एच

[Question ID = 4378][Question Description = 105_81_GP6_SEP22_S2_Q05]
1. 1 [Option ID = 17509]
2. 2 [Option ID = 17510]

3. 3 [Option ID = 17511]
4. 4 [Option ID = 17512]

Topic:- 22 GP_29SEPT22_SH1_S2_B

1)

Which scheme of Ministry of Education, Government of India, uses Artificial Intelligence to make learning more personalised and customised, as per requirements of the learners?

1. NEAT
2. NEET
3. SWAYAM
4. SWAYAM PRABHA

शिक्षा मंत्रालय, भारत सरकार की कौन सी योजना शिक्षार्थियों की आवश्यकताओं के अनुसार अधिगम को अधिक वैयक्तिक और विद्यार्थी अनुकूल बनाने के लिए कृत्रिम बुद्धिमत्ता का प्रयोग करती है ?

1. एन ई ए टी
2. एन ई ई टी
3. स्वयम (SWAYAM)
4. स्वयम प्रभा (SWAYAMPRABHA)

[Question ID = 4379][Question Description = 106_81_GP6_SEP22_S2_Q06]
1. 1 [Option ID = 17513]
2. 2 [Option ID = 17514]
3. 3 [Option ID = 17515]
4. 4 [Option ID = 17516]

2)

Upon completion of academic programmes (Graduation), what outcomes should the students have attained?

1. Programme Education Objectives/ Programme outcomes
2. Lesson outcomes
3. Course outcomes
4. Unit/Chapter outcomes

अकादमिक कार्यक्रमों (स्नातक) के पूरा होने पर, विद्यार्थियों को क्या परिणाम प्राप्त होने चाहिए ?

1. कार्यक्रम शिक्षा उद्देश्य / कार्यक्रम परिणाम
2. पाठ परिणाम
3. पाठ्यक्रम परिणाम
4. यूनिट/ अध्याय परिणाम

[Question ID = 4380][Question Description = 107_81_GP6_SEP22_S2_Q07]
1. 1 [Option ID = 17517]
2. 2 [Option ID = 17518]
3. 3 [Option ID = 17519]
4. 4 [Option ID = 17520]

3)

Given below are two statements, one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A: Teachers must encourage students to ask questions.

Reason R: Asking questions can create curiosity and develop passion for learning.

In light of the above statements, choose the ***most appropriate*** answer from the options given below

1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

नीचे दो कथन दिए गए हैं : एक को अभिकथन (A) और दूसरे को कारण (R) कहा गया है।

अभिकथन (A) : शिक्षकों को विद्यार्थियों को प्रश्न पूछने के लिए प्रोत्साहित करना चाहिए।

कारण (R) : प्रश्न पूछने से जिज्ञासा सृजित होती है और अधिगम के लिए उत्साह विकसित होता है।

उपर्युक्त कथनों के आलोक में निम्नांकित विकल्पों में से सही उत्तर चुनें :

1. (A) और (R) दोनों सही हैं और (R), (A) की सही व्याख्या है।
2. (A) और (R) दोनों सही हैं परन्तु (R), (A) की सही व्याख्या नहीं है।
3. (A) सही है परन्तु (R) सही नहीं है।
4. (A) सही नहीं है परन्तु (R) सही है।

[Question ID = 4381][Question Description = 108_81_GP6_SEP22_S2_Q08]
1. 1 [Option ID = 17521]
2. 2 [Option ID = 17522]
3. 3 [Option ID = 17523]
4. 4 [Option ID = 17524]

4)

Which of the following model is used for development of e-content for MOOCs on SWAYAM?

1. Four Quadrant
2. Two Quadrant
3. Flipped Classroom
4. Bloom's Taxonomy

स्वयम (SWAYAM) पर मूक्स (MOOCs) के लिए ई-विषयवस्तु के विकास के लिए निम्न में से किस मॉडल का प्रयोग होता है ?

1. चार चतुष्क
2. दो चतुष्क
3. फ्लिप्ड कक्षा
4. ब्लूम का वर्गीकरण विज्ञान

[Question ID = 4382][Question Description = 109_81_GP6_SEP22_S2_Q09]
1. 1 [Option ID = 17525]
2. 2 [Option ID = 17526]
3. 3 [Option ID = 17527]
4. 4 [Option ID = 17528]

5)

In order to develop a video for MOOC, how much portion of some copyrighted video is allowed to be used as per the fair use guidelines?

1. Upto 10% or 10 minutes, whichever is less.
2. Upto 10% or 3 minutes, whichever is less.
3. Upto 20% or 10 minutes, whichever is less.
4. Upto 30% or 3 minutes, whichever is less.

मूक (MOOC) के लिए कोई वीडियो बनाने के लिए, उचित प्रयोग दिशानिर्देशों के अनुसार, किसी प्रतिलिप्याधिकारित वीडियो के कितने हिस्से का प्रयोग करने की अनुमति है ?

1. 10% तक, या 10 मिनट, जो भी कम हो।
2. 10% तक, या 3 मिनट, जो भी कम हो।
3. 20% तक, या 10 मिनट, जो भी कम हो।
4. 30% तक, या 3 मिनट, जो भी कम हो।

[Question ID = 4383][Question Description = 110_81_GP6_SEP22_S2_Q10]
1. 1 [Option ID = 17529]
2. 2 [Option ID = 17530]
3. 3 [Option ID = 17531]
4. 4 [Option ID = 17532]

6)

When the subjects of a research change or improve their behaviour, not due to changes in experimental stimulus, it is called

1. The Hawthorne effect
2. The Glenn effect
3. The Fischer effect
4. The Kerlinger effect

जब किसी शोध के विषयों के व्यवहार में परिवर्तन या सुधार प्रयोगात्मक उद्दीपकों में परिवर्तन के कारण नहीं होता है, तो उसे कहा जाता है :-

1. हावथोर्न प्रभाव
2. ग्लेन प्रभाव
3. फिशर प्रभाव
4. करलिंगर प्रभाव

[Question ID = 4384][Question Description = 111_81_GP6_SEP22_S2_Q11]
1. 1 [Option ID = 17533]
2. 2 [Option ID = 17534]
3. 3 [Option ID = 17535]
4. 4 [Option ID = 17536]

7)

The advantages of research based on field experiments are:

A. A strong external validity

B. Subjects behave normally and naturally.

C. The experiment takes place in a natural setting.

D. Generation of primary data

E. Non-requirement of elaborate logistics

Choose the *correct* answer from the options given below:

1. A, B and C only
2. B, C and D only
3. C, D and E only
4. A, C and E only

क्षेत्र में प्रयोगों पर आधारित शोध के लाभ हैं :-

A. एक प्रबल बाह्य वैधता।

B. विषय सामान्य और स्वाभाविक रूप से व्यवहार करते हैं।

C. प्रयोग प्राकृतिक व्यवस्था में होता है।

D. प्राथमिक आंकड़ों का सृजन।

E. विस्तृत संभार-तंत्र की आवश्यकता नहीं होती।

नीचे दिए गए विकल्पों में से सही उत्तर चुनें :

1. केवल A, B और C
2. केवल B, C और D
3. केवल C, D और E
4. केवल A, C और E

[Question ID = 4385][Question Description = 112_81_GP6_SEP22_S2_Q12]
1. 1 [Option ID = 17537]
2. 2 [Option ID = 17538]
3. 3 [Option ID = 17539]
4. 4 [Option ID = 17540]

8)

Hypothesis, that is alternative to null hypothesis, is represented as

1. H_0
2. H_1
3. H_{alt}
4. $H_{\neq 0}$

परिकल्पना, जो शून्य परिकल्पना का विकल्प है, को दर्शाया जाता है

1. H_0
2. H_1
3. H_{alt}
4. $H_{\neq 0}$

1. 1 [Option ID = 17541]
2. 2 [Option ID = 17542]
3. 3 [Option ID = 17543]
4. 4 [Option ID = 17544]

9)

What is SCOPUS?

1. Software to prepare Ph.D thesis
2. Database containing abstracts and citations of academic journals
3. Agency to fund research and development
4. Plagiarism checking software

स्कोपस (SCOPUS) क्या है ?

1. पी.एच.डी. शोध ग्रंथ तैयार करने का सॉफ्टवेयर
2. डाटाबेस जिसमें शैक्षिक पत्रिकाओं के सार एवं उद्धरण होते हैं
3. शोध और विकास के वित्तपोषण के लिए अभिकरण
4. साहित्यिक चोरी की जाँच करने वाला सॉफ्टवेयर

1. 1 [Option ID = 17545]
2. 2 [Option ID = 17546]
3. 3 [Option ID = 17547]
4. 4 [Option ID = 17548]

10)

The Social Science research which is data-based, has been associated with

1. Authoritarian mode
2. Positivist philosophy
3. Network theory
4. Phenomenology

वह सामाजिक विज्ञान शोध, जो आंकड़ा-आधारित होता है, निम्नलिखित से संबद्ध है :-

1. सत्तावादी पद्धति
2. प्रत्यक्षवादी दर्शन
3. नेटवर्क सिद्धांत
4. दृश्यघटना विज्ञान

1. 1 [Option ID = 17549]
2. 2 [Option ID = 17550]
3. 3 [Option ID = 17551]
4. 4 [Option ID = 17552]

11)

The modern communication revolution is propelled by

    1. Cold war propaganda
    2. International commerce
    3. Technological convergence
    4. Change in political systems

आधुनिक सम्प्रेषण क्रांति किसके द्वारा अभिप्रेरित है ?

    1. शीत युद्ध का प्रोपेगैंडा
    2. अंतर्राष्ट्रीय वाणिज्य
    3. प्रौद्योगिकीय अभिसरण
    4. राजनीतिक प्रणाली में परिवर्तन

[Question ID = 4389][Question Description = 116_81_GP6_SEP22_S2_Q16]
1. 1 [Option ID = 17553]
2. 2 [Option ID = 17554]
3. 3 [Option ID = 17555]
4. 4 [Option ID = 17556]

12)

Effective classroom communication will enable

A. Efficient teaching

B. Interest in learning

C. Minimal assessment

D. Interaction between teachers and students

E. Teacher-centric behaviour

Choose the **correct** answer from the options given below:

    1. A, B and C only
    2. B, C, D and E only
    3. C, D and E only
    4. A, B and D only

कक्षा में प्रभावी सम्प्रेषण किसमें सक्षम करेगा :

A. कुशल अध्यापन

B. सीखने में रुचि

C. अल्पतम मूल्यांकन

D. शिक्षकों और विद्यार्थियों के बीच अन्योन्य क्रिया

E. अध्यापक- केंद्रित व्यवहार

नीचे दिए गए विकल्पों में से सही उत्तर चुनें :

1. केवल A, B और C
2. केवल B, C, D और E
3. केवल C, D और E
4. केवल A, B और D

[Question ID = 4390][Question Description = 117_81_GP6_SEP22_S2_Q17]
1. 1 [Option ID = 17557]
2. 2 [Option ID = 17558]
3. 3 [Option ID = 17559]
4. 4 [Option ID = 17560]

13)
Which of the following are barriers to understand the communicated messages?

A. Emotional quotient

B. Jargon

C. Personal space

D. Pre-judgement

E. Cultural background

Choose the **correct** answer from the options given below:

1. A, B and C only
2. B, D and E only
3. C, D and E only
4. B, C and D only

निम्नलिखित में से कौन से सम्प्रेषित संदेशों को समझने में अवरोधक हैं ?

A. संवेदात्मक-लब्धि

B. अनर्गल

C. वैयक्तिक स्थान

D. पूर्व-निर्णय

E. सांस्कृतिक पृष्ठभूमि

नीचे दिए गए विकल्पों में से सही उत्तर चुनें :

1. केवल A, B और C
2. केवल B, D और E
3. केवल C, D और E
4. केवल B, C और D

[Question ID = 4391][Question Description = 118_81_GP6_SEP22_S2_Q18]
1. 1 [Option ID = 17561]
2. 2 [Option ID = 17562]
3. 3 [Option ID = 17563]
4. 4 [Option ID = 17564]

14)

Given below are two statements

Statement I: Knowledge is a form of cultural capital for all practical purposes.

Statement II: Communication media make cultural capital a form of illimitable property.

In light of the above statements, choose the **most appropriate** answer from the options given below

1. Both Statement I and Statement II are correct
2. Both Statement I and Statement II are incorrect
3. Statement I is correct but Statement II is incorrect
4. Statement I is incorrect but Statement II is correct

नीचे दो कथन दिए गए हैं :

कथन - I : ज्ञान सभी व्यावहारिक प्रयोजनों के लिए सांस्कृतिक पूंजी का एक रूप है।

कथन - II : सम्प्रेषण मीडिया, सांस्कृतिक पूंजी को एक प्रकार की असीमित सम्पत्ति बनाता है।

उपर्युक्त कथनों के आलोक में निम्नलिखित विकल्पों में से सही उत्तर चुनें :

1. कथन I और II दोनों सही हैं।
2. कथन I और II दोनों गलत हैं।
3. कथन I सही है , किन्तु कथन II गलत है।
4. कथन I गलत है , किन्तु कथन II सही है।

[Question ID = 4392][Question Description = 119_81_GP6_SEP22_S2_Q19]
1. 1 [Option ID = 17565]
2. 2 [Option ID = 17566]
3. 3 [Option ID = 17567]
4. 4 [Option ID = 17568]

15)

Match **List I** with **List II**

List I	List II
Concept of presentation	Characteristic
A. Text	I. Order of signification
B. Discourse	II. Subjective invention
C. Connotation	III. Micro data
D. Myth	IV. Macro exchange

Choose the **correct** answer from the options given below:

1. A - I, B - II, C - III, D - IV
2. A - II, B - III, C - IV, D - I
3. A - III, B - IV, C - I, D - II
4. A - IV, B - I, C - II, D - III

सूची -I को सूची -II से सुमेलित कीजिए :

सूची -I	सूची -II
प्रस्तुतीकरण की अवधारणा	विशेषताएं
A. पाठ	I. महत्वीकरण का क्रम
B. विमर्श	II. आत्म-निष्ठ खोज
C. गुणार्थ	III. माइक्रो-डेटा
D. मिथक	IV. बृहत आदान-प्रदान

नीचे दिए गए विकल्पों में से सही उत्तर चुनिए :

1. A - I, B - II, C - III, D - IV
2. A - II, B -III, C - IV, D - I
3. A -III, B - IV, C -I, D - II
4. A -IV, B - I, C - II, D -III

[Question ID = 4393][Question Description = 120_81_GP6_SEP22_S2_Q20]
1. 1 [Option ID = 17569]
2. 2 [Option ID = 17570]
3. 3 [Option ID = 17571]
4. 4 [Option ID = 17572]

16)

Choose the set of numbers, similar to the set (31, 19, 41) out of the following:

A. (27, 29, 47)

B. (23, 34, 49)

C. (29, 16, 41)

D. (29, 17, 37)

E. (23, 37, 49)

Choose the **correct** answer from the options given below:

1. A, C and E only
2. A and B only
3. B and D only
4. D only

निम्नलिखित समुच्चयों में से समुच्चय (31,19,41) के समान संख्याओं के समुच्चय को चुनिए :-

A. (27, 29, 47)

B. (23, 34, 49)

C. (29, 16, 41)

D. (29, 17, 37)

E. (23, 37, 49)

नीचे दिए गए विकल्पों में से सही उत्तर चुनें :

1. केवल A, C और E
2. केवल A और B
3. केवल B और D
4. केवल D

[Question ID = 4394][Question Description = 121_81_GP6_SEP22_S2_Q21]
1. 1 [Option ID = 17573]
2. 2 [Option ID = 17574]
3. 3 [Option ID = 17575]
4. 4 [Option ID = 17576]

17)

Unscramble the strings below to create a meaningful word and then find the odd one out:

A. EIWNTR

B. UMRSME

C. PIGRSN

D. LCUOD

Choose the **correct** answer from the options given below:

1. A only
2. B only
3. C only
4. D only

नीचे दिए गए सूत्र को इस प्रकार सुलझाएँ कि अर्थपूर्ण शब्द बने तथा तदुपरांत विषम को ढूँढें :-

A. EIWNTR

B. UMRSME

C. PIGRSN

D. LCUOD

नीचे दिए गए विकल्पों में से सही उत्तर चुनें :

1. केवल A
2. केवल B
3. केवल C
4. केवल D

[Question ID = 4395][Question Description = 122_81_GP6_SEP22_S2_Q22]
1. 1 [Option ID = 17577]
2. 2 [Option ID = 17578]
3. 3 [Option ID = 17579]
4. 4 [Option ID = 17580]

18)

What shall be the value when 0.07 is divided by 350?

1. 0.0002
2. 0.002
3. 0.02
4. 0.00002

जब 0.07 को 350 से भाग किया जाएगा तो क्या मान प्राप्त होगा ?

1. 0.0002
2. 0.002
3. 0.02
4. 0.00002

19)

Six persons went to a hotel for a dinner. Five of them spent Rs 150 each on their meals, while the sixth person spent Rs 80 more than the average expenditure of all the six persons. What is the total money spent by all the six persons?

1. 996
2. 999
3. 1000
4. 1001

छह लोग रात्रि भोजन के लिए होटल में जाते हैं। उनमें पाँच व्यक्तियों में से प्रत्येक अपने भोजन पर ₹150 खर्च करता है। जबकि छठा व्यक्ति सभी छह व्यक्तियों के औसत खर्च से ₹80 अधिक खर्च करता है। सभी छह व्यक्तियों द्वारा कुल कितनी धन राशि खर्च की गई ?

1. ₹ 996
2. ₹ 999
3. ₹ 1000
4. ₹ 1001

[Question ID = 4397][Question Description = 124_81_GP6_SEP22_S2_Q24]

1. 1 [Option ID = 17585]
2. 2 [Option ID = 17586]
3. 3 [Option ID = 17587]
4. 4 [Option ID = 17588]

20)

The selling price of 30 fans is equal to the purchase price of 25 fans. What is the profit or loss in percentage?

1. A gain of $16\frac{2}{3}\%$
2. A loss of 15%
3. A loss of $16\frac{2}{3}\%$
4. No gain, no loss

30 पंखों का बिक्री मूल्य 25 पंखों के खरीद मूल्य के बराबर है। लाभ अथवा हानि प्रतिशत में कितनी है ?

1. $16\frac{2}{3}\%$ लाभ
2. 15% हानि
3. $16\frac{2}{3}\%$ हानि
4. न हानि, न लाभ

[Question ID = 4398][Question Description = 125_81_GP6_SEP22_S2_Q25]

1. 1 [Option ID = 17589]
2. 2 [Option ID = 17590]
3. 3 [Option ID = 17591]
4. 4 [Option ID = 17592]

21)

In Classical Square of Opposition, if 'Some S is P' is given as true then which of the following could be immediately inferred from it?

A. 'Some S is not P' is false

B. 'Some S is not P' is true

C. 'No S is P' is false

D. 'All S is P' is undetermined

E. 'Some S is not P' is undetermined

Choose the **correct** answer from the options given below:

1. A, C and D only
2. C, D and E only
3. B, C and D only
4. B and C only

विरोधों के शास्त्रीय चतुर्भुज में 'कुछ S, P होते हैं', को यदि सही माना गया हो तो निम्न में से किसको प्रत्यक्ष रूप से अनुमानित किया जा सकता है ?

A. 'कुछ S, P नहीं है', गलत है

B. 'कुछ S, P नहीं है', सत्य है

C. 'कोई S, P नहीं हैं', गलत है

D. 'सभी S, P है', अनिर्धारित है

E. 'कुछ S, P नहीं है', अनिर्धारित है

नीचे दिए गए विकल्पों में से सही उत्तर चुनें :

1. केवल A, C और D
2. केवल C, D और E
3. केवल B, C और D
4. केवल B और C

[Question ID = 4399][Question Description = 126_81_GP6_SEP22_S2_Q26]
1. 1 [Option ID = 17593]
2. 2 [Option ID = 17594]
3. 3 [Option ID = 17595]
4. 4 [Option ID = 17596]

22)

A fallacy in which the conclusion is stated or assumed within one of the premises is known severally as:

A. *Petitio Principii*

B. Irrelevant Conclusion

C. Begging the Question

D. Fallacy of Composition

E. Circular argument

Choose the **correct** answer from the options given below:

1. A, D and E only
2. C and D only
3. B, C and E only
4. A, C and E only

कोई तर्क दोष जिसमें निष्कर्ष को एक आधार वाक्य के रूप के अंतर्गत रेखांकित किया गया हो अथवा माना गया हो उसे विभिन्न प्रकारों से क्या कहा जाता है।

A. पिटिशियो प्रिंसिपी

B. अप्रासंगिक निष्कर्ष

C. आत्माश्रय दोष

D. संयोजन का तर्क-दोष

E. चक्रक दोष

1. केवल A, D और E
2. केवल C और D
3. केवल B, C और E
4. केवल A, C और E

[Question ID = 4400][Question Description = 127_81_GP6_SEP22_S2_Q27]
1. 1 [Option ID = 17597]
2. 2 [Option ID = 17598]
3. 3 [Option ID = 17599]
4. 4 [Option ID = 17600]

23)

Analogical Arguments are:

1. Deductive in nature
2. Inductive in nature
3. Valid arguments but fallacious
4. Invalid arguments

सदृशमूलक तर्क हैं :

   1. निगमात्मक प्रकृति रुपी
   2. आगात्मक प्रकृति रुपी
   3. वैध परंतु दोषयुक्त तर्क
   4. अवैध तर्क

[Question ID = 4401][Question Description = 128_81_GP6_SEP22_S2_Q28]
1. 1 [Option ID = 17601]
2. 2 [Option ID = 17602]
3. 3 [Option ID = 17603]
4. 4 [Option ID = 17604]

24)
Given below are two statements, one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A: According to Classical Indian School of Logic (Nyāya), it is desirable but not necessary to offer an example in a syllogistic argument or inference.

Reason R: Example shows that there is at least one existent object or case in the world in which the middle and major terms co-exist.

In light of the above statements, choose the *most appropriate* answer from the options given below

   1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
   2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**
   3. **A** is correct but **R** is not correct
   4. **A** is not correct but **R** is correct

नीचे दो कथन दिए गए हैं : एक को अभिकथन (A) और दूसरे को तर्क (R) कहा गया है।

अभिकथन (A) : शास्त्रीय भारतीय न्याय मत के अनुसार किसी न्याय वाक्य अथवा अनुमान का उदाहरण देना वांछनीय है, किंतु अनिवार्य नहीं।

कारण (R) : उदाहरण यह दर्शाता है कि कम से कम एक अस्तित्ववान वस्तु या सांसारिक स्थिति मौजूद है जिसमें मध्य पद और प्रमुख पद सह-विद्यमान हैं।

उपर्युक्त कथनों के आलोक में निम्नांकित विकल्पों में से सही उत्तर चुनें :

   1. (A) और (R) दोनों सही हैं और (R), (A) की सही व्याख्या है।
   2. (A) और (R) दोनों सही हैं परन्तु (R), (A) की सही व्याख्या नहीं है।
   3. (A) सही है परन्तु (R) सही नहीं है।
   4. (A) सही नहीं है परन्तु (R) सही है।

[Question ID = 4402][Question Description = 129_81_GP6_SEP22_S2_Q29]
1. 1 [Option ID = 17605]
2. 2 [Option ID = 17606]
3. 3 [Option ID = 17607]
4. 4 [Option ID = 17608]

25)

An American is told by his friend that Asian buffalo is like bison in such and such respects. When the American visits Asia and comes across a buffalo, he comes to know that the animal seen by him is buffalo. Which of the following means of knowledge (pramāṇa) is used in this instance?

1. Postulation (Arthāpatti)
2. Comparison (Upamāna)
3. Perception (Pratyakṣa)
4. Verbal Testimony (Śabda)

एक अमेरीकी को उसके मित्र द्वारा बताया गया कि एक एशियाई भैंस इन और इन सन्दर्भों में बाइसन (BISON) की तरह होता है। जब इस अमेरीकी ने एशिया की यात्रा की और वह भैंस के सम्मुख आया तो उसे यह पता चला कि उसने जिस प्राणी को देखा, वह भैंस है। निम्नलिखित में से किस ज्ञान माध्यम (प्रमाण) का इस्तेमाल उसके द्वारा उस समय किया गया ?

1. अर्थापत्ती
2. उपमान
3. प्रत्यक्ष
4. शब्द

[Question ID = 4403][Question Description = 130_81_GP6_SEP22_S2_Q30]
1. 1 [Option ID = 17609]
2. 2 [Option ID = 17610]
3. 3 [Option ID = 17611]
4. 4 [Option ID = 17612]

26)

Given below are two statements, one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A : Static RAM is typically used for PC's main memory while Dynamic RAM is used for CPU cache.

Reason R : Static RAM is faster and more expensive than Dynamic RAM.

In light of the above statements, choose the **correct** answer from the options given below

1. Both **A** and **R** are true and **R** is the correct explanation of **A**
2. Both **A** and **R** are true but **R** is NOT the correct explanation of **A**
3. **A** is true but **R** is false
4. **A** is false but **R** is true

नीचे दो कथन दिए गए हैं : एक को अभिकथन (A) और दूसरे को कारण (R) कहा गया है।

अभिकथन (A) : 'स्टेटिक रैम' का विशिष्ट रूप से उपयोग 'पी सी' की मेन मैमोरी के लिए किया जाता है जबकि "डायनेमिक रैम" सी पी यू कैशे के लिए प्रयोग की जाती है।

कारण (R) : "स्टेटिक रैम" "डायनेमिक रैम" की तुलना में अधिक तेज और महंगी होती है।

उपर्युक्त कथनों के आलोक में निम्नांकित विकल्पों में से सही उत्तर चुनें :

1. (A) और (R) दोनों सत्य हैं और (R), (A) की सही व्याख्या है।
2. (A) और (R) दोनों सत्य हैं परन्तु (R), (A) की सही व्याख्या नहीं है।
3. (A) सत्य है परन्तु (R) असत्य है।
4. (A) असत्य है परन्तु (R) सत्य है।

[Question ID = 4404][Question Description = 131_81_GP6_SEP22_S2_Q31]

1. 1 [Option ID = 17613]
2. 2 [Option ID = 17614]
3. 3 [Option ID = 17615]
4. 4 [Option ID = 17616]

27)

With respect to the Computers, what is the purpose of compressing a data file?

1. To encrypt the data
2. To occupy less storage space
3. To increase transmission time over a network
4. To allow the file to be read by a variety of applications

कम्प्यूटर के संदर्भ में एक डाटा फाइल को कम्प्रैस करने का क्या उद्देश्य होता है ?

1. डाटा को एन्क्रिप्ट करने के लिए
2. कम स्टोरेज स्पेस घेरने के लिए
3. एक नेटवर्क पर ट्रांसमीशन टाईम में वृद्धि करने के लिए
4. एक फाइल को विभिन्न अनुप्रयोगों द्वारा पढ़े जाने के लिए अनुमति देना

[Question ID = 4405][Question Description = 132_81_GP6_SEP22_S2_Q32]
1. 1 [Option ID = 17617]
2. 2 [Option ID = 17618]
3. 3 [Option ID = 17619]
4. 4 [Option ID = 17620]

28)

Which of the following peripheral devices are considered as only input devices?

A. Microphone

B. Projector

C. Joy Stick

D. Scanner

E. Track-ball

Choose the *correct* answer from the options given below:

1. A, C, D and E only
2. A, B, D and E only
3. B, C, D and E only
4. A, B, C and D only

निम्नलिखित पेरिफेरल डिवाइसेस में से किन्हें केवल इनपुट डिवाइसेस माना जाता है ?

A. माइक्रोफोन

B. प्रोजेक्टर

C. जॉय स्टिक

D. स्कैनर

E. ट्रैक बाल

नीचे दिए गए विकल्पों में से सही उत्तर चुनें :

1. केवल A, C, D और E
2. केवल A, B, D और E
3. केवल B, C, D और E
4. केवल A, B, C और D

[Question ID = 4406][Question Description = 133_81_GP6_SEP22_S2_Q33]
1. 1 [Option ID = 17621]
2. 2 [Option ID = 17622]
3. 3 [Option ID = 17623]
4. 4 [Option ID = 17624]

29)

A Company's word-processed daily report contains a graph from a spreadsheet. The report needs to display the most recent information from the spreadsheet. What feature should be used to insert the most up-to-date graph?

1. Copy and paste
2. Mail merge wizard
3. Automated importing
4. Linking and embedding

किसी कम्पनी की वर्ड-प्रोसेस्ड दैनिक रिपोर्ट में स्प्रैडशीट का एक ग्राफ शामिल होता है। रिपोर्ट में स्प्रैडशीट से अद्यतन सूचना को दिया जाना आवश्यक होता है। अद्यतन ग्राफ को अंतर्विष्ट करने के लिए किस गुण (फीचर) का उपयोग किया जाना चाहिए ?

1. कापी और पेस्ट
2. मेल मर्ज़ विज़र्ड
3. आटोमेटेड इम्पोर्टिंग
4. लिंकिंग और एम्बैडिंग

[Question ID = 4407][Question Description = 134_81_GP6_SEP22_S2_Q34]
1. 1 [Option ID = 17625]
2. 2 [Option ID = 17626]
3. 3 [Option ID = 17627]
4. 4 [Option ID = 17628]

30)

Which type of virus or destructive software could appear to be useful, but will actually cause damage once installed or run by a user?

1. Hoax
2. Worm
3. Trojan Horse
4. System Sector

किसी प्रयोक्ता को किस प्रकार का वायरस अथवा डैस्ट्रैक्टिव सॉफ्टवेयर उपयोगी प्रतीत होता है, लेकिन एक बार सॉफ्टवेयर इंस्टॉल करने के बाद अथवा उसे चलाने पर वास्तव में उससे डैमेज होता है

1. होक्स (HOAX)
2. वार्म (WORM)
3. ट्रायन हार्स (TROJAN HORSE)
4. सिस्टम सेक्टर (SYSTEM SECTOR)

[Question ID = 4408][Question Description = 135_81_GP6_SEP22_S2_Q35]
1. 1 [Option ID = 17629]
2. 2 [Option ID = 17630]
3. 3 [Option ID = 17631]
4. 4 [Option ID = 17632]

31)

According to Noise Pollution (Regulation and Control) Rules in India, noise (L_{eq}) in educational institutions during night time (10pm-6am) must not exceed

1. 35 dB
2. 40 dB
3. 45 dB
4. 50 dB

भारत में ध्वनि प्रदूषण (विनियम एवं नियंत्रण) नियमावली के अनुसार, शैक्षिक संस्थाओं में रात 10 बजे अपराह्न से 6 बजे पूर्वाह्न तक की अवधि में ध्वनि (L_{eq}) का स्तर निम्नलिखित से अधिक नहीं होना चाहिए

1. 35 dB
2. 40 dB
3. 45 dB
4. 50 dB

[Question ID = 4409][Question Description = 136_81_GP6_SEP22_S2_Q36]
1. 1 [Option ID = 17633]
2. 2 [Option ID = 17634]
3. 3 [Option ID = 17635]
4. 4 [Option ID = 17636]

32)

The percentage increase in carbon dioxide concentration in atmosphere from pre-industrial times is approximately

1. 55 %
2. 50 %
3. 74 %
4. 62 %

औद्योगिक काल से पहले से वातावरण में कार्बन डाइऑक्साइड सांद्रता में प्रतिशत वृद्धि लगभग है :

1. 55%
2. 50%
3. 74%
4. 62%

[Question ID = 4410][Question Description = 137_81_GP6_SEP22_S2_Q37]
1. 1 [Option ID = 17637]
2. 2 [Option ID = 17638]
3. 3 [Option ID = 17639]
4. 4 [Option ID = 17640]

33)
The highest nonzero dose at which no toxic effect is observed in a study on animals is called

1. LD_{50}
2. NOAEL
3. LOAEL
4. NOEFF

अधिकतम गैर शून्य मात्रा जिस पर कोई भी विषाक्त प्रभाव जानवरों पर अध्ययन में नहीं देखा जाता है, निम्नलिखित कही जाती है :

1. LD_{50}
2. NOAEL
3. LOAEL
4. NOEFF

[Question ID = 4411][Question Description = 138_81_GP6_SEP22_S2_Q38]
1. 1 [Option ID = 17641]
2. 2 [Option ID = 17642]
3. 3 [Option ID = 17643]
4. 4 [Option ID = 17644]

34)
Given below are two statements, one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A: Hybrid Electric Vehicles' (HEVs) fuel running cost is lesser than Electric Vehicles (EVs).

Reason R: Hybrid Electric Vehicles have both an internal combustion engine and an onboard electric power generation system.

In light of the above statements, choose the **most appropriate** answer from the options given below

1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

नीचे दो कथन दिए गए हैं : एक को अभिकथन (A) और दूसरे को कारण (R) कहा गया है।

अभिकथन (A) : हाइब्रिड इलेक्ट्रिक वाहनों (HEVs) की ईंधन चालन लागत इलेक्ट्रिक वाहन (EVs) से कम है।

कारण (R) : हाइब्रिड इलेक्ट्रिक वाहन में आंतरिक दहन ईंजन और एक ऑनबोर्ड इलेक्ट्रिक विद्युत उत्पादन प्रणाली दोनों होते हैं।

उपर्युक्त कथनों के आलोक में निम्नांकित विकल्पों में से सही उत्तर चुनें :

1. (A) और (R) दोनों सही हैं और (R), (A) की सही व्याख्या है।
2. (A) और (R) दोनों सही हैं परन्तु (R), (A) की सही व्याख्या नहीं है।
3. (A) सही है परन्तु (R) सही नहीं है।
4. (A) सही नहीं है परन्तु (R) सही है।

[Question ID = 4412][Question Description = 139_81_GP6_SEP22_S2_Q39]
1. 1 [Option ID = 17645]
2. 2 [Option ID = 17646]
3. 3 [Option ID = 17647]
4. 4 [Option ID = 17648]

35)
What is the correct chronological order of sequence from older to newer of the following agreement, summit and protocols?

A. Paris Agreement

B. Montreal Protocol

C. Kyoto Protocol

D. Rio Summit

Choose the **correct** answer from the options given below

1. A, B, C, D
2. B, D, C, A
3. A, C, D, B
4. B, C, D, A

निम्लिखित समझौता, शिखर सम्मलेन एवं प्रोटोकॉलों का पुराने से नए कालानुक्रम में सही क्रम क्या है ?

A. पेरिस समझौता

B. मॉट्रियल प्रोटोकॉल

C. क्योटो प्रोटोकॉल

D. रियो शिखर सम्मेलन

नीचे दिए गए विकल्पों में से सही उत्तर चुनें :

1. A, B, C, D
2. B, D, C, A
3. A, C, D, B
4. B, C, D, A

[Question ID = 4413][Question Description = 140_81_GP6_SEP22_S2_Q40]
1. 1 [Option ID = 17649]

2. 2 [Option ID = 17650]
3. 3 [Option ID = 17651]
4. 4 [Option ID = 17652]

36)

Which of the following universities is an Institute of Eminence?

1. Central University of Gujrat, Gandhinagar
2. University of Hyderabad
3. Tezpur University
4. Jamia Millia Islamia

निम्नलिखित विश्वविद्यालयों में से कौन सा लब्धप्रतिष्ठ संस्थान है ?

1. गुजरात केन्द्रीय विश्वविद्यालय, गांधीनगर
2. हैदराबाद विश्वविद्यालय
3. तेजपुर विश्वविद्यालय
4. जामिया मिलिया इस्लामिया

[Question ID = 4414][Question Description = 141_81_GP6_SEP22_S2_Q41]
1. 1 [Option ID = 17653]
2. 2 [Option ID = 17654]
3. 3 [Option ID = 17655]
4. 4 [Option ID = 17656]

37)

Given below are two statements

Statement I: With Academic Bank of Credit facility in place, a student will be able to customize and design own degree, provided 50% of credit are from the higher education institutions awarding the degree.

Statement II: Credits once used or redeemed by a student cannot be used for any other formal purpose or course wavers.

In light of the above statements, choose the *most appropriate* answer from the options given below

1. Both Statement I and Statement II are correct
2. Both Statement I and Statement II are incorrect
3. Statement I is correct but Statement II is incorrect
4. Statement I is incorrect but Statement II is correct

नीचे दो कथन दिए गए हैं :

कथन - I : अकेडमिक बैंक ऑफ क्रेडिट सुविधा लागू होने के साथ, छात्र अपनी डिग्री को ग्राहकोनुकूल बनाने तथा डिजायन करने में सक्षम होंगे बशर्ते 50% क्रेडिट, डिग्री देने वाले उच्चतर शिक्षण संस्था से हो।

कथन - II : छात्र द्वारा क्रेडिट का उपयोग कर लेने अथवा उसे निस्तार कर लेने के बाद उसका उपयोग किसी अन्य औपचारिक उद्देश्य अथवा कोर्स से छूट के लिए नहीं किया जा सकता है।

उपर्युक्त कथनों के आलोक में निम्नलिखित विकल्पों में से सबसे उपयुक्त उत्तर चुनें :

1. कथन I और II दोनों सही हैं।
2. कथन I और II दोनों गलत हैं।
3. कथन I सही है , किन्तु कथन II गलत है।
4. कथन I गलत है , किन्तु कथन II सही है।

[Question ID = 4415][Question Description = 142_81_GP6_SEP22_S2_Q42]
1. 1 [Option ID = 17657]
2. 2 [Option ID = 17658]
3. 3 [Option ID = 17659]
4. 4 [Option ID = 17660]

38)

In a State government university or Central University, recommendation of the Selection Committee for the recruitment of the faculty is approved by the

1. Academic Council
2. Executive Council
3. Finance Committee
4. Chancellor of University

राज्य सरकार के विश्वविद्यालय या केन्द्रीय विश्वविद्यालय में, संकाय की भर्ती के लिए चयन समिति की सिफारिश को स्वीकृत निम्नलिखित द्वारा किया जाता है :

1. शैक्षिक परिषद
2. कार्यकारी परिषद
3. वित्त समिति
4. विश्वविद्यालय के कुलाधिपति

[Question ID = 4416][Question Description = 143_81_GP6_SEP22_S2_Q43]
1. 1 [Option ID = 17661]
2. 2 [Option ID = 17662]
3. 3 [Option ID = 17663]
4. 4 [Option ID = 17664]

39)

Environmental education encompasses the issues of

A. Resource Consumption

B. Environmental degradation

C. Biodiversity loss

D. Economic empowerment

E. Climate change and its impact

Choose the **correct** answer from the options given below:

1. A, B, C and D only
2. A, B, C and E only
3. B, C, D and E only
4. B and E only

पर्यावरणीय शिक्षा में निम्नलिखित मुद्दे शामिल है :
A. संसाधन उपभोग

B. पर्यावरणीय अवनति

C. जैव विविधता की हानि

D. आर्थिक सशक्तिकरण

E. जलवायु परिवर्तन एवं इसका प्रभाव

नीचे दिए गए विकल्पों में से सही उत्तर चुनें :

1. केवल A, B, C और D
2. केवल A, B, C और E
3. केवल B, C, D और E
4. केवल B और E

[Question ID = 4417][Question Description = 144_81_GP6_SEP22_S2_Q44]
1. 1 [Option ID = 17665]
2. 2 [Option ID = 17666]
3. 3 [Option ID = 17667]
4. 4 [Option ID = 17668]

40)
Given below are two statements

Statement I: The recommendations of the Radhakrishnan Commission in 1949 resemble those of Calcutta University Commission in 1917.

Statement II: The recommendations of the Mudaliar Commission in 1953 resemble those of John Sergent's post-war Educational Development Plan in 1944.

In light of the above statements, choose the *most appropriate* answer from the options given below

1. Both Statement I and Statement II are correct
2. Both Statement I and Statement II are incorrect
3. Statement I is correct but Statement II is incorrect
4. Statement I is incorrect but Statement II is correct

नीचे दो कथन दिए गए हैं :
कथन - I : 1949 में राधाकृष्णन आयोग की सिफारिशें 1917 में कलकत्ता विश्वविद्यालय आयोग की सिफारिशों के सदृश हैं।

कथन - II : 1953 में मुदलियर आयोग की सिफारिशें 1944 में जॉन सर्जेण्ट के युद्ध पश्चात शैक्षिक विकास योजना की सिफारिशों के सदृश है।

उपर्युक्त कथनों के आलोक में निम्नलिखित विकल्पों में से सही उत्तर चुनें :

1. कथन I और II दोनों सही हैं।
2. कथन I और II दोनों गलत हैं।
3. कथन I सही है , किन्तु कथन II गलत है।
4. कथन I गलत है , किन्तु कथन II सही है।

[Question ID = 4418][Question Description = 145_81_GP6_SEP22_S2_Q45]
1. 1 [Option ID = 17669]
2. 2 [Option ID = 17670]
3. 3 [Option ID = 17671]
4. 4 [Option ID = 17672]

Topic:- 22 GP_29SEPT22_SH1_S2_C

Read the given passage and answer the questions that follow

Human beings are not completely free to socially construct their own behaviour. They have a shared biological nature. The nature is remarkably uniform throughout the world, given the fact that most contemporary humans outside of Africa descended from a single relatively small group of individuals some fifty thousand years ago. This shared nature does not determine political behaviour, but it frames and limits the nature of institutions that are possible. It also means that human politics is subject to certain recurring patterns of behaviour across time and across cultures. This shared nature can be described in certain propositions like that the human beings never existed in a pre-social state.

The idea that human beings at one time existed as isolated individuals, who interacted either through anarchic violence (Hobbes) or in pacific ignorance of one another (Rousseau), is not correct. Human beings as well as their primate ancestors always lived in kin-based social groups of varying sizes. Indeed, they lived in these social units for a sufficiently long period of time that the cognitive and emotional faculties needed to promote social cooperation evolved and became hardwired in their genetic endowments. This means that a rational-choice model of collective action, in which individuals calculate that they will be better off by cooperating with one another, vastly understates the degree of social cooperation that exists in human societies and misunderstands the motives that underlie it.

The next one is the idea of natural human sociability. This is built around two principles, kin selection and reciprocal altruism. The principle of kin selection or inclusive fitness states that human beings will act altruistically toward genetic relatives (or individuals believed to be genetic relatives) in rough proportion to their shared genes. The principle of reciprocal altruism says that human beings tend to develop relationships of mutual benefit or mutual harm as they interact with other individuals over time. Reciprocal altruism, unlike kin selection, does not depend on genetic relatedness: it does, however, depend upon repeated, direct personal interaction.

The shared biological nature of humans influences

1. The division of social constructs
2. The nature of institutions in society
3. The political behaviour of people
4. The formation of social groups

निम्नलिखित उद्धरण को पढ़ें और सम्बंधित पाँच प्रश्नों के उत्तर दें।

मानवजाति अपने व्यवहार को सामाजिक तौर पर निर्माण करने के लिए पूर्ण रूप से स्वतंत्र नहीं है उनकी जैविकीय प्रकृति समान होती है, पूरे विश्व में प्रकृति एक सामान होती है इस तथ्य को देखते हुए कि अधिकांश समकालिक मानवों की उत्पत्ति अफ्रीका के बाहर एक अपेक्षाकृत छोटे समूह के द्वारा लगभग 50 हजार वर्ष पहले हुई थी। यह परस्पर प्रकृति राजनीतिक व्यवहार को निर्धारित नहीं करती है लेकिन यह संभावित संस्थाओं की प्रकृति निर्मित और सीमित करती है। इसका तात्पर्य यह है कि समय और संस्कृतियों के क्रम में मानव राजनीति व्यवहार के कुछ विशिष्ट तरीकों से विनिर्दिष्ट होती है, इस परस्पर प्रकृति को कुछ हद तक इस तरह वर्णित किया जा सकता है कि मानवजाति समाज पूर्व स्थिति से पहले अस्तित्व में नहीं था यह विचार कि मानव जाति एक समय में पृथक व्यक्ति के तौर पर अस्तित्व में थी जो आपस में अराजकतापूर्ण हिंसा (हॉब्स) द्वारा या एक दूसरे से प्रशांत अज्ञानतावश मिलते थे (रूसो) ऐसा कहना सही नहीं है। मानवजाति और उनके पुराप्राचीन पूर्वज हमेशा आपसी संबंधों के आधार पर विभिन्न आकार के सामाजिक समूहों में रहते थे। वास्तव में वे इन सामाजिक एककों में लम्बे समय तक रहे जिससे सामाजिक सहयोग के लिए आवश्यक प्रज्ञामूलक और भावनात्मक क्षमतायें विकसित हुयीं और वे अपने जीन अक्षयनिधि से दृढ़तापूर्वक जुड़ गयीं। इसका अर्थ यह हुआ कि सामूहिक कार्य का विवेकपूर्ण-विकल्प प्रतिदर्श, जिसमें एक व्यक्ति यह समझता है कि वह आपस में सहयोग करके ही बेहतर ढंग से रह सकते हैं, बहुत हद तक सामाजिक सहयोग के महत्त्व को कमतर दिखाता है, जो मानव समाज में विद्यमान होता है और जो इसके अंतर्गत निहित इरादों को ठीक से नहीं समझता है। अगला विचार प्राकृतिक मानवीय सामाजिकता का है। यह दो सिद्धांतों पर आधारित है जो रिश्तेदारों का चयन और परस्पर परोपकारिता पर निर्भर है। यह रिश्तेदार चयन या समावेशी अनुकूलता का सिद्धांत दर्शाता है कि मानवीय क्रिया की परोपकारिता जैनेटिक संबंधों की ओर (या ऐसे व्यक्ति जो जैनेटिक रूप से एक दूसरे से जुड़े हों) साधारण तौर पर उनके साझा जीन्स के समानुपाती होती है। परस्पर परोपकारिता का सिद्धांत यह कहता है कि मानव का स्वभाव आपसी सम्बंध स्थापित करने का है जो परस्पर लाभ या परस्पर हानि पर आधारित होता है जब वह समय के दौरान एक दूसरे से मिलते जुलते हैं। परस्पर परोपकारिता रिश्तेदार चयन के विपरीत जैनेटिक सम्बद्धता पर आधारित नहीं होता है हालांकि यह बार-बार प्रत्यक्ष व्यक्तिगत मेलजोल पर निर्भर है।

मानव की साझा जैविक प्रकृति किसे प्रभावित करती है ?

1. सामाजिक ताने-बाने का विभाजन
2. समाज में संस्थाओं की प्रकृति
3. लोगों का राजनितिक व्यवहार
4. सामाजिक समूहों की रचना

[Question ID = 4419][Question Description = 146_81_GP6_SEP22_S2_Q46]

1. 1 [Option ID = 17673]
2. 2 [Option ID = 17674]
3. 3 [Option ID = 17675]
4. 4 [Option ID = 17676]

Read the given passage and answer the questions that follow

Human beings are not completely free to socially construct their own behaviour. They have a shared biological nature. The nature is remarkably uniform throughout the world, given the fact that most contemporary humans outside of Africa descended from a single relatively small group of individuals some fifty thousand years ago. This shared nature does not determine political behaviour, but it frames and limits the nature of institutions that are possible. It also means that human politics is subject to certain recurring patterns of behaviour across time and across cultures. This shared nature can be described in certain propositions like that the human beings never existed in a pre-social state.

The idea that human beings at one time existed as isolated individuals, who interacted either through anarchic violence (Hobbes) or in pacific ignorance of one another (Rousseau), is not correct. Human beings as well as their primate ancestors always lived in kin-based social groups of varying sizes. Indeed, they lived in these social units for a sufficiently long period of time that the cognitive and emotional faculties needed to promote social cooperation evolved and became hardwired in their genetic endowments. This means that a rational-choice model of collective action, in which individuals calculate that they will be better off by cooperating with one another, vastly understates the degree of social cooperation that exists in human societies and misunderstands the motives that underlie it.

The next one is the idea of natural human sociability. This is built around two principles, kin selection and reciprocal altruism. The principle of kin selection or inclusive fitness states that human beings will act altruistically toward genetic relatives (or individuals believed to be genetic relatives) in rough proportion to their shared genes. The principle of reciprocal altruism says that human beings tend to develop relationships of mutual benefit or mutual harm as they interact with other individuals over time. Reciprocal altruism, unlike kin selection, does not depend on genetic relatedness: it does, however, depend upon repeated, direct personal interaction.

Human beings did not exist in a pre-social state due to

1. Social kinsfolk
2. Human politics across cultures
3. Institutional limitations
4. Absence of individual independence

निम्नलिखित उद्धरण को पढ़ें और सम्बंधित पाँच प्रश्नों के उत्तर दें।

मानवजाति अपने व्यवहार को सामाजिक तौर पर निर्माण करने के लिए पूर्ण रूप से स्वतंत्र नहीं है उनकी जैविकीय प्रकृति समान होती है, पूरे विश्व में प्रकृति एक सामान होती है इस तथ्य को देखते हुए कि अधिकांश समकालिक मानवों की उत्पत्ति अफ्रीका के बाहर एक अपेक्षाकृत छोटे समूह के द्वारा लगभग 50 हजार वर्ष पहले हुई थी। यह परस्पर प्रकृति राजनीतिक व्यवहार को निर्धारित नहीं करती है लेकिन यह संभावित संस्थाओं की प्रकृति निर्मित और सीमित करती है। इसका तात्पर्य यह है कि समय और संस्कृतियों के क्रम में मानव राजनीति व्यवहार के कुछ विशिष्ट तरीकों से विनिर्दिष्ट होती है, इस परस्पर प्रकृति को कुछ हद तक इस तरह वर्णित किया जा सकता है कि मानवजाति समाज पूर्व स्थिति से पहले अस्तित्व में नहीं था यह विचार कि मानव जाति एक समय में पृथक व्यक्ति के तौर पर अस्तित्व में थी जो आपस में अराजकतापूर्ण हिंसा (हॉब्स) द्वारा या एक दूसरे से प्रशांत अज्ञानतावश मिलते थे (रूसो) ऐसा कहना सही नही है। मानवजाति और उनके पुराप्राचीन पूर्वज हमेशा आपसी संबंधों के आधार पर विभिन्न आकार के सामाजिक समूहों में रहते थे। वास्तव में वे इन सामाजिक एककों में लम्बे समय तक रहे जिससे सामाजिक सहयोग के लिए आवश्यक प्रज्ञामूलक और भावनात्मक क्षमतायें विकसित हुयीं और वे अपने जीन अक्षयनिधि से दृढ़तापूर्वक जुड़ गयीं। इसका अर्थ यह हुआ कि सामूहिक कार्य का विवेकपूर्ण-विकल्प प्रतिदर्श, जिसमें एक व्यक्ति यह समझता है कि वह आपस में सहयोग करके ही बेहतर ढंग से रह सकते हैं, बहुत हद तक सामाजिक सहयोग के महत्त्व को कमतर दिखाता है, जो मानव समाज में विद्यमान होता है और जो इसके अंतर्गत निहित इरादों को ठीक से नहीं समझता है। अगला विचार प्राकृतिक मानवीय सामाजिकता का है। यह दो सिद्धांतों पर आधारित है जो रिश्तेदारों का चयन और परस्पर परोपकारिता पर निर्भर है। यह रिश्तेदार चयन या समावेशी अनुकूलता का सिद्धांत दर्शाता है कि मानवीय क्रिया की परोपकारिता जैनेटिक संबंधों की ओर (या ऐसे व्यक्ति जो जैनेटिक रूप से एक दूसरे से जुड़े हों) साधारण तौर पर उनके साझा जीन्स के समानुपाती होती है। परस्पर परोपकारिता का सिद्धांत यह कहता है कि मानव का स्वभाव आपसी सम्बंध स्थापित करने का है जो परस्पर लाभ या परस्पर हानि पर आधारित होता है जब वह समय के दौरान एक दूसरे से मिलते जुलते हैं। परस्पर परोपकारिता रिश्तेदार चयन के विपरीत जैनेटिक सम्बद्धता पर आधारित नहीं होता है हालांकि यह बार-बार प्रत्यक्ष व्यक्तिगत मेलजोल पर निर्भर है।

किस कारण मानव पूर्व-सामाजिक स्थिति में नहीं रहा ?

1. सामाजिक जातिवर्ग
2. समग्र संस्कृतियों में मानव राजनीति
3. संस्थागत सीमाएँ
4. व्यक्तिगत स्वतंत्रता का आभाव

[Question ID = 4420][Question Description = 147_81_GP6_SEP22_S2_Q47]
1. 1 [Option ID = 17677]
2. 2 [Option ID = 17678]
3. 3 [Option ID = 17679]
4. 4 [Option ID = 17680]

Read the given passage and answer the questions that follow

Human beings are not completely free to socially construct their own behaviour. They have a shared biological nature. The nature is remarkably uniform throughout the world, given the fact that most contemporary humans outside of Africa descended from a single relatively small group of individuals some fifty thousand years ago. This shared nature does not determine political behaviour, but it frames and limits the nature of institutions that are possible. It also means that human politics is subject to certain recurring patterns of behaviour across time and across cultures. This shared nature can be described in certain propositions like that the human beings never existed in a pre-social state.

The idea that human beings at one time existed as isolated individuals, who interacted either through anarchic violence (Hobbes) or in pacific ignorance of one another (Rousseau), is not correct. Human beings as well as their primate ancestors always lived in kin-based social groups of varying sizes. Indeed, they lived in these social units for a sufficiently long period of time that the cognitive and emotional faculties needed to promote social cooperation evolved and became hardwired in their genetic endowments. This means that a rational-choice model of collective action, in which individuals calculate that they will be better off by cooperating with one another, vastly understates the degree of social cooperation that exists in human societies and misunderstands the motives that underlie it.

The next one is the idea of natural human sociability. This is built around two principles, kin selection and reciprocal altruism. The principle of kin selection or inclusive fitness states that human beings will act altruistically toward genetic relatives (or individuals believed to be genetic relatives) in rough proportion to their shared genes. The principle of reciprocal altruism says that human beings tend to develop relationships of mutual benefit or mutual harm as they interact with other individuals over time. Reciprocal altruism, unlike kin selection, does not depend on genetic relatedness: it does, however, depend upon repeated, direct personal interaction.

From the author's point of view, the main characteristic of human society has been

1. Anarchic violence
2. Pacific ignorance of one another
3. Kinship based social groups
4. Calculated individual relations

निम्नलिखित उद्धरण को पढ़ें और सम्बंधित पाँच प्रश्नों के उत्तर दें।

मानवजाति अपने व्यवहार को सामाजिक तौर पर निर्माण करने के लिए पूर्ण रूप से स्वतंत्र नहीं है उनकी जैविकीय प्रकृति समान होती है, पूरे विश्व में प्रकृति एक सामान होती है इस तथ्य को देखते हुए कि अधिकांश समकालिक मानवों की उत्पत्ति अफ्रीका के बाहर एक अपेक्षाकृत छोटे समूह के द्वारा लगभग 50 हजार वर्ष पहले हुई थी। यह परस्पर प्रकृति राजनीतिक व्यवहार को निर्धारित नहीं करती है लेकिन यह संभावित संस्थाओं की प्रकृति निर्मित और सीमित करती है। इसका तात्पर्य यह है कि समय और संस्कृतियों के क्रम में मानव राजनीति व्यवहार के कुछ विशिष्ट तरीकों से विनिर्दिष्ट होती है, इस परस्पर प्रकृति को कुछ हद तक इस तरह वर्णित किया जा सकता है कि मानवजाति समाज पूर्व स्थिति से पहले अस्तित्व में नहीं था यह विचार कि मानव जाति एक समय में पृथक व्यक्ति के तौर पर अस्तित्व में थी जो आपस में अराजकतापूर्ण हिंसा (हॉब्स) द्वारा या एक दूसरे से प्रशांत अज्ञानतावश मिलते थे (रूसो) ऐसा कहना सही नहीं है। मानवजाति और उनके पुराप्राचीन पूर्वज हमेशा आपसी संबंधों के आधार पर विभिन्न आकार के सामाजिक समूहों में रहते थे। वास्तव में वे इन सामाजिक एककों में लम्बे समय तक रहे जिससे सामाजिक सहयोग के लिए आवश्यक प्रज्ञामूलक और भावनात्मक क्षमतायें विकसित हुयीं और वे अपने जीन अक्षयनिधि से दृढ़तापूर्वक जुड़ गयीं। इसका अर्थ यह हुआ कि सामूहिक कार्य का विवेकपूर्ण-विकल्प प्रतिदर्श, जिसमें एक व्यक्ति यह समझता है कि वह आपस में सहयोग करके ही बेहतर ढंग से रह सकते हैं, बहुत हद तक सामाजिक सहयोग के महत्त्व को कमतर दिखाता है, जो मानव समाज में विद्यमान होता है और जो इसके अंतर्गत निहित इरादों को ठीक से नहीं समझता है। अगला विचार प्राकृतिक मानवीय सामाजिकता का है। यह दो सिद्धांतों पर आधारित है जो रिश्तेदारों का चयन और परस्पर परोपकारिता पर निर्भर है। यह रिश्तेदार चयन या समावेशी अनुकूलता का सिद्धांत दर्शाता है कि मानवीय क्रिया की परोपकारिता जैनेटिक संबंधों की ओर (या ऐसे व्यक्ति जो जैनेटिक रूप से एक दूसरे से जुड़े हों) साधारण तौर पर उनके साझा जीन्स के समानुपाती होती है। परस्पर परोपकारिता का सिद्धांत यह कहता है कि मानव का स्वभाव आपसी सम्बंध स्थापित करने का है जो परस्पर लाभ या परस्पर हानि पर आधारित होता है जब वह समय के दौरान एक दूसरे से मिलते जुलते हैं। परस्पर परोपकारिता रिश्तेदार चयन के विपरीत जैनेटिक सम्बद्धता पर आधारित नहीं होता है हालांकि यह बार-बार प्रत्यक्ष व्यक्तिगत मेलजोल पर निर्भर है।

लेखक के दृष्टिकोण से मानवीय समाज की मुख्य विशेषता निम्नलिखित है :

    1. अराजकतापूर्ण हिंसा
    2. एक दूसरे के प्रति शांतिप्रिय अनभिज्ञता
    3. रिश्तेदार आधारित सामाजिक समूह
    4. निर्धारित व्यक्तिगत सम्बंध

[Question ID = 4421][Question Description = 148_81_GP6_SEP22_S2_Q48]
1. 1 [Option ID = 17681]
2. 2 [Option ID = 17682]
3. 3 [Option ID = 17683]
4. 4 [Option ID = 17684]

Read the given passage and answer the questions that follow

Human beings are not completely free to socially construct their own behaviour. They have a shared biological nature. The nature is remarkably uniform throughout the world, given the fact that most contemporary humans outside of Africa descended from a single relatively small group of individuals some fifty thousand years ago. This shared nature does not determine political behaviour, but it frames and limits the nature of institutions that are possible. It also means that human politics is subject to certain recurring patterns of behaviour across time and across cultures. This shared nature can be described in certain propositions like that the human beings never existed in a pre-social state.

The idea that human beings at one time existed as isolated individuals, who interacted either through anarchic violence (Hobbes) or in pacific ignorance of one another (Rousseau), is not correct. Human beings as well as their primate ancestors always lived in kin-based social groups of varying sizes. Indeed, they lived in these social units for a sufficiently long period of time that the cognitive and emotional faculties needed to promote social cooperation evolved and became hardwired in their genetic endowments. This means that a rational-choice model of collective action, in which individuals calculate that they will be better off by cooperating with one another, vastly understates the degree of social cooperation that exists in human societies and misunderstands the motives that underlie it.

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The concept of social cooperation involves

A. Kin selection

B. Cognitive faculty

C. Emotional detachment

D. Reciprocal altruism

Choose the correct option:

1. A and B only
2. B and C only
3. C and D only
4. A and D only

निम्नलिखित उद्धरण को पढ़ें और सम्बंधित पाँच प्रश्नों के उत्तर दें।

मानवजाति अपने व्यवहार को सामाजिक तौर पर निर्माण करने के लिए पूर्ण रूप से स्वतंत्र नहीं है उनकी जैविकीय प्रकृति समान होती है, पूरे विश्व में प्रकृति एक सामान होती है इस तथ्य को देखते हुए कि अधिकांश समकालिक मानवों की उत्पत्ति अफ्रीका के बाहर एक अपेक्षाकृत छोटे समूह के द्वारा लगभग 50 हजार वर्ष पहले हुई थी। यह परस्पर प्रकृति राजनीतिक व्यवहार को निर्धारित नहीं करती है लेकिन यह संभावित संस्थाओं की प्रकृति निर्मित और सीमित करती है। इसका तात्पर्य यह है कि समय और संस्कृतियों के क्रम में मानव राजनीति व्यवहार के कुछ विशिष्ट तरीकों से विनिर्दिष्ट होती है, इस परस्पर प्रकृति को कुछ हद तक इस तरह वर्णित किया जा सकता है कि मानवजाति समाज पूर्व स्थिति से पहले अस्तित्व में नहीं था यह विचार कि मानव जाति एक समय में पृथक व्यक्ति के तौर पर अस्तित्व में थी जो आपस में अराजकतापूर्ण हिंसा (हॉब्स) द्वारा या एक दूसरे से प्रशांत अज्ञानतावश मिलते थे (रूसो) ऐसा कहना सही नहीं है। मानवजाति और उनके पुराप्राचीन पूर्वज हमेशा आपसी संबंधों के आधार पर विभिन्न आकार के सामाजिक समूहों में रहते थे। वास्तव में वे इन सामाजिक एककों में लम्बे समय तक रहे जिससे सामाजिक सहयोग के लिए आवश्यक प्रज्ञामूलक और भावनात्मक क्षमतायें विकसित हुयीं और वे अपने जीन अक्षयनिधि से दृढ़तापूर्वक जुड़ गयीं। इसका अर्थ यह हुआ कि सामूहिक कार्य का विवेकपूर्ण-विकल्प प्रतिदर्श, जिसमें एक व्यक्ति यह समझता है कि वह आपस में सहयोग करके ही बेहतर ढंग से रह सकते हैं, बहुत हद तक सामाजिक सहयोग के महत्त्व को कमतर दिखाता है, जो मानव समाज में विद्यमान होता है और जो इसके अंतर्गत निहित इरादों को ठीक से नहीं समझता है। अगला विचार प्राकृतिक मानवीय सामाजिकता का है। यह दो सिद्धांतों पर आधारित है जो रिश्तेदारों का चयन और परस्पर परोपकारिता पर निर्भर है। यह रिश्तेदार चयन या समावेशी अनुकूलता का सिद्धांत दर्शाता है कि मानवीय क्रिया की परोपकारिता जैनेटिक संबंधों की ओर (या ऐसे व्यक्ति जो जैनेटिक रूप से एक दूसरे से जुड़े हों) साधारण तौर पर उनके साझा जीन्स के समानुपाती होती है। परस्पर परोपकारिता का सिद्धांत यह कहता है कि मानव का स्वभाव आपसी सम्बंध स्थापित करने का है जो परस्पर लाभ या परस्पर हानि पर आधारित होता है जब वह समय के दौरान एक दूसरे से मिलते जुलते हैं। परस्पर परोपकारिता रिश्तेदार चयन के विपरीत जैनेटिक सम्बद्धता पर आधारित नहीं होता है हालांकि यह बार-बार प्रत्यक्ष व्यक्तिगत मेलजोल पर निर्भर है।

सामाजिक सहयोग की अवधारणा में निम्नलिखित शामिल हैं
A. रिश्तेदार चयन

B. प्रज्ञानात्मक तंत्र

C. भावनात्मक विलगाव

D. पारस्परिक परोपकार

1. केवल A और B
2. केवल B और C
3. केवल C और D
4. केवल A और D

[Question ID = 4422][Question Description = 149_81_GP6_SEP22_S2_Q49]
1. 1 [Option ID = 17685]
2. 2 [Option ID = 17686]
3. 3 [Option ID = 17687]
4. 4 [Option ID = 17688]

Read the given passage and answer the questions that follow

Human beings are not completely free to socially construct their own behaviour. They have a shared biological nature. The nature is remarkably uniform throughout the world, given the fact that most contemporary humans outside of Africa descended from a single relatively small group of individuals some fifty thousand years ago. This shared nature does not determine political behaviour, but it frames and limits the nature of institutions that are possible. It also means that human politics is subject to certain recurring patterns of behaviour across time and across cultures. This shared nature can be described in certain propositions like that the human beings never existed in a pre-social state.

The idea that human beings at one time existed as isolated individuals, who interacted either through anarchic violence (Hobbes) or in pacific ignorance of one another (Rousseau), is not correct. Human beings as well as their primate ancestors always lived in kin-based social groups of varying sizes. Indeed, they lived in these social units for a sufficiently long period of time that the cognitive and emotional faculties needed to promote social cooperation evolved and became hardwired in their genetic endowments. This means that a rational-choice model of collective action, in which individuals calculate that they will be better off by cooperating with one another, vastly understates the degree of social cooperation that exists in human societies and misunderstands the motives that underlie it.

The next one is the idea of natural human sociability. This is built around two principles, kin selection and reciprocal altruism. The principle of kin selection or inclusive fitness states that human beings will act altruistically toward genetic relatives (or individuals believed to be genetic relatives) in rough proportion to their shared genes. The principle of reciprocal altruism says that human beings tend to develop relationships of mutual benefit or mutual harm as they interact with other individuals over time. Reciprocal altruism, unlike kin selection, does not depend on genetic relatedness: it does, however, depend upon repeated, direct personal interaction.

The passage recognises the fact that human sociability has

1. Political determinants
2. Rational choice model
3. Integrated collective action
4. Genetic linkage

निम्नलिखित उद्धरण को पढ़ें और सम्बंधित पाँच प्रश्नों के उत्तर दें।

मानवजाति अपने व्यवहार को सामाजिक तौर पर निर्माण करने के लिए पूर्ण रूप से स्वतंत्र नहीं है उनकी जैविकीय प्रकृति समान होती है, पूरे विश्व में प्रकृति एक सामान होती है इस तथ्य को देखते हुए कि अधिकांश समकालिक मानवों की उत्पत्ति अफ्रीका के बाहर एक अपेक्षाकृत छोटे समूह के द्वारा लगभग 50 हजार वर्ष पहले हुई थी। यह परस्पर प्रकृति राजनीतिक व्यवहार को निर्धारित नहीं करती है लेकिन यह संभावित संस्थाओं की प्रकृति निर्मित और सीमित करती है। इसका तात्पर्य यह है कि समय और संस्कृतियों के क्रम में मानव राजनीति व्यवहार के कुछ विशिष्ट तरीकों से विनिर्दिष्ट होती है, इस परस्पर प्रकृति को कुछ हद तक इस तरह वर्णित किया जा सकता है कि मानवजाति समाज पूर्व स्थिति से पहले अस्तित्व में नहीं था यह विचार कि मानव जाति एक समय में पृथक व्यक्ति के तौर पर अस्तित्व में थी जो आपस में अराजकतापूर्ण हिंसा (हॉब्स) द्वारा या एक दूसरे से प्रशांत अज्ञानतावश मिलते थे (रूसो) ऐसा कहना सही नहीं है। मानवजाति और उनके पुराप्राचीन पूर्वज हमेशा आपसी संबंधों के आधार पर विभिन्न आकार के सामाजिक समूहों में रहते थे। वास्तव में वे इन सामाजिक एककों में लम्बे समय तक रहे जिससे सामाजिक सहयोग के लिए आवश्यक प्रज्ञामूलक और भावनात्मक क्षमतायें विकसित हुयीं और वे अपने जीन अक्षयनिधि से दृढ़तापूर्वक जुड़ गयीं। इसका अर्थ यह हुआ कि सामूहिक कार्य का विवेकपूर्ण-विकल्प प्रतिदर्श, जिसमें एक व्यक्ति यह समझता है कि वह आपस में सहयोग करके ही बेहतर ढंग से रह सकते हैं, बहुत हद तक सामाजिक सहयोग के महत्त्व को कमतर दिखाता है, जो मानव समाज में विद्यमान होता है और जो इसके अंतर्गत निहित इरादों को ठीक से नहीं समझता है। अगला विचार प्राकृतिक मानवीय सामाजिकता का है। यह दो सिद्धांतों पर आधारित है जो रिश्तेदारों का चयन और परस्पर परोपकारिता पर निर्भर है। यह रिश्तेदार चयन या समावेशी अनुकूलता का सिद्धांत दर्शाता है कि मानवीय क्रिया की परोपकारिता जैनेटिक संबंधों की ओर (या ऐसे व्यक्ति जो जैनेटिक रूप से एक दूसरे से जुड़े हों) साधारण तौर पर उनके साझा जीन्स के समानुपाती होती है। परस्पर परोपकारिता का सिद्धांत यह कहता है कि मानव का स्वभाव आपसी सम्बंध स्थापित करने का है जो परस्पर लाभ या परस्पर हानि पर आधारित होता है जब वह समय के दौरान एक दूसरे से मिलते जुलते हैं। परस्पर परोपकारिता रिश्तेदार चयन के विपरीत जैनेटिक सम्बद्धता पर आधारित नहीं होता है हालांकि यह बार-बार प्रत्यक्ष व्यक्तिगत मेलजोल पर निर्भर है।

उद्धरण यह मानता है कि मानवीय सामाजिकता में निहित है

1. राजनीतिक निर्धारक
2. विवेक आधारित चयन प्रतिदर्श
3. समेकित सामूहिक कार्य
4. जेनेटिक सम्बद्धता

[Question ID = 4423][Question Description = 150_81_GP6_SEP22_S2_Q50]

1. 1 [Option ID = 17689]
2. 2 [Option ID = 17690]
3. 3 [Option ID = 17691]
4. 4 [Option ID = 17692]