Topic:- DU_J19_MCA_T1

1) The gratest value of the function y = Sin(x) . Sin(2x) on (-∞ ,∞) is [Question ID = 13885]

1. $\dfrac{4}{3\sqrt{3}}$ [Option ID = 25537]
2. $\dfrac{1}{3}$ [Option ID = 25540]
3. $\dfrac{3\sqrt{3}}{2}$ [Option ID = 25538]
4. $\dfrac{2}{3\sqrt{3}}$ [Option ID = 25539]

Correct Answer :-

- $\dfrac{4}{3\sqrt{3}}$ [Option ID = 25537]

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2)

The locus of the point (α, β) such that the line $y = \alpha x + \beta$ becomes a tangent to the hyperbola $9x^2 - 4y^2 = 36$, is

[Question ID = 13866]

1. an ellipse with length of semi-major axis 3 [Option ID = 25463]
2. a hyperbola with eccentricity $\dfrac{\sqrt{5}}{2}$ [Option ID = 25461]
3. an ellipse with eccentricity $\dfrac{\sqrt{3}}{2}$ [Option ID = 25464]
4. a hyperbola with eccentricity $\sqrt{5}$ [Option ID = 25462]

Correct Answer :-

- a hyperbola with eccentricity $\sqrt{5}$ [Option ID = 25462]

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3)

The complex number $\dfrac{2 - i\sqrt{3}}{1 + i\sqrt{3}}$ is the root of the quadratic equation with real coefficients described by

[Question ID = 13865]

1. $2x^2 + 2x + 9 = 0$ [Option ID = 25460]

2. $4x^2 + 2x + 9 = 0$ [Option ID = 25459]

3. $2x^2 + 2x + 7 = 0$ [Option ID = 25458]

4. $4x^2 + 2x + 7 = 0$ [Option ID = 25457]

Correct Answer :-

- $4x^2 + 2x + 7 = 0$ [Option ID = 25457]

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4)

The system of linear equations $\begin{pmatrix} 1 & 2 & 4 \\ 2 & 1 & 2 \\ 1 & 2 & \lambda - 4 \end{pmatrix} \begin{pmatrix} x \\ y \\ z \end{pmatrix} = \begin{pmatrix} 6 \\ 4 \\ \lambda \end{pmatrix}$

has

[Question ID = 13859]

1. no solution if λ=8 [Option ID = 25434]
2. infinitely many solutions if λ≠8 [Option ID = 25436]
3. Unique solution if λ≠6 [Option ID = 25433]
4. Infinitely many solutions if λ=6 [Option ID = 25435]

Correct Answer :-

- no solution if λ=8 [Option ID = 25434]

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5)

Let $z = x + iy$ and $z^{1/3} = p - iq$. If $\dfrac{x}{p} - \dfrac{y}{q} = \lambda(p^2 - q^2)$, then λ is equal to

[Question ID = 13860]

1. 2 [Option ID = 25437]
2. -2 [Option ID = 25440]
3. -4 [Option ID = 25439]
4. 4 [Option ID = 25438]

Correct Answer :-

- 4 [Option ID = 25438]

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6)

If $y(x) = xe^{-2x}$ is a solution of the differential equation $\dfrac{d^2 y}{dx^2} + p\dfrac{dy}{dx} + (q+1)y = 0$ then the

ordered pair (p, q) is equal to

[Question ID = 13872]

1. (3, 4) [Option ID = 25485]
2. (-4, 5) [Option ID = 25488]
3. (4, 3) [Option ID = 25486]
4. (2, -1) [Option ID = 25487]

Correct Answer :-

- (4, 3) [Option ID = 25486]

---

7) let $f(x) = Sin^8(x) + Cos^8(x)$. The function f increases in the interval

[Question ID = 13886]

1. $(5\pi/4, 3\pi/4)$ [Option ID = 25542]
2. $(\pi/2, 5\pi/8)$ [Option ID = 25543]
3. $(0, \pi/4)$ [Option ID = 25544]
4. $(\pi/4, \pi/2)$ [Option ID = 25541]

Correct Answer :-

- $(\pi/4, \pi/2)$ [Option ID = 25541]

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8)

If the non-zero solution $y(x)$ of the differential equation $\dfrac{dy}{dx} = \dfrac{y^3}{e^{2x} + y^2}$ passes through

the points (0, 1) and $\left(\alpha, \dfrac{1}{\sqrt{e}}\right)$, then α is equal to

[Question ID = 13868]

1. $\ln\left(\sqrt{2e}\right)$ [Option ID = 25469]
2. $\ln\left(2e\right)$ [Option ID = 25472]
3. $-\ln\left(2e\right)$ [Option ID = 25470]
4. $-\ln\left(\sqrt{2e}\right)$ [Option ID = 25471]

Correct Answer :-

- $-\ln\left(\sqrt{2e}\right)$ [Option ID = 25471]

---

9)

Let $\alpha \neq 0, \alpha \in R$. Then the matrix $M = \begin{pmatrix} \alpha & \alpha & \alpha \\ \alpha & \alpha & \alpha \\ \alpha & \alpha & \alpha \end{pmatrix}$

[Question ID = 13864]

1. has different minimal and characteristic polynomials [Option ID = 25456]
2. is not diagonalizable [Option ID = 25453]
3. is an idempotent [Option ID = 25454]
4. is nilpotent [Option ID = 25455]

---

10)

Using the 2-point Gauss quadrature $\int\limits_{0}^{2} \cos^2 x \, dx$ is equal to

[Question ID = 13867]

1. $\cos^2\left(-\dfrac{1}{\sqrt{3}}+1\right)+\sin^2\left(\dfrac{1}{\sqrt{3}}+1\right)$ [Option ID = 25465]

2. $\cos^2\left(\dfrac{1}{\sqrt{3}}+1\right)-\cos^2\left(\dfrac{1}{\sqrt{3}}-1\right)$ [Option ID = 25466]

3. $\sin^2\left(-\dfrac{1}{\sqrt{3}}+1\right)-\cos^2\left(\dfrac{1}{\sqrt{3}}+1\right)$ [Option ID = 25467]

4. $\cos^2\left(-\dfrac{1}{\sqrt{3}}+1\right)+\cos^2\left(\dfrac{1}{\sqrt{3}}+1\right)$ [Option ID = 25468]

Correct Answer :-

- $\cos^2\left(-\dfrac{1}{\sqrt{3}}+1\right)+\cos^2\left(\dfrac{1}{\sqrt{3}}+1\right)$ [Option ID = 25468]

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11)

Let $T : R^2 \rightarrow R^3$ be a linear transformation defined by $T(x) = Mx$, where $M = \begin{pmatrix} 1 & 1 \\ 2 & 1 \\ -1 & -3 \end{pmatrix}$.

Then which one of the following vectors can **NOT** be in the range of T?

[Question ID = 13863]

1. $\begin{pmatrix} -1 \\ 0 \\ 5 \end{pmatrix}$ [Option ID = 25451]

2. $\begin{pmatrix} 0 \\ -1 \\ 2 \end{pmatrix}$ [Option ID = 25450]

3. $\begin{pmatrix} 2 \\ 3 \\ -4 \end{pmatrix}$ [Option ID = 25449]

4. $\begin{pmatrix} 1 \\ 2 \\ -1 \end{pmatrix}$ [Option ID = 25452]

Correct Answer :-

$$\begin{pmatrix} 0 \\ -1 \\ 2 \end{pmatrix}$$
- [Option ID = 25450]

---

12) The perimeter of the loop of the curve $9y^2 = (x-2)(x-5)^2$ is :

[Question ID = 13888]

1. $2\sqrt{3}$ [Option ID = 25550]
2. $3\sqrt{3}$ [Option ID = 25552]
3. 4 [Option ID = 25551]
4. $4\sqrt{3}$ [Option ID = 25549]

Correct Answer :-

- $4\sqrt{3}$ [Option ID = 25549]

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13)

. Let $\lambda \in R$, and $f: R^3 \to R$ be a function defined by $f(x,y,z) = x^3y + y^3z + z^3x - \lambda(xyz)$. if the directional derivative of f at the point $P(1, -1, 1)$ in the direction of the unit vector $\hat{u} = \frac{2}{3}\hat{i} - \frac{2}{3}\hat{j} + \frac{1}{3}\hat{k}$ is -10, then the gradient of f at P is equal to

[Question ID = 13869]

1. $-10\hat{i} + 12\hat{j} - 6\hat{k}$ [Option ID = 25474]
2. $6\hat{i} - 4\hat{j} + 10\hat{k}$ [Option ID = 25475]
3. $-6\hat{i} + 8\hat{j} - 2\hat{k}$ [Option ID = 25476]
4. $2\hat{i} + 6\hat{k}$ [Option ID = 25473]

Correct Answer :-

- $-6\hat{i} + 8\hat{j} - 2\hat{k}$ [Option ID = 25476]

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14)

. If $f(x) = e^{g(x)}$ and $g(x) = \int_{2}^{\frac{x^2}{2}} \frac{dt}{\sqrt{1+t^4}}$ then the value of the derivative $f'(2)$ is equal to

[Question ID = 13871]

1. $\frac{2}{\sqrt{5}}$ [Option ID = 25482]

2. $\dfrac{1}{2\sqrt{5}}$ [Option ID = 25481]

3. $\dfrac{1}{\sqrt{5}}$ [Option ID = 25483]

4. $\dfrac{1}{\sqrt{65}}$ [Option ID = 25484]

Correct Answer :-

- $\dfrac{1}{\sqrt{5}}$ [Option ID = 25483]

---

15) If $\int \sin^2 x \cos 3x\, dx = \dfrac{\sin x}{a} + \dfrac{\sin 3x}{b} - \dfrac{\sin 5x}{c}$, then $a + b + c$ is equal to

[Question ID = 13876]

1. -18 [Option ID = 25501]
2. 22 [Option ID = 25502]
3. 30 [Option ID = 25504]
4. 26 [Option ID = 25503]

Correct Answer :-

- 22 [Option ID = 25502]

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16)

Let $V=M_2(R)$ denotes the vector space of 2×2 matrices with real entries over the real field.

Let $T:V\to V$ be defined by $T(P)=P^t$ for any $P\in V$, where P^t is the transpose of P. If E is the matrix representation of T with respect to the standard basis of V then $det(E)$ is equal to

[Question ID = 13880]

1. 2 [Option ID = 25518]
2. -2 [Option ID = 25519]
3. -1 [Option ID = 25520]
4. 1 [Option ID = 25517]

Correct Answer :-

- -1 [Option ID = 25520]

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17)

The set of all $\lambda \in R$ such that the sequence $\{a_n\}$, where $a_n = \sqrt{\lambda^2 n^2 + n + 1} - n$, $n \in N$, is convergent

[Question ID = 13862]

1. is equal to R [Option ID = 25448]
2. is an empty set [Option ID = 25445]

3. is a singleton [Option ID = 25446]
4. contains exactly two elements -1 and 1 [Option ID = 25447]

Correct Answer :-

- contains exactly two elements -1 and 1 [Option ID = 25447]

18)

The area of the plane region bounded by the curves $x + 2y^2 = 0$ and $x + 3y^2 = 1$ above x- axis is equal to

[Question ID = 13887]

1. 2/3 [Option ID = 25547]
2. 1//3 [Option ID = 25546]
3. 4/3 [Option ID = 25548]
4. 5/3 [Option ID = 25545]

Correct Answer :-

- 2/3 [Option ID = 25547]

19) The equation of common tangent to the curve $y^2 = 8x$ and $xy = -1$ is

[Question ID = 13884]

1. y = 2x + 1 [Option ID = 25534]
2. 3y = 9x+2 [Option ID = 25533]
3. y = x+2 [Option ID = 25536]
4. 2y = x + 8 [Option ID = 25535]

Correct Answer :-

- y = x+2 [Option ID = 25536]

20)

The area (in square units) of the quadrilateral formed by the tangent lines drawn to the ellipse $\dfrac{x^2}{25} + \dfrac{y^2}{9} = 1$ at the ends of its two latus rectums is

[Question ID = 13879]

1. $\dfrac{75}{2}$ [Option ID = 25515]

2. 75 [Option ID = 25516]

3. $\dfrac{125}{4}$ [Option ID = 25514]

4. $\dfrac{125}{2}$ [Option ID = 25513]

Correct Answer :-

- $\dfrac{125}{2}$ [Option ID = 25513]

21) The equation $2x^2 + y^2 - 12x - 4y + 16 = 0$ represents

[Question ID = 13881]

1. an ellipse with eccentricity $\dfrac{1}{\sqrt{2}}$ [Option ID = 25523]

2. a hyperbola with canter $(3, 2)$ [Option ID = 25524]

3. an ellipse with canter $(2, 3)$ [Option ID = 25521]

4. a hyperbola with eccentricity $\sqrt{2}$ [Option ID = 25522]

Correct Answer :-

- an ellipse with eccentricity $\dfrac{1}{\sqrt{2}}$ [Option ID = 25523]

---

22)

.Let $T : R^3 \to R^3$ be a linear transformation defined by $T(x, y, z) = (x - y, y - z, z - x)$. If rank(T) = ρ and nullity(T) = τ, then the ordered pair (ρ, τ) is equal to

[Question ID = 13875]

1. (0, 3) [Option ID = 25497]
2. (3, 0) [Option ID = 25500]
3. (1, 2) [Option ID = 25498]
4. (2, 1) [Option ID = 25499]

Correct Answer :-

- (2, 1) [Option ID = 25499]

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23)

$$\lim_{x \to 0} \frac{\left(e^x - 1 - x\right)^2 \cos x}{x(\sin x - x)}$$ is equal to

[Question ID = 13890]

1. 2/3 [Option ID = 25557]
2. -3/2 [Option ID = 25558]
3. -3 [Option ID = 25560]
4. 3/2 [Option ID = 25559]

Correct Answer :-

- -3/2 [Option ID = 25558]

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24)

If the Newton-Raphson method is applied to find a real root of $f(x) = 2x^2 + x - 2 = 0$ with initial approximation $x_0 = 1$. Then the second approximation x_2 is

[Question ID = 13883]

1. $\dfrac{82}{105}$ [Option ID = 25530]

2. $\dfrac{24}{105}$ [Option ID = 25532]

3. $\dfrac{84}{105}$ [Option ID = 25531]

4. $\dfrac{56}{105}$ [Option ID = 25529]

Correct Answer :-

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25)

Let the function $f(x,y)$ possesses continuous first order partial derivatives and $\nabla f(20, -100) = \begin{pmatrix} 5 \\ -2 \end{pmatrix}$. If $g(x,y) = f(xy^2, 2x^2y)$, then $\nabla g(5,-2)$ is equal to

[Question ID = 13870]

1. $\begin{pmatrix} 5 \\ -2 \end{pmatrix}$ [Option ID = 25477]

2. $\begin{pmatrix} -60 \\ -100 \end{pmatrix}$ [Option ID = 25479]

3. $\begin{pmatrix} 100 \\ -200 \end{pmatrix}$ [Option ID = 25478]

4. $\begin{pmatrix} -100 \\ 200 \end{pmatrix}$ [Option ID = 25480]

Correct Answer :-

- $\begin{pmatrix} 100 \\ -200 \end{pmatrix}$ [Option ID = 25478]

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26)

Let $f : R^2 \to R$ be defined by

$$f(x,y) = \begin{cases} \dfrac{x^2 - x\sqrt{y}}{x^2 + y} & x \in R, y \geq 0, (x,y) \neq (0,0) \\ 0 & otherwise \end{cases}$$

Then, which one of the following is **NOT** correct?

[Question ID = 13873]

1. $f_y(0,0) = 0$ [Option ID = 25491]

2. f is not continuous at $(0,0)$ [Option ID = 25489]

3. $f_x(0,0)$ does not exist [Option ID = 25490]

4. $f_x(0,0) + f_y(0,0) = 1$ [Option ID = 25492]

Correct Answer :-

$f_x(0,0)+f_y(0,0)=1$ [Option ID = 25492]

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27)

If Taylor's theorem applied on the function $f(x)=\int\limits_{0}^{x}\dfrac{\sin t}{t}dt$ then the value of the derivative $f^{(21)}(0)$ is equal to

[Question ID = 13878]

1. 1/(21)21! [Option ID = 25511]
2. -1/21! [Option ID = 25512]
3. 1/21 [Option ID = 25509]
4. -1/12 [Option ID = 25510]

Correct Answer :-

- 1/21 [Option ID = 25509]

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28)

. If $f(x)=ax^3+bx^2+x+1$ has a local maxima value 3 at the point of local maxima $x=-2$, then $f(2)$ is equal to

[Question ID = 13882]

1. 19 [Option ID = 25525]
2. 24 [Option ID = 25527]
3. 20 [Option ID = 25526]
4. 25 [Option ID = 25528]

Correct Answer :-

- 19 [Option ID = 25525]

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29)

Let $z=\cos\left(\dfrac{2\pi}{7}\right)+i\sin\left(\dfrac{2\pi}{7}\right)$. Then the principal argument of $\overline{\left(1-z^2\right)}$ is equal to

[Question ID = 13861]

1. $\dfrac{3\pi}{14}$ [Option ID = 25441]

2. $\dfrac{11\pi}{14}$ [Option ID = 25443]

3. $\dfrac{5\pi}{7}$ [Option ID = 25444]

4. $\dfrac{4\pi}{7}$ [Option ID = 25442]

Correct Answer :-

- $\dfrac{3\pi}{14}$ [Option ID = 25441]

30) Which one of the following is NOT a correct statement? [Question ID = 13874]

1. Every non-trivial group has at least two distinct subgroups [Option ID = 25496]
2. A non-cyclic group can have all of its proper subgroups cyclic [Option ID = 25493]
3. Every finite cyclic group has even number of generators [Option ID = 25494]
4. Infinite cyclic group has exactly two generators [Option ID = 25495]

Correct Answer :-

- Every finite cyclic group has even number of generators [Option ID = 25494]

Topic:- DU_J19_MCA_T2

1) Read the following passage and answer the subsequent questions :

I'd been working with plastic bags, which I cut up and sew back together as my primary material for my artwork for the last 20 years. I turn them into two and three-dimensional pieces and sculptures and installations. After about the first eight years, some of my work started to fissure and break down into smaller little bits of plastic. It's a bad thing that plastic breaks down into smaller little bits, because it's always still plastic. And a lot of it is in the marine environment. I learned about the Pacific garbage patch. I wanted to go out there, pick up the plastic, and cold mold it into bricks to be used as building materials in underdeveloped communities. But soon I realized that I needed to look at the bigger picture first: we need to attack the source of this waste that is entering the marine environment every day on a global scale. Rather than the marine plastic pile what I should focus on, is the pile of plastic in the supermarket. I'd go to the supermarket and all of my food is packaged in plastic. I'm concerned about the plastic and the toxins that leach from plastic into us and into our bodies.

Why does author want to go to the Pacific? [Question ID = 13894]

1. To pick up the plastic and cold mold it into bricks. [Option ID = 25573]
2. For sight seeing [Option ID = 25576]
3. To see the plastic garbage there [Option ID = 25574]
4. To throw more plastic there. [Option ID = 25575]

Correct Answer :-

- To pick up the plastic and cold mold it into bricks. [Option ID = 25573]

2) Read the following passage and answer the subsequent questions :

I'd been working with plastic bags, which I cut up and sew back together as my primary material for my artwork for the last 20 years. I turn them into two and three-dimensional pieces and sculptures and installations. After about the first eight years, some of my work started to fissure and break down into smaller little bits of plastic. It's a bad thing that plastic breaks down into smaller little bits, because it's always still plastic. And a lot of it is in the marine environment. I learned about the Pacific garbage patch. I wanted to go out there, pick up the plastic, and cold mold it into bricks to be used as building materials in underdeveloped communities. But soon I realized that I needed to look at the bigger picture first: we need to attack the source of this waste that is entering the marine environment every day on a global scale. Rather than the marine plastic pile what I should focus on, is the pile of plastic in the supermarket. I'd go to the supermarket and all of my food is packaged in plastic. I'm concerned about the plastic and the toxins that leach from plastic into us and into our bodies.

What does he mean by "the bigger picture"? [Question ID = 13893]

1. Plastic waste that is entering the marine environment regularly [Option ID = 25569]
2. Plastic waste cold-molded into bricks to be used as building materials [Option ID = 25572]
3. The massive use of plastic packaging for consumer items [Option ID = 25570]
4. Toxins leaching from plastic into us and into our bodies [Option ID = 25571]

Correct Answer :-

- The massive use of plastic packaging for consumer items [Option ID = 25570]

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3) Read the following passage and answer the subsequent questions :

I'd been working with plastic bags, which I cut up and sew back together as my primary material for my artwork for the last 20 years. I turn them into two and three-dimensional pieces and sculptures and installations. After about the first eight years, some of my work started to fissure and break down into smaller little bits of plastic. It's a bad thing that plastic breaks down into smaller little bits, because it's always still plastic. And a lot of it is in the marine environment. I learned about the Pacific garbage patch. I wanted to go out there, pick up the plastic, and cold mold it into bricks to be used as building materials in underdeveloped communities. But soon I realized that I needed to look at the bigger picture first: we need to attack the source of this waste that is entering the marine environment every day on a global scale. Rather than the marine plastic pile what I should focus on, is the pile of plastic in the supermarket. I'd go to the supermarket and all of my food is packaged in plastic. I'm concerned about the plastic and the toxins that leach from plastic into us and into our bodies.

How did the writer come to be concerned about plastic waste? [Question ID = 13892]

1. Plastic had been the primary material for his artwork for the last 20 years [Option ID = 25565]
2. Plastic breaks down into smaller little bits, but it turns into plastic waste [Option ID = 25568]
3. His work started to fissure and break down into smaller little bits of plastic [Option ID = 25566]
4. He realized that the bits of plastic his work broke into ultimately polluted the marine environment [Option ID = 25567]

Correct Answer :-

- He realized that the bits of plastic his work broke into ultimately polluted the marine environment [Option ID = 25567]

---

4) Read the following passage and answer the subsequent questions :

I'd been working with plastic bags, which I cut up and sew back together as my primary material for my artwork for the last 20 years. I turn them into two and three-dimensional pieces and sculptures and installations. After about the first eight years, some of my work started to fissure and break down into smaller little bits of plastic. It's a bad thing that plastic breaks down into smaller little bits, because it's always still plastic. And a lot of it is in the marine environment. I learned about the Pacific garbage patch. I wanted to go out there, pick up the plastic, and cold mold it into bricks to be used as building materials in underdeveloped communities. But soon I realized that I needed to look at the bigger picture first: we need to attack the source of this waste that is entering the marine environment every day on a global scale. Rather than the marine plastic pile what I should focus on, is the pile of plastic in the supermarket. I'd go to the supermarket and all of my food is packaged in plastic. I'm concerned about the plastic and the toxins that leach from plastic into us and into our bodies.

What does the author find in supermarket? [Question ID = 13895]

1. Plastic does not create any problem [Option ID = 25580]
2. All of his food is packaged in plastic [Option ID = 25579]
3. All the items are packed in paper. [Option ID = 25577]
4. Bricks made of plastic [Option ID = 25578]

Correct Answer :-
- All of his food is packaged in plastic [Option ID = 25579]

Topic:- DU_J19_MCA_T3

1) Read the following passage and answer the subsequent questions :

Recycling – everybody kind of ends their books about being sustainable and greening with the idea of recycling. You put something in a bin and you don't have to think about it again. What is the reality of

that? In the United States, less than seven percent of the plastics are recycled, or incinerated, or shipped to China. It is down-cycled and turned into lesser things -- a plastic bottle can never be a plastic bottle again.

We, a group of people concerned about plastic pollution, have added a fourth R onto the front of the "Reduce, Reuse, Recycle," and that is refuse. Whenever possible, refuse single-use and disposable plastics. Alternatives exist; I myself am now collecting these cool Pyrex containers and using those instead of plastic containers to store food in. And I know that I am doing a service to myself and my family. It is a problem that we've created as consumers and we have to solve it —We can solve this by raising awareness of the issue and teaching people to choose alternatives.

Mark the statement that is NOT true: [Question ID = 13898]

1. In USA seven percent plastic waste is recycled [Option ID = 25589]
2. The writer suggests we should refuse to use, as far as possible, single-use and disposable plastics [Option ID = 25591]
3. People should prefer to use alternatives wherever possible [Option ID = 25592]
4. Down-cycling only converts used plastic into another inferior plastic product [Option ID = 25590]

Correct Answer :-

- In USA seven percent plastic waste is recycled [Option ID = 25589]

---

2) **Read the following passage and answer the subsequent questions :**

Recycling — everybody kind of ends their books about being sustainable and greening with the idea of recycling. You put something in a bin and you don't have to think about it again. What is the reality of that? In the United States, less than seven percent of the plastics are recycled, or incinerated, or shipped to China. It is down-cycled and turned into lesser things -- a plastic bottle can never be a plastic bottle again.

We, a group of people concerned about plastic pollution, have added a fourth R onto the front of the "Reduce, Reuse, Recycle," and that is refuse. Whenever possible, refuse single-use and disposable plastics. Alternatives exist; I myself am now collecting these cool Pyrex containers and using those instead of plastic containers to store food in. And I know that I am doing a service to myself and my family. It is a problem that we've created as consumers and we have to solve it —We can solve this by raising awareness of the issue and teaching people to choose alternatives.

What service is writer doing to his family? [Question ID = 13899]

1. Refuse single-use and disposable plastics. [Option ID = 25593]
2. None of these [Option ID = 25596]
3. Using only those food items which are packaged in Pyrex. [Option ID = 25595]
4. Using Pyrex containers to store food. [Option ID = 25594]

Correct Answer :-

- Using Pyrex containers to store food. [Option ID = 25594]

---

3) **Read the following passage and answer the subsequent questions :**

Recycling — everybody kind of ends their books about being sustainable and greening with the idea of recycling. You put something in a bin and you don't have to think about it again. What is the reality of that? In the United States, less than seven percent of the plastics are recycled, or incinerated, or shipped to China. It is down-cycled and turned into lesser things -- a plastic bottle can never be a plastic bottle again.

We, a group of people concerned about plastic pollution, have added a fourth R onto the front of the "Reduce, Reuse, Recycle," and that is refuse. Whenever possible, refuse single-use and disposable plastics. Alternatives exist; I myself am now collecting these cool Pyrex containers and using those instead of plastic containers to store food in. And I know that I am doing a service to myself and my family. It is a problem that we've created as consumers and we have to solve it —We can solve this by raising awareness of the issue and teaching people to choose alternatives.

Why does the author think recycling is not the right solution? [Question ID = 13897]

1. Plastic waste is only down-cycled which again turns into waste in course of time [Option ID = 25588]
2. We simply throw our plastic waste into trash bin. [Option ID = 25585]
3. We only write about the need to recycle [Option ID = 25586]
4. Not much of plastic waste is really recycled [Option ID = 25587]

Correct Answer :-

- Plastic waste is only down-cycled which again turns into waste in course of time [Option ID = 25588]

Topic:- DU_J19_MCA_T4

1) **Read the following passage and answer the subsequent questions :**

Milk contains a type of sugar called lactose. When we are babies, our bodies make a special enzyme called lactase that allows us to digest the lactose in our mother's milk. But after we are weaned in early childhood, for many people this stops. Without lactase, we cannot properly digest the lactose in milk. But then evolution kicked in: some people began to keep their lactase enzymes active into adulthood. This "lactase persistence" allowed them to drink milk without side effects. It is the result of mutations in a section of DNA that controls the activity of the lactase gene. But in many populations, such as those in Africa, in Asia and South America, the trait is uncommon. Even people who are lactase-non-persistent exploit the option of processing milk into butter, yoghurt, cream or cheese – all of which have reduced amount of lactose.

There is clearly a pattern behind which populations evolved high levels of lactase persistence and which didn't, says a genetics professor Dallas Swallow of University College London. Those with the trait are pastoralists: people who raise livestock. Hunter-gatherers, who do not keep animals, did not acquire the mutations. Neither did "forest gardeners" who cultivated plants. But milk consumption is going down, says a study. Statistics tell a different story. While milk consumption has fallen in the US, in Asia demand is growing, where most people are non-lactase-persistent. Whatever advantages the people there see in milk, they outweigh the potential digestive issues or the need to process the milk.

How did some populations come to retain lactase-persistence while very many others did not as they grew up? [Question ID = 13902]

1. The need to drink milk to avoid starvation led to evolution of lactase-persistence in people earlier deficient in this enzyme [Option ID = 25606]
2. People whose lives centred around livestock came to retain it. [Option ID = 25607]
3. It is a genetic characteristic; in many populations, such as those in Africa, in Asia and South America, this trait is uncommon [Option ID = 25608]
4. Evolution worked in different ways with people in different areas [Option ID = 25605]

Correct Answer :-

- People whose lives centred around livestock came to retain it. [Option ID = 25607]

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2) **Read the following passage and answer the subsequent questions :**

Milk contains a type of sugar called lactose. When we are babies, our bodies make a special enzyme called lactase that allows us to digest the lactose in our mother's milk. But after we are weaned in early childhood, for many people this stops. Without lactase, we cannot properly digest the lactose in milk. But then evolution kicked in: some people began to keep their lactase enzymes active into adulthood. This "lactase persistence" allowed them to drink milk without side effects. It is the result of mutations in a section of DNA that controls the activity of the lactase gene. But in many populations, such as those in Africa, in Asia and South America, the trait is uncommon. Even people who are lactase-non-persistent exploit the option of processing milk into butter, yoghurt, cream or cheese – all of which have reduced amount of lactose.

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Why is it that some grownups can drink and digest milk while others cannot digest it? [Question ID = 13901]

1. All babies can drink and digest milk but some grownups cannot digest any milk [Option ID = 25601]
2. The presence of an enzyme called lactose in milk hinders digestion of milk in some people [Option ID = 25604]
3. Some grownups cannot digest milk as a result of mutations in a section of their DNA that controls the activity of the lactase gene [Option ID = 25603]
4. An enzyme called lactase allows us to digest mother's milk in our infancy, but in case of some people their bodies stop producing it as they grow up. [Option ID = 25602]

Correct Answer :-

- An enzyme called lactase allows us to digest mother's milk in our infancy, but in case of some people their bodies stop producing it as they grow up. [Option ID = 25602]

3) Read the following passage and answer the subsequent questions :

Milk contains a type of sugar called lactose. When we are babies, our bodies make a special enzyme called lactase that allows us to digest the lactose in our mother's milk. But after we are weaned in early childhood, for many people this stops. Without lactase, we cannot properly digest the lactose in milk. But then evolution kicked in: some people began to keep their lactase enzymes active into adulthood. This "lactase persistence" allowed them to drink milk without side effects. It is the result of mutations in a section of DNA that controls the activity of the lactase gene. But in many populations, such as those in Africa, in Asia and South America, the trait is uncommon. Even people who are lactase-non-persistent exploit the option of processing milk into butter, yoghurt, cream or cheese – all of which have reduced amount of lactose.

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Mark the statement that is NOT true: [Question ID = 13903]

1. People who are non-lactase-persistent can use milk products like cheese as they are lactose-deficient [Option ID = 25610]
2. The enzyme lactase helps us digest milk in our infancy [Option ID = 25609]
3. Lactase-deficient or not, because of its health benefits, people everywhere drink milk [Option ID = 25611]
4. It is interesting to note that milk consumption is going up in non-lactase persistent populations of Asia [Option ID = 25612]

Correct Answer :-

- Lactase-deficient or not, because of its health benefits, people everywhere drink milk [Option ID = 25611]

Topic:- DU_J19_MCA_T5

1) Average of ten numbers in a list is 25.If one of the numbers in the list is exchanged with another number the average of the new list increases by 5. What is the new number included in the list , if the original number was 15? [Question ID = 13911]

1. 65 [Option ID = 25643]

2. 50 [Option ID = 25641]
3. 70 [Option ID = 25644]
4. 60 [Option ID = 25642]

Correct Answer :-

- 65 [Option ID = 25643]

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2) **Two's complement of 00000000 is**

[Question ID = 13907]

1. 11111111 [Option ID = 25625]
2. 10101010 [Option ID = 25627]
3. 00000000 [Option ID = 25626]
4. 01010101 [Option ID = 25628]

Correct Answer :-

- 00000000 [Option ID = 25626]

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3) **The code of DOG is ITL , what is the code of ITL?** [Question ID = 13914]

1. MXP [Option ID = 25654]
2. JUM [Option ID = 25656]
3. DOG [Option ID = 25655]
4. NYQ [Option ID = 25653]

Correct Answer :-

- NYQ [Option ID = 25653]

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4) **X works twice as fast as Y . Y alone can finish the work in nine days . X and Y together can finish the work in _____ days.**

[Question ID = 13909]

1. 5 [Option ID = 25634]
2. 4 [Option ID = 25635]
3. 3 [Option ID = 25636]
4. 6 [Option ID = 25633]

Correct Answer :-

- 3 [Option ID = 25636]

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5) **How much of acid is in the 10 liter of a 60% solution, of acid and water solution?**

[Question ID = 13912]

1. 10 [Option ID = 25647]
2. 12 [Option ID = 25646]
3. 18 [Option ID = 25645]
4. 6 [Option ID = 25648]

Correct Answer :-

- 6 [Option ID = 25648]

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6) **What is the next term in the series?**

2, 7, 14, 23, 34, _____ [Question ID = 13913]

1. 53 [Option ID = 25652]
2. 47 [Option ID = 25650]
3. 45 [Option ID = 25649]
4. 51 [Option ID = 25651]

Correct Answer :-

- 47 [Option ID = 25650]

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7)

Study the following C code

```
main()
{   int   i   =  4   ;
        int   j   =  10   ;
            Statements
                of the program
        if ( j  > 0 )
            { int i   =   44  ;
            Statements
                of the program
            }
    }
```

Given

    I   The local value of I is 44.
    II   The global value of I is 4 .

then

[Question ID = 13908]

1. Only II is true [Option ID = 25630]
2. Both I and II are false [Option ID = 25632]
3. Both I and II are true [Option ID = 25631]
4. Only I is true [Option ID = 25629]

Correct Answer :-

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8) $\sqrt{\sqrt{1296 + x^2}} = 60\%$ of 70. The value of x is .

[Question ID = 13910]

1. 6 [Option ID = 25638]
2. 7 [Option ID = 25639]
3. 5 [Option ID = 25637]
4. 8 [Option ID = 25640]

Correct Answer :-

- 6 [Option ID = 25638]

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9)

Which of the following operands have equal precedence, in C programming language?

I   [ ]
II   &
III   <=
IV   ( )

[Question ID = 13905]

1. I and II [Option ID = 25617]
2. I and IV [Option ID = 25619]
3. II and III [Option ID = 25618]
4. II and IV [Option ID = 25620]

Correct Answer :-

- I and IV [Option ID = 25619]

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10) The operator a << b shifts binary representation of integer 'a' by 'b' bit _____ , in C programming language.

[Question ID = 13906]

1. Circularly right [Option ID = 25622]
2. Circularly left [Option ID = 25621]
3. Left [Option ID = 25623]
4. Right [Option ID = 25624]

Correct Answer :-

- Left [Option ID = 25623]