DU MSc Informatics IIC

Topic:- INFO MSC

1) Select the correct word usage:
Khap panchayats are extra-constitutional bodies in Haryana that decry (A) /decree(B) institutionalised atrocities. The Khap leaders are universally criticised for imposing regressive diktats that fetter (A)/curb (B) women. Patriarchal and misogynist, Khaps have played a key role in reducing Haryana's sex ratio to an immeasurable (A)/abysmal (B) low. The recent apex court directive against Khap panchayats holds the district administration including the police accountable for the prevention of the barbaric acts carried out at the behest(A)/recommendation(B) of the Khaps.

[Question ID = 1922]

1. BABA

   [Option ID = 7685]
2. AABB

   [Option ID = 7686]
3. BBAB

   [Option ID = 7687]
4. ABBA

   [Option ID = 7688]

2) In each of the following questions six words are given which are denoted by (a),(b),(c),(d),(e) and (f). By using all the six words , each only once , you have to frame a meaningful and grammatically correct sentence. The correct order of words is the answer.

Choose from the four alternatives the one having the correct order of words and mark the number of that alternative as your answer.

(a) Society

(b) Followed

(c) Must

(d) Of

(e) Be

(f) Norms

[Question ID = 1923]

1. bcedaf

   [Option ID = 7689]
2. fdaceb

   [Option ID = 7690]
3. fdabce

   [Option ID = 7691]
4. fdcaeb

   [Option ID = 7692]

3) In each of the following questions six words are given which are denoted by (a),(b),(c),(d),(e) and (f). By using all the six words , each only once , you have to frame a meaningful and grammatically correct sentence. The correct order of words is the answer.

Choose from the four alternatives the one having the correct order of words and mark the number of that alternative as your answer.

(a) Mould

(b) The

(c) Can

(d) Opinion

(e) Public

(f) Press

[Question ID = 1924]

1. edbfca

   [Option ID = 7693]
2. bfcaed

   [Option ID = 7694]
3. bfcead

   [Option ID = 7695]
4. bedfca

   [Option ID = 7696]

4) In each of the following questions six words are given which are denoted by (a),(b),(c),(d),(e) and (f). By using all the six words , each only once , you have to frame a meaningful and grammatically correct sentence. The correct order of words is the answer.

Choose from the four alternatives the one having the correct order of words and mark the number of that alternative as your answer.

(a) Crucial

(b) Ahead

(c) Democracy

(d) Are

(e) Days

(f) For

[Question ID = 1925]

1. aefcdb

   [Option ID = 7697]
2. ebdafc

   [Option ID = 7698]
3. ebdfca

   [Option ID = 7699]
4. edabfc

   [Option ID = 7700]

5) In each of the following questions six words are given which are denoted by (a),(b),(c),(d),(e) and (f). By using all the six words , each only once , you have to frame a meaningful and grammatically correct sentence. The correct order of words is the answer.

Choose from the four alternatives the one having the correct order of words and mark the number of that alternative as your answer.

(a) Being

(b) Houses

(c) Here

(d) Demolished

(e) Are

(f) Dilapidated

[Question ID = 1926]

1. cfhaed

   [Option ID = 7701]
2. afbedc

   [Option ID = 7702]
3. fbeadc

   [Option ID = 7703]
4. bcedaf

   [Option ID = 7704]

6) In each of the following questions six words are given which are denoted by (a),(b),(c),(d),(e) and (f). By using all the six words , each only once , you have to frame a meaningful and grammatically correct sentence. The correct order of words is the

answer. Choose from the four alternatives the one having the correct order of words and mark the number of that alternative as your answer.

(a) Originate

(b) Expertise

(c) From

(d) Power

(e) Individual's

(f) Should

[Question ID = 1927]

1. bfaced

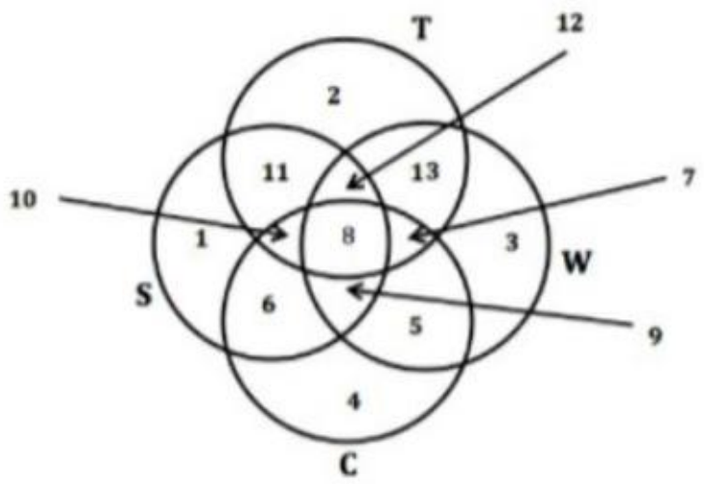
   [Option ID = 7705]
2. edfabc

   [Option ID = 7706]
3. dfaceb

   [Option ID = 7707]
4. ebfacd

   [Option ID = 7708]

7) Study the following diagram carefully:



Circle S stands for households having a scooter;
Circle T stands for households having a TV set;
Circle W stands for households having a washing machine;
Circle C stands for households having a car.
Please Note: The different numbers indicate the non-overlapping regions e.g., S represents union of regions 1, 11, 12, 8 , 9 , 10 ,and 6.

House holds having all the four items are represented by the region

[Question ID = 1928]

1. 7

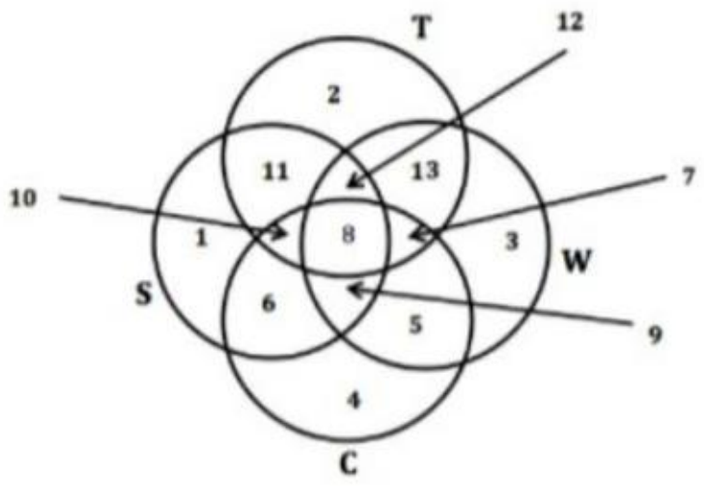
   [Option ID = 7709]
2. 8

   [Option ID = 7710]
3. 9

   [Option ID = 7711]
4. 12

   [Option ID = 7712]

8) Study the diagram carefully:



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Please Note: The different numbers indicate the non-overlapping regions e.g., S represents union of regions 1, 11, 12, 8 , 9 , 10 ,and 6.

Households having only scooter are represented by

[Question ID = 1929]

1. Region S

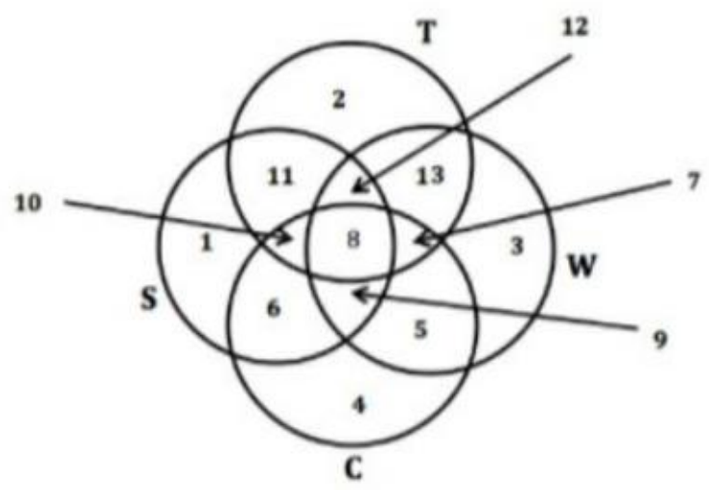
   [Option ID = 7713]
2. union of regions 1, 6 , and 9

   [Option ID = 7714]
3. Region T

   [Option ID = 7715]
4. Region 1

   [Option ID = 7716]

9) Study the diagram carefully:



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Circle C stands for households having a car.
Please Note: The different numbers indicate the non-overlapping regions e.g., S represents union of regions 1, 11, 12, 8 , 9 , 10 ,and 6.

Households having a car, washing machine, TV set but not scooter are represented by the region

[Question ID = 1930]

1. 7

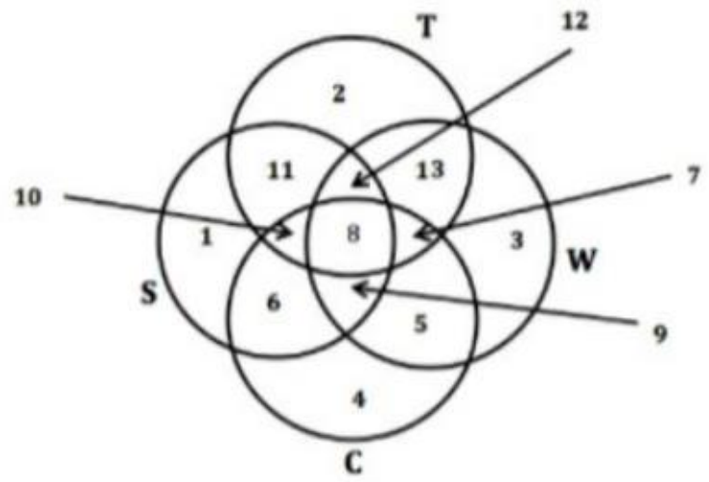
   [Option ID = 7717]
2. 8

   [Option ID = 7718]
3. 9

   [Option ID = 7719]
4. 12

   [Option ID = 7720]

10) Study the diagram carefully:



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Circle T stands for households having a TV set;
Circle W stands for households having a washing machine;
Circle C stands for households having a car.

Please Note: The different numbers indicate the non-overlapping regions e.g., S represents union of regions 1, 11, 12, 8 , 9 , 10 ,and 6.

Households having only a TV set and washing machine are given by the

[Question ID = 1931]

1. union of region 7,8,12 and 13

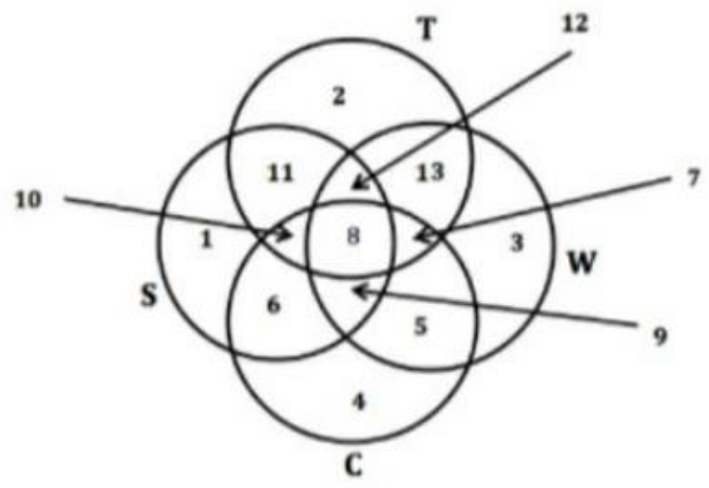
   [Option ID = 7721]
2. region 12

   [Option ID = 7722]
3. region 5

   [Option ID = 7723]
4. region 13

   [Option ID = 7724]

11) Study the diagram carefully:



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Circle T stands for households having a TV set;
Circle W stands for households having a washing machine;
Circle C stands for households having a car.
Please Note: The different numbers indicate the non-overlapping regions e.g., S represents union of regions 1, 11, 12, 8 , 9 , 10 ,and 6.

Households having TV set but neither scooter nor washing machine are given by the region

[Question ID = 1932]

1. 2

   [Option ID = 7725]
2. 11

   [Option ID = 7726]
3. 12

   [Option ID = 7727]
4. 13

   [Option ID = 7728]

12) When a pure semiconductor is heated, its resistance .....

[Question ID = 1933]

1. Goes down

   [Option ID = 7729]
2. Goes up

   [Option ID = 7730]
3. Remains the same

   [Option ID = 7731]
4. Can't say

   [Option ID = 7732]

13) For an electromagnetic wave propagating in free space, if E_0 =12 V/m, then the corresponding value of H_0 will be given by

[Question ID = 1934]

1. 6.36×10^{-2} A/m

   [Option ID = 7733]
2. 3.18×10^{-3} Am

   [Option ID = 7734]

3. 3.18×10^{-2} A/m

   [Option ID = 7735]
4. 3.18×10^{-2} Am

   [Option ID = 7736]

14) If the solutions of the wave equation are described as stationary states then the particle is moving in a potential which is

[Question ID = 1935]

1. velocity independent

   [Option ID = 7737]
2. time dependent

   [Option ID = 7738]
3. velocity dependent

   [Option ID = 7739]
4. time independent

   [Option ID = 7740]

15) Who was the first to say that 'light is an electromagnetic wave'?[Question ID = 1936]

1. J C Maxwell [Option ID = 7741]
2. Albert Einstein [Option ID = 7742]
3. Christiaan Huygens [Option ID = 7743]
4. Thomas Young [Option ID = 7744]

16) A right circularly polarized beam is incident on a calcite half wave plate. The emergent beam will be[Question ID = 1937]

1. Eliptically polarized [Option ID = 7745]
2. Unpolarized [Option ID = 7746]
3. Left circularly polarized [Option ID = 7747]
4. Linearly polarized [Option ID = 7748]

17) For a step index fiber with core refractive index n_2 =1.5, cladding refractive index n_1 =1.49 and core diameter =12 μm; the value of waveguide parameter V will be about

[Question ID = 1938]

1. $13.05\,\lambda_0$

   [Option ID = 7749]
2. $\frac{6.52}{\lambda_0}$

   [Option ID = 7750]
3. $\frac{13.05}{\lambda_0}$

   [Option ID = 7751]
4. $6.52\lambda_0$

   [Option ID = 7752]

18) What will be the frequency of the photon produced when an electron of 20keV is brought to rest in one collision with a heavy nucleus? Given Planck's constant is 4.14×10^{-15}eV Hz^{-1}

[Question ID = 1939]

1. 4.84×10^{18} Hz

   [Option ID = 7753]
2. 9.68×10^{18} Hz

   [Option ID = 7754]
3. 2.42×10^{18} Hz

   [Option ID = 7755]
4. 1.21×10^{18} Hz

   [Option ID = 7756]

19) Three identical positive charges *q* are placed at the corners of an equilateral triangle of side *L*. What force does one of the charge experiences?

[Question ID = 1940]

1. $\sqrt{3}\frac{1}{4\pi\varepsilon_0}\frac{q^3}{L^3}$

   [Option ID = 7757]

2. $\sqrt{\frac{2}{3}}\frac{1}{4\pi\varepsilon_0}\frac{q^2}{L^2}$

[Option ID = 7758]

3. $\sqrt{3}\left(\frac{1}{4\pi\varepsilon_0}\frac{q^2}{L^2}\right)$

[Option ID = 7759]

4. $\sqrt{\frac{3}{2}}\frac{1}{4\pi\varepsilon_0}\frac{q^2}{L^2}$

[Option ID = 7760]

20) The defect that occurs due to a displacement of an ion in a crystal lattice is known

[Question ID = 1941]

1. Schottky defect

[Option ID = 7761]

2. Vacancy defect

[Option ID = 7762]

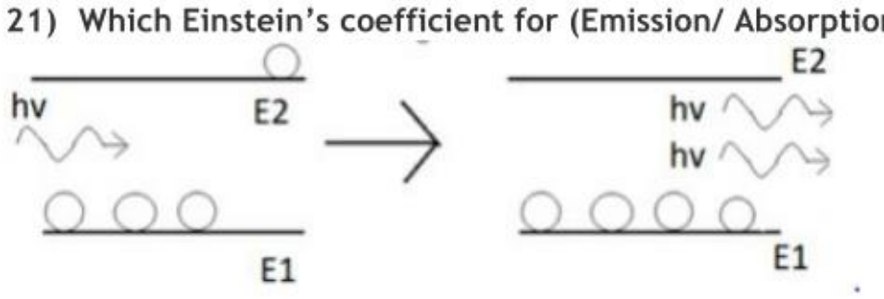
3. Interstitial defect

[Option ID = 7763]

4. Frankel defect

[Option ID = 7764]

21) Which Einstein's coefficient for (Emission/ Absorption) should be used in this case?



[Question ID = 1942]

1. A_{21} [Option ID = 7765]
2. B_{12} [Option ID = 7766]
3. A_{12} [Option ID = 7767]
4. B_{21} [Option ID = 7768]

22) Compton shift depends only on

[Question ID = 1943]

1. Incident radiation

[Option ID = 7769]

2. Nature of scattering substance

[Option ID = 7770]

3. Amplitude of frequency

[Option ID = 7771]

4. Angle of scattering

[Option ID = 7772]

23) Capacitors $C_1=C_0$ and $C_2=2C_0$ are given charges 4q and q respectively. They are then connected in parallel, with the positive plate of one capacitor connected to the negative plate of the other. What is the final charge on C_2?

[Question ID = 1944]

1. 2q

[Option ID = 7773]

2. q

[Option ID = 7774]

3. 5q

[Option ID = 7775]

4. 3q

[Option ID = 7776]

24) A wire with mass per unit length of 0.04 kg/m carries a current of 3 A horizontally to the east. What minimum magnetic field is required to support this wire against the force of gravity?[Question ID = 1945]

1. 0.4T [Option ID = 7777]
2. 0.13T [Option ID = 7778]
3. 0.26T [Option ID = 7779]
4. 1.0T [Option ID = 7780]

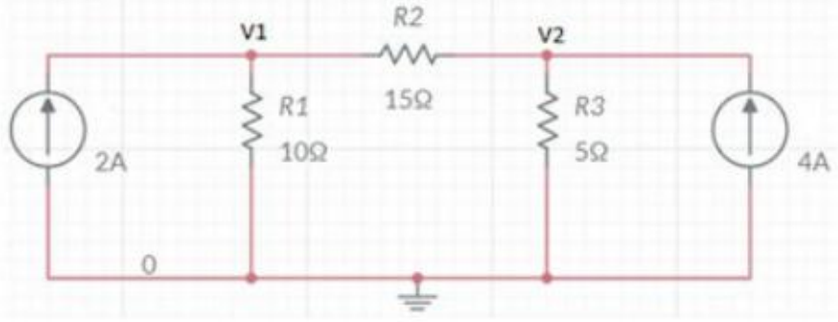
25) An iron rod is heated. The colors at different temperatures are noted. Which of the following colors shows that the iron rod is at the lowest temperature?[Question ID = 1946]

1. Orange [Option ID = 7781]
2. White [Option ID = 7782]
3. Blue [Option ID = 7783]
4. Red [Option ID = 7784]

26) Degree of scattering in the transmission electron microscope is a function of _[Question ID = 1947]

1. wavelength of electron beam used [Option ID = 7785]
2. only number of atoms that lie in the electron path [Option ID = 7786]
3. only mass of atoms that lie in the electron path [Option ID = 7787]
4. number and mass of atoms that lie in the electron path [Option ID = 7788]

27) The node voltages V1 & V2 in the below circuit are



[Question ID = 1948]

1. 20V & 20V [Option ID = 7789]
2. 20V & 30V [Option ID = 7790]
3. 30V & 30V [Option ID = 7791]
4. 30V & 20V [Option ID = 7792]

28) After subtraction 101_2 from 111_2, the output is:[Question ID = 1949]

1. 001_2 [Option ID = 7793]
2. 100_2 [Option ID = 7794]
3. 110_2 [Option ID = 7795]
4. 010_2 [Option ID = 7796]

29) Dual slop ADC has the value of R = 1 K and the value of C is 0.44 nano-farad has charging and discharging time for some specific voltage is 9 ns and 3 ns, respectively. If the reference voltage is 4.4 V, what is the peak voltage reached by a triangular wave during the charging process?

[Question ID = 1950]

1. 3mV

   [Option ID = 7797]
2. 90mV

   [Option ID = 7798]
3. 30mV

   [Option ID = 7799]
4. 5mV

   [Option ID = 7800]

30) main()

{printf("javatpoint");

main();}

The output of this program is

[Question ID = 1951]

1. Wrong statement

   [Option ID = 7801]
2. It will Print javatpoint once

   [Option ID = 7802]
3. It will keep on printing javatpoint

   [Option ID = 7803]
4. It will Print javatpoint twice

   [Option ID = 7804]

31) In microprocessor, DMA Direct Memory Access is used for:[Question ID = 1952]

1. Transfer of data within microprocessor exclusively using accumulator [Option ID = 7805]
2. Transfer of data between microprocessor ad I/O devices [Option ID = 7806]
3. Without using microprocessor, Direct transfer of data between I/O and memory [Option ID = 7807]
4. Transfer of data between registers and memory [Option ID = 7808]

32) The depletion capacitance, C_J, of an abrupt P-N junction with constant doping on either side varies with reverse bias, V_R , as

[Question ID = 1953]

1. $C_J \propto V_R$

   [Option ID = 7809]

2. $C_J \propto V_R^{-\frac{1}{2}}$

   [Option ID = 7810]

3. $C_J \propto V_R^{-1}$

   [Option ID = 7811]

4. $C_J \propto V_R^{-\frac{1}{3}}$

   [Option ID = 7812]

33) An AM transmitter has a carrier power of 30 W. The percentage of modulation is 85%. The power in one sideband is: [Question ID = 1954]

1. 54W [Option ID = 7813]
2. 10.8W [Option ID = 7814]
3. 108W [Option ID = 7815]
4. 5.4W [Option ID = 7816]

34) A certain inverting amplifier has a closed-loop voltage gain of 25. The Op-amp has an open-loop voltage gain of 100,000. If an Op-amp with an open-loop voltage gain of 200,000 is substituted in the arrangement, the closed-loop gain ……..[Question ID = 1955]

1. remains at 25 [Option ID = 7817]
2. doubles [Option ID = 7818]
3. drops to 12.5 [Option ID = 7819]
4. increases slightly [Option ID = 7820]

35) A one bit full adder takes 75 nsec to produce a sum and 50nsec to produce a carry. A 4 bit parallel adder is designed using this type of full adder. The maximum rate of additions per second can be provided by 4 bit parallel adder is $Ax10^6$ additions/seconds. The value of A is

[Question ID = 1956]

1. 2.88

   [Option ID = 7821]

2. 4.44

   [Option ID = 7822]

3. 5.44

   [Option ID = 7823]

4. 2.25

   [Option ID = 7824]

36) The output power of a power amplifier is several times the power of its input signal. This is possible because[Question ID = 1957]

1. The power amplifier converts a part of the input dc power into output ac power [Option ID = 7825]
2. The power amplifier introduces negative resistance [Option ID = 7826]
3. Positive feedback exists in the circuit [Option ID = 7827]
4. Step up transformer is used in the circuit [Option ID = 7828]

37) A three-stage amplifier has gains of 10 dB, 16 dB, and 14 dB per section. What is the total dB gain?[Question ID = 1958]

1. 10dB [Option ID = 7829]
2. 4dB [Option ID = 7830]
3. 40dB [Option ID = 7831]
4. 16 dB [Option ID = 7832]

38) A clock is accurate at 8°C and has then a period of exactly 2sec. How much time will the clock lose in a month of 30 days if the average temperature of the month is 18°C. (α of pendulum wire material is 0.000011 per °C.)

[Question ID = 1959]

1. 14.3 msec

   [Option ID = 7833]

2. 28.6 msec

[Option ID = 7834]

3. 143 sec

[Option ID = 7835]

4. 286 sec

[Option ID = 7836]

39) The rank of the given matrix is:

$$\begin{vmatrix} 1 & 5 & 6 \\ 2 & 3 & 4 \\ -1 & 2 & 2 \end{vmatrix}$$

[Question ID = 1960]

1. 0

[Option ID = 7837]

2. 2

[Option ID = 7838]

3. 3

[Option ID = 7839]

4. 1

[Option ID = 7840]

40) Which of the following is not true about $s_n = \frac{1}{n}$?

[Question ID = 1961]

1. lim $\lim_{n\to\infty} \sum_{i=1}^{n} s_i = L$, for some finite L

[Option ID = 7841]

2. The sequence converges to 0

[Option ID = 7842]

3. The series $\sum(-1)^n s_n$ converges

[Option ID = 7843]

4. The series $\sum s_n^2$ converges

[Option ID = 7844]

41) Which of the following is not Dirichlet's condition for the Fourier series expansion?

[Question ID = 1962]

1. f(x) has finite number of maxima and minima

[Option ID = 7845]

2. f(x) is aperiodic, single valued, finite

[Option ID = 7846]

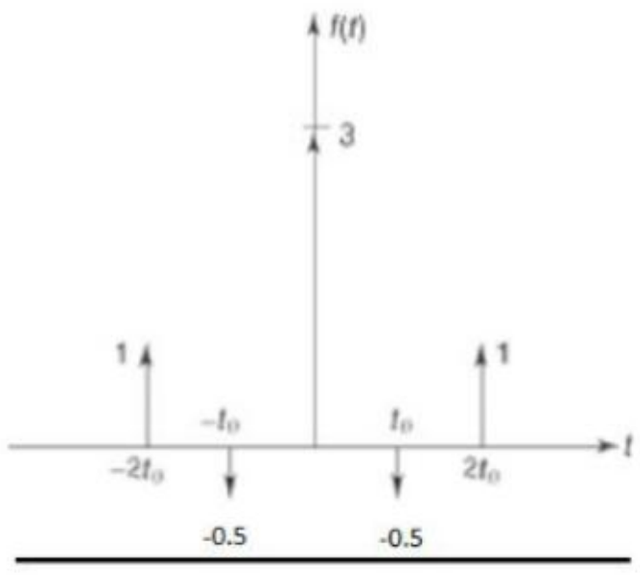
3. f(x) is periodic, single valued, finite

[Option ID = 7847]

4. f(x) has finite number of discontinuities in only one period

[Option ID = 7848]

42) The Fourier transform of the signal shown below is



[Question ID = 1963]

1. 3 - cos ωt_0 + 2 cos $2\omega t_0$

[Option ID = 7849]

2. 3 + cos ωt_0 - 2 cos $2\omega t_0$

[Option ID = 7850]

3. $3 + 0.5 \cos \omega t_0 - \cos 2\omega t_0$

   [Option ID = 7851]

4. $3 - 0.5\cos \omega t_0 + \cos 2\omega t_0$

   [Option ID = 7852]

43) The inverse Laplace transform of

$\frac{6}{s(s^2+9)}$

is

[Question ID = 1964]

1. $\frac{2}{3}(\cos 3t - 1)u(t)$

   [Option ID = 7853]

2. $-\frac{6}{9}(\cos 3t - 1)u(t)$

   [Option ID = 7854]

3. $-\frac{2}{3}(\cos 3t - 1)u(t)$

   [Option ID = 7855]

4. $-\frac{2}{3}(\cos 3t - 1)u(-t)$

   [Option ID = 7856]

44)

Determine $\oint_C \frac{4}{z(z-2)} dz$ where C is the contour $|z-2| = 4$

[Question ID = 1965]

1. ∞ [Option ID = 7857]
2. 1 [Option ID = 7858]
3. -1 [Option ID = 7859]
4. 0 [Option ID = 7860]

45) The eigenvalues of

$$\begin{bmatrix} 5 & 6 & 17 \\ 0 & -19 & 23 \\ 0 & 0 & 37 \end{bmatrix}$$

are[Question ID = 1966]

1. -19, 5, 37 [Option ID = 7861]
2. 19, -5, -37 [Option ID = 7862]
3. 2,-3,7 [Option ID = 7863]
4. 3,-5, 37 [Option ID = 7864]

46) $\lim_{z \to 1+i} \left(\frac{z^4+2iz^2+8}{z^2-3iz-3+i} \right)$ **is**

[Question ID = 1967]

1. +7.2+2.4i

   [Option ID = 7865]

2. -7.2-2.4i

   [Option ID = 7866]

3. -7.2+2.4i

   [Option ID = 7867]

4. -14.2+2.4i

   [Option ID = 7868]

47) The residue of the function sin

$f(z) = \frac{1}{\sin x}$

at z=0 equals to[Question ID = 1968]

1. 0 [Option ID = 7869]
2. -1 [Option ID = 7870]
3. 1/2 [Option ID = 7871]
4. 1 [Option ID = 7872]

48) The coeffient of 5th term in the expansion of $\left(x + \frac{1}{x}\right)^8$ is:

[Question ID = 1969]

1. $8C_4$

   [Option ID = 7873]
2. $5C_4$

   [Option ID = 7874]
3. $8C_5$

   [Option ID = 7875]
4. $5C_5$

   [Option ID = 7876]

49) The length 'p' meters of a certain metal rod at temperature θ °C is $p=1+0.00005\ \theta+0.0000004\ \theta^2$. Then the length of change of p in mm/ °C at 100 °C is:

[Question ID = 1970]

1. 1 mm/ °C

   [Option ID = 7877]
2. 0.5 mm/ °C

   [Option ID = 7878]
3. 0.13 mm/ °C

   [Option ID = 7879]
4. 2 mm/ °C

   [Option ID = 7880]

50) The solution of the equation is:

$x\frac{dy}{dx} - y = x$, y(1) = 2

[Question ID = 1971]

1. $y = x\,ln(x) + x$

   [Option ID = 7881]
2. $y = x\,ln(x) + 2x$

   [Option ID = 7882]
3. $y = x\,ln(x) - 2x$

   [Option ID = 7883]
4. $y = ln(x) + 2x$

   [Option ID = 7884]