1. Let A={1,2,3,...,10}. Define relation R such that aRb $\Leftrightarrow$ gcd(a,b) =1. Which of the following statements is true with respective to symmetric and transitive properties of the relation?

    a. Symmetric: Yes; Transitive: Yes

    b. Symmetric: No; Transitive: Yes

    c. Symmetric: Yes; Transitive: No

    d. Symmetric: No; Transitive: No

2. Let $f(x) = \frac{1}{x}$, and $g(x) = \frac{1}{1-x}$. Find f(g(f(g(x))))

    a. $\frac{1}{1-x}$

    b. x

    c. $\frac{1-x}{x}$

    d. $\frac{1}{x-1}$

3. Find the sum of digits of the smallest positive 4-digit number which when reversed gives a number that is 9 times the original number.

    a. 10

    b. 12

    c. 18

    d. 15

4. How many 3-digit numbers have digits in strictly increasing order?

    a. 120

    b. 90

    c. 84

    d. 45

5. If $x = \frac{1}{1+\frac{1}{1+\frac{1}{1+\cdots}}}$, find the value of x

    a. $\frac{\sqrt{5}-1}{2}$

    b. $\frac{\sqrt{5}+1}{2}$

    c. $\sqrt{2}$

    d. 1

6. Let $f(x) = \frac{(x^2-2x+1)}{(x^2+x-6)}$. Determine the sum of all integer values of x for which f(x) is undefined or equals 0.

    a. 0

    b. 1

    c. 2

    d. –1

7. A quadrilateral has three angles measuring 70°, 85°, and 95°. The fourth angle is bisected. What is the measure of each part of the bisected angle?
    a. 50°
    b. 55°
    c. 60°
    d. 45°
8. How many diagonals can be drawn from the vertices of a convex 20 sided polygon such that no two diagonals intersect inside the polygon?
    a. 19
    b. 20
    c. 17
    d. 10
9. From an external point P, two tangents PA and PB are drawn to a circle centered at O. If the angle between the tangents is 60°, find the angle ∠AOB.
    a. 60°
    b. 90°
    c. 120°
    d. 100°

10. In triangle ABC, a circle is inscribed. If sides are 8, 15, and 17, find the radius of the incircle.

    a. 5

    b. 4

    c. 3

    d. 2.5

11. A point A(1,2) is rotated 90° counter-clockwise about the origin and then reflected across the y-axis. What are the final coordinates?

    a. (1, 2)

    b. (2, –1)

    c. (–2, –1)

    d. (2, 1)

12. If the ellipse $\frac{x^2}{9} + \frac{y^2}{4} = 1$ is intersected by the line y=mx, what is the maximum possible value of m

    a. $\frac{3\sqrt{2}}{4}$

    b. $\frac{2\sqrt{2}}{3}$

    c. $\frac{4\sqrt{2}}{3}$

    d. $\frac{3\sqrt{2}}{2}$

13. Find the length of the perpendicular dropped from point (1,2) to the line joining (3,−1) and (7,5).

    a. $\frac{11}{\sqrt{13}}$

    b. $\frac{12}{\sqrt{13}}$

    c. $\frac{13}{\sqrt{12}}$

    d. $\frac{10}{\sqrt{13}}$

14. The vertices of a triangle are A(1,1), B(4,2), and C(3,6). Find the area of the triangle.

    a. 5.5

    b. 6

    c. 6.5

    d. 7

15. How many times does the function f(x)=|sinx|+|cosx| attain the value 1 in the interval [0,2π]?

    a. 2

    b. 3

    c. 4

    d. 6

16. Find the minimum value of $\tan x + \cot x$ for $x \in \left(0, \frac{\pi}{2}\right)$.

a. 0

b. 1

c. 2

d. $\sqrt{2}$

17. A rectangle has a perimeter of 36 cms and its diagonal is 15 cms. Find the area of the rectangle.

a. 49.5

b. 50

c. 54

d. 45

18. A trapezium has bases 12 cms and 8 cms, height 5 cms. A diagonal divides it into two regions of equal area. Find the length of that diagonal.

a. 10

b. 11

c. 12

d. 13

19. A solid cylinder of height 20 cms and radius 7 cms has a cylindrical hole of radius 3 cms drilled all the way through along its axis. Find the volume of the remaining solid.

    a. 800π
    b. 760π
    c. 820π
    d. 900π

20. A square garden has a side of 20 m. A path 2 m wide runs along the inside of the square. Find the area of the path.

    a. 144
    b. 128
    c. 150
    d. 160

21. A box has 4 red, 3 green, and 2 blue balls. Two balls are drawn without replacement. What is the probability that the first is red and the second is not red?

    a. $\frac{4}{27}$
    b. $\frac{5}{18}$
    c. $\frac{5}{16}$
    d. $\frac{3}{10}$

22. A discrete variable X takes values 1, 2, 3, 4 with probabilities proportional to the square of the value. Find the mean of X.

    a. 3

    b. $\frac{10}{3}$

    c. $\frac{11}{3}$

    d. $\frac{9}{2}$

23. How many 5-digit numbers can be formed using digits 1–5 with no repetition and such that the digit 2 is not in the middle position?

    a. 96

    b. 100

    c. 80

    d. 104

24. If each value in a dataset with mean 40 and standard deviation 5 is multiplied by 3 and increased by 4, find the new mean and standard deviation.

    a. Mean = 124, SD = 15

    b. Mean = 120, SD = 15

    c. Mean = 120, SD = 5

    d. Mean = 124, SD = 19

25.How many distinct arrangements of the word STATISTICS are there?

a. 40320

b. 50400

c. 30240

d. 45360

26.Evaluate $\int \frac{x}{(1+x^2)^2} dx$

a. $\frac{1}{2(1+x^2)} + C$

b. $-\frac{1}{(1+x^2)} + C$

c. $-\frac{1}{2(1+x^2)} + C$

d. $\frac{1}{(1+x^2)^2} + C$

27.Evaluate $\lim_{x \to 0} \frac{(tanx - sinx)}{x^3}$

a. 1

b. 0

c. $\frac{1}{2}$

d. $\frac{2}{3}$

28. The value of $\int \frac{1}{(1+tan^2x)}\,dx$ is

a. $\tan x + C$

b. $\frac{x}{2} + \frac{sin2x}{4} + C$

c. $\frac{sin2x}{4} + C$

d. $\frac{x}{2} - \frac{sin2x}{4} + C$

29.If $x^2 + y^2 = (1 + xy)^2$, find $\frac{dy}{dx}$ at the point x=1, y=0.

a. 0

b. 1

c. 2

d. Undefined

30.Find the equation of the tangent to the curve $y = \frac{x}{1+x^2}$ at the point where the function attains its maximum.

a. y=x

b. $y = \frac{1}{2}$

c. $y = x + \frac{1}{2}$

d. x=1

31. Find the area bounded between y=x and $y=x^2$ between x=0 and x=1

a. $\frac{1}{3}$

b. $\frac{1}{4}$

c. $\frac{1}{6}$

d. $\frac{1}{2}$

32. The question has two statements — Assertion (A) and Reason (R). Choose the correct option:

(A): The function $f(x) = \frac{(x^2-1)}{x-1}$ has a removable discontinuity at x=1.

(R): The function (f defined in (A)) is undefined at x=1, but the limit exists.

a. Assertion (A) is true, (R) is true, and (R) is the correct explanation of (A)

b. (A) is true, (R) is true, but (R) is not the correct explanation of (A)

c. (A) is true, (R) is false

d. (A) is false

33. The question has two statements — Assertion (A) and Reason (R). Choose the correct option:

(A): The remainder when 7^{100} is divided by 100 is 1.

(R): By Euler's theorem, if a and n are coprime, $a^{\phi(n)} \equiv 1 \bmod n$

a. Assertion (A) is true, (R) is true, and (R) is the correct explanation of (A)
b. (A) is true, (R) is true, but (R) is not the correct explanation of (A)
c. (A) is true, (R) is false
d. (A) is false

34. How many integers $n \in [1,1000]$ are there such that $n \equiv 3 \pmod 5$ and $n \equiv 1 \pmod 4$?

a. 49
b. 50
c. 45
d. 40

35. Let $f(x)=x^4+x^3+x^2+x+1$. How many real roots does f(x) have?

a. 0
b. 1
c. 2
d. 3

36. If f : {1, 2, 3, . . .} → {0, ±1, ±2, . . .} is defined by

$$f(x) = \begin{cases} \frac{x}{2}, & if\ x\ is\ even \\ -\frac{x-1}{2}, & if\ x\ is\ odd \end{cases}$$

Then the value of $f^{-1}(-100)$ is

a. 100

b. 199

c. 200

d. 201

37. If $f(x) = \begin{cases} x, x \in \mathbb{Q} \\ 0, x \notin \mathbb{Q} \end{cases}$ $and\ g(x) = \begin{cases} 0, x \in \mathbb{Q} \\ x, x \notin \mathbb{Q} \end{cases}$

Then $(f - g)$ is

a. one-one, onto

b. neither one-one nor onto

c. one-one but not onto

d. onto but not one-one

38. The range of the function

$f(x) = \frac{x^2+x+2}{x^2+x+1}, x \in (-\infty, \infty)$ is

a. $[1, \infty)$

b. $\left(1, \frac{11}{7}\right]$

c. $\left(1, \frac{7}{3}\right]$

d. $\left[1, \frac{5}{3}\right]$

39. The least number which when divided by 6, 9, 12, 15 and 18 leaves the same remainder 2 in each case is

a. 180

b. 182

c. 178

d. 176

40. If the HCF of the two numbers is 4 and the product of these two numbers is 224, find the LCM of numbers.

a. 14

b. 28

c. 56

d. 72

41. If a five-digit number a2a5a is divisible by 11, what is the value of $(a^2 - 2a)$?

a. 0

b. 8

c. 15

d. 24

42. If roots of the equation $8x^3 - 14x^2 + 7x - 1 = 0$ are in GP, then find the roots.

a. $1, \frac{1}{3}, \frac{1}{9}$

b. $1, \frac{1}{4}, \frac{1}{17}$

c. $1, \frac{1}{2}, \frac{1}{4}$

d. $1, \frac{1}{2}, \frac{1}{3}$

43. If $(x - 6)$ is the HCF of $x^2 - 2x - 24$ and $x^2 - kx - 6$, then the value of k is:

a. 3

b. 5

c. 6

d. 8

44. The length of the chord of a circle of radius 10 cm which is at a distance 6 cm from the center is

a. 8 cm

b. 12 cm

c. 16 cm

d. 20 cm

45. Focus of parabola $y^2 = -12x$ is:

a. (-3, 0)

b. (6, 0)

c. (0, 3)

d. (0, 6)

46. Distance of point (3, 4, 5) from plane $2x + 3y - 6z + 1 = 0$ is

a. $\frac{12}{7}$

b. $\frac{11}{7}$

c. $\frac{16}{7}$

d. $\frac{18}{7}$

47. Find the value of $\sin^2 10 + \sin^2 20 + \sin^2 30 + \cdots + \sin^2 80$

a. 2

b. 3

c. 1

d. 4

48. If $\sec\theta + \tan\theta = \sqrt{3}$, then the positive value of $\sin\theta$ is:

a. 0

b. $\frac{1}{2}$

c. $\frac{\sqrt{3}}{2}$

d. 1

49. If log 2 = 0.3010 and log 3= 0.4771, the value of $\log_5 512$ is

a. 2.870

b. 2.967

c. 3.876

d. 3.912

50. Let f(x) = sin x, g(x) = x^2, h(x) = log x. If F(x) = h(f(g(x))), then F′(x) is equal to

a. $2x\ \cot(x^2)$

b. $2\ CSC^3\ x$

c. $-2\ CSC^2\ X$

d. $None\ of\ these$

51. Select the set of letters to be sequentially placed in the gaps in the following letter series

_FG_N_EF_M_O

a. MEOGN

b. EMNOG

c. EMOGN

d. EGOMO

52. M, N, O, P, Q, R, S, and T are sitting in a row facing North.

(i) M is fourth to the right of Q

(ii) T is fourth to the left of P

(iii) O and R, who are not at the ends, are neighbours of N and Q, respectively

(iv) T is immediately to the left of M, and M is a neighbour of N

Which of the following pairs are not sitting adjacent to each other

a. RS

b. ST

c. MO

d. RQ

53. W is coded as (-), X as (+) Y as (*) and Z (/).

Evaluate: 5 W 8 X 6 Y 5 Z 2 Y 3.

a. 43

b. 52

c. 42

d. 32

54. If **BLACKBOARD** is written as **DRAOBKCALB**, which letter will be in the sixth place when counted from the left if **PERMANENCE** is written in that code?

a. A

b. N

c. E

d. M

55. "He is the son of the only son of my grandfather," Madura says, pointing to a photograph. How is the man in the photograph related to Madura?

a. Uncle

b. Nephew

c. Brother

d. Cousin

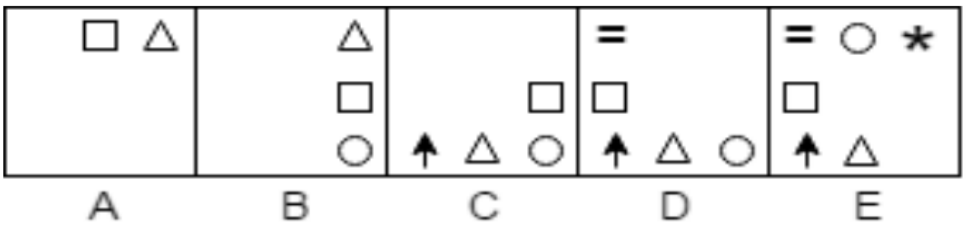
56. Here are some words translated from a certain language:

1. nuvoklair means cold wind
2. klairmesso means wind storm
3. messobrin means storm cloud

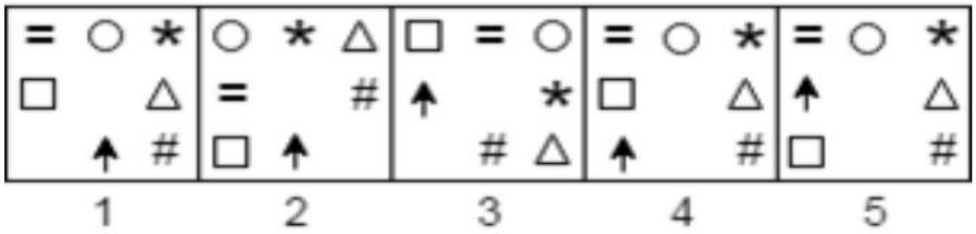
Which word could mean “cold cloud”?

a. nuvobrin
b. klairnuv
c. brinmesso
d. messoklair

57. Observe the problem figures given below and select one option from the answer figures that will continue the same pattern followed in the problem figures.



Answer Figure



a. 1

b. 2

c. 3

d. 4

58. In a class of some students standing in a straight line, the position of David is 31st from the left end and 21st from the right end. How many students are there in the class?

a. 55

b. 50

c. 51

d. 53

59. The question below contains a small paragraph followed by a question on it. Read each paragraph carefully and answer the question given below it.

Honesty is more than just telling the truth; it is living with integrity in all circumstances. It demands courage, especially when a lie would be easier or more convenient. An honest person places value on truth even at personal cost. The passage best supports the statement that:

a. Lying is always more beneficial than telling the truth.

b. Honesty requires sacrifice and bravery.

c. People rarely value honesty anymore.

d. Convenience is the most important virtue.

60. Find the statement that must be true according to the given information in the questions:

Sarita is older than her cousin Shilpa. Shilpa's brother Shaunak is older than Sarita. When Shilpa and Shaunak are visiting Sarita, all three like to play a game of Snakes and Ladders. Shilpa wins more often than Sarita does.

a. When he plays Snakes and Ladders with Sarita and Shilpa, Shaunak often loses.
b. Of the three, Sarita is the oldest.
c. Sarita hates to lose at Snakes and Ladders.
d. Of the three, Shilpa is the youngest.

61. Rohit’s bag was snatched by a burglar. Rohit ran behind the thief. They both ran north for 500 meters and then turned west. The burglar caught pace and ran a kilometer quickly before turning right. Rohit took a right halfway before the thief. Both ran for 250 meters after taking their respective right turns and stopped. How far is Rohit from the burglar?

a. 500 meters to the left
b. 250 meters to the left
c. 250 meters to the right
d. 500 meters to the right

62. Ivaan is six years old. For the past one year he has been requesting his parents to let him get a musical instrument called the Kalimba. It is a wooden percussion instrument of African origin. Fearing he might hurt himself; his parents have agreed to buy him a flute. Ivaan is not yet sure which flute would he want to get. Find the statement that is true:

a. Ivaan's parents want him to be a flute player
b. Kalimba and flute are equally easy to play
c. Ivaan and his parents do not like Africa
d. Kalimba is native to Africa

63. In the following question, two statements are given followed by four conclusions numbered I, II, III and IV. You have to take the given statements to be true even if they seem to be at variance from the commonly known facts and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts.

Statements: All shirts are pockets. All pockets are sleeves.

Conclusions:

I. All shirts are sleeves.

II. All sleeves are shirts.

III. All pockets are shirts.

IV. Some sleeves are shirts.

a. Only II and IV floow

b. Only I and IV follow

c. Only II and III follow

d. All follow

64. Look at this series: BCB, DED, FGF, HIH, ___ What should fill the blank?

a. JKJ

b. HJH

c. IJI

d. JHJ

65. In each of the following questions, two statements numbered I and II are given. There may be cause and effect relationship between the two statements. These two statements may be the effect of the same cause or independent causes. These statements may be independent causes without having any relationship. Read both the statements in each question and mark your answer:

I. Rural and semi-urban areas in the country have been suffering due to load shedding for quite some time.

II. If the Government is not able to overcome the power crisis, load shedding will be extended even to the urban areas.

a. Statement I is the cause and statement II is its effect

b. Statement II is the cause and statement I is its effect

c. Both the statements I and II are effects of independent causes

d. Both the statements I and II are effects of some common cause

66. The total of the ages of Amar, Akbar and Anthony is 70 years. What was the total of their ages three years ago?

a. 61 years

b. 62 years

c. 64 years

d. 67 years

67. Suman walks 10 kms to the West. She turns right and walks 13 kms. She then turns right and walks 10 kms. Finally, she turns right and walks 23 kms. In which direction is the starting point from the endpoint?

a. North

b. West

c. East

d. South

68. Which of the following words would appear first in a dictionary?

a. Elephant

b. Eagle

c. Ear

d. Elf

69. A, B, C, D, and E are sitting in a row. B is to the left of C but right of A. D is to the right of C and E is at the right end. Who is sitting in the middle?

a. A

b. B

c. C

d. E

70. Four people—Ali, Bina, Carlos, and Dana—meet every Saturday for coffee and discussion. One person always arrives early and orders everyone's coffee. The one who orders coffee sits next to Carlos. Dana never arrives early. Ali always sits opposite the early bird. Who usually arrives first?

    a. Ali
    b. Bina
    c. Carlos
    d. Dana

71. The positions of how many digits in the number will remain same after the digits within the number 2138574 are arranged in ascending order?

    a. None
    b. Four
    c. Two
    d. Three

72. Look at this series: M3, L6, __, J24, I48, ...What should fill the blank?

    a. K12
    b. K8
    c. K18
    d. K15

73. Complete the following series: TBLD, VEPI, XHTN, _____

a. ZJVP

b. ZVJP

c. ZKXS

d. ZKXO

74. Statement: “In my opinion, you should hire a professional trainer for your fitness goals,” said Matthew to Darshan.

Assumptions:

(i) Professional trainers help achieve fitness goals more effectively than doing it alone.

(ii) Darshan is unlikely to follow Matthew’s suggestion.

a. Only assumption (i) is implicit

b. Only assumption (ii) is implicit

c. Either (i) or (ii) is implicit

d. Both (i) and (ii) are implicit

75. In each of the following questions, arrange the given words in a meaningful sequence and then choose the most appropriate sequence from amongst the alternatives provided below:

(1) Probation

(2) Interview

(3) Selection

(4) Appointment

(5) Advertisement

(6) Application

a. 5, 6, 2, 3, 4, 1

b. 5, 2, 6, 3, 4, 1

c. 6, 5, 2, 3, 4, 1

d. 5, 6, 3, 2, 4, 1

76. **Fill in the blanks with the appropriate words from the options below:**

Though outwardly humble, the candidate's tone was laced with subtle _____, a rhetorical strategy that allowed her to appear modest while subtly asserting superiority. Her speeches often employed this kind of linguistic _____, balancing self-deprecation with strategic ego.

a. grandiosity, sincerity
b. condescension, restraint
c. irony, subterfuge
d. arrogance, decorum

77. **Fill in the blanks with the appropriate words from the options below:**

Though the artist's work was often controversial, critics praised the way he was able to seamlessly _____ tradition while still challenging cultural norms. His approach to art was a _____ that questioned the very foundation of aesthetic values.

a. preserve, revolution
b. subvert, critique
c. glorify, tribute
d. abandon, innovation

78. **Fill in the blanks with the appropriate words from the options below:** Dyes and paints are substances that are used to _____or give colour to a _____range of objects. The substances that _____colour to dyes are called dyestuffs. These when dissolved in water _____the fibres of fabrics by means of a chemical reaction.

a. tint, large, give, penetrate
b. mark, humongous, make, perforate
c. stain, massive, produce, enter
d. blemish, huge, provide, suffuse

79. **Fill in the blanks with the appropriate words from the options below:** It is a fact that penguins swim in the water and _____ enjoy themselves in wet_____. However, Pierre, the jackass penguin, dislikes the wet stuff. This is because Pierre is losing his feathers; he is going_____, especially around his bottom. Penguins _____on their waterproof feathers for warmth; therefore, losing his feathers made Pierre unwilling to jump in the penguin tank.

a. Regularly, settings, hairless, trust
b. Occasionally, circumstances, bare, bank
c. Hardly, situations, plain, count
d. Generally, conditions, bald, rely

80. Rearrange the sentences given below in their logical order to form a coherent paragraph:

A) In December 2022 Peru submitted a detailed conservation report on the Historic Sanctuary of Machu Picchu.

B) The World Heritage Committee will review progress at its 2023 session.

C) The report outlines measures to manage tourism pressure and protect fragile terraces.

D) Earlier recommendations had called for stricter visitor limits and improved waste management.

a. A D B C

b. A C D B

c. C A D B

d. D A C B

81. Rearrange the sentences given below in their logical order to form a coherent paragraph:

A) The report warns that 622 million people could still live in extreme poverty by 2030.

B) This figure represents about 7.3 percent of the global population.

C) Between 2013 and 2019, 150 million people escaped extreme poverty.

D) On the current path, only 69 million are projected to do so between 2024 and 2030.

a. A B D C

b. A D B C

c. B A C D

d. A C D B

82. Given below are five sentences. The sentence labelled A is in its correct place. The four that follow are labelled B, C, D and E, and need to be arranged in the logical order to form a coherent paragraph/passage. From the given options, choose the most appropriate option.

A. The Rosetans began buying land on a rocky hillside connected to Bangor by a steep, rutted wagon path.

B. In the beginning, they called their town New Italy.

C. They built closely clustered two-story stone houses with slate roofs on narrow streets running up and down the hillside.

D. But they soon changed it to Roseto, which seemed only appropriate given that almost all of them had come from the same village in Italy.

E. They built a church and called it Our Lady of Mount Carmel and named the main street, on which it stood, Garibaldi Avenue, after the great hero of Italian unification.

a. CEBD

b. BDCE

c. ECBD

d. EBDC

83. Rearrange the sentences given below in their logical order to form a coherent paragraph:

A. In January of 1882, a group of eleven Rosetans - ten men and one boy-set sail for New York.

B. In 1894 alone, some twelve hundred Rosetans applied for passports to America, leaving entire streets of their old village abandoned.

C. Those immigrants, in turn, sent word back to Roseto about the promise of the New World, and soon one group of Rosetans after another packed their bags and headed for Pennsylvania, until the initial stream of immigrants became a flood.

D. The following year, fifteen Rosetans left Italy for America, and several members of that group ended up in Bangor as well, joining their compatriots in the slate quarry.

E. They spent their first night in America sleeping on the floor of a tavern on Mulberry Street, in Manhattan's Little Italy from where they ventured west, eventually finding jobs in a slate quarry ninety miles west of the city near the town of Bangor, Pennsylvania.

a. CDEB

b. BDCE

c. EDCB

d. DECB

84. Choose the option closest in meaning to the word underlined.

They believed their plan was <u>infallible</u> and would definitely succeed.

a. positive

b. flawless

c. reliable

d. clear

85. Choose the option closest in meaning to the word underlined.

I like growing adeniums because they can <u>thrive</u> in low water conditions.

a. Flourish

b. Succeed

c. Grow

d. Bloom

86. Choose the option closest in meaning to the word underlined.

Sports provides us with examples of players who have overcome <u>adversities</u> to achieve success.

a. hurdles

b. hardships

c. setbacks

d. calamities

87. Choose the option closest in meaning to the word underlined.

James shook his head in exasperation as his presentation was interrupted repeatedly.

a. Vexation

b. Agreement

c. Botheration

d. Disgust

88. Choose the option most nearly opposite in meaning to the word underlined

I tend to be a little grouchy until I've had my morning coffee.

a. Grumpy

b. Anxious

c. Cheerful

d. Pleased

89. Choose the option most nearly opposite in meaning to the word underlined

The archaic ruins of Babylon lie near the town of Al-Ḥillah, Iraq.

a. Current

b. Old

c. Dreary

d. Well-Maintained

90. Choose the option that is closest in meaning to the underlined phrase/idiom.

I've never met anyone like Rohit. He's full of beans.

a. Nonsense
b. Energy
c. Foolish
d. smart

91. Choose the option that is closest in meaning to the underlined phrase/idiom.

The instructions say that spaghetti should be cooked al dente.

a. Firm
b. Soft
c. Hard
d. Stiff

92. Change the following sentence from direct to indirect speech:

Thara said, "I woke up feeling ill, so I didn't go to work."

a. Thara said that she woke up feeling ill, so she hadn't gone to work.
b. Thara said that she had woken up feeling ill, so she didn't go to work.
c. Thara said that she woke up feeling ill, so she didn't go to work.
d. Thara said that she woke up felt ill, so she hadn't gone to work.

93. Five sentences are given below, only four of which can be put together to form a meaningful and coherent short paragraph. Identify the odd one out.

P: When faced with a decision of whether to flee or fight in the face of an enemy, those who reflected carefully on the problem and explored alternatives did not survive long enough to reproduce

Q: I believe that for most of our evolutionary past, humans benefited from a bias for action

R: Today, we often make decisions as professionals that matter to thousands of people over time scales of many years.

S: One of the hallmarks of human behavior, going back tens of thousands of years, is that we use our brains to plan for the future

T: This is an oversimplification, of course

a. Q
b. R
c. S
d. T

94. From the given options, choose the one that completes the paragraph in the most appropriate way.

The value of case material and role play lies in their capacity to stimulate the imagination and enable course members to engage with people's concerns and complexities within the supportive environment of the course. In this way, course members are able to develop the understanding and skills of counselling and prepare themselves to work effectively with their future clients. There are many challenges for course members in experiential work. If they are used to a more cognitive way of working, they may feel very uncertain and vulnerable about having the spotlight upon their feelings and behaviour.

a. Case study and role play methods can be as exciting and challenging for the trainer as for the learner.
b. Role play highlights the differences between how people think they are communicating and how their communication is perceived by others.
c. Unlike many other areas of education and training, relationship work is centrally concerned with ourselves.
d. Using these methods, however, is considerably less 'safe' than using more didactic methods.

95. Read the sentences given below. Decide if there is an error in any of the parts marked a, b, and c. If yes, mark that. If there is no error, mark d.

Gymnastics a	are b	my favourite sport. c	No error d

a. a

b. b

c. c

d. d

96. Read the sentences given below. Decide if there is an error in any of the parts marked a, b, and c. If yes, mark that. If there is no error, mark d.

Three days a	isn't long enough b	for a good holiday. c	No error d

a. a

b. b

c. c

d. d

Read the passage below and answer the questions that follow:

In an unassuming building on an industrial estate outside Oxford, Michal Bilski sits in a windowless room with electric fly swatters and sticky tape on the wall, peering down a microscope. On the slide before him is a line of mosquito eggs that he collected less than an hour previously and put into position with a brush. Bilski manoeuvres a small needle filled with a DNA concoction and uses it to pierce each egg and inject a tiny amount. Normally in a day between 500 to over 1,000 eggs are injected. Bilski, a research and development team leader for the biotechnology company Oxitec, is carrying out one of the early stages in the process of making genetically modified (GM) mosquitoes.

It is hoped the insects that hatch will prove instrumental in the fight against diseases such as malaria, dengue fever, Zika and chikungunya of which mosquitoes are vectors.

Last year, Oxitec released tens of thousands of GM mosquitoes in Djibouti, where there has been a resurgence of malaria caused by an invasive species. It was the first time such mosquitoes have been released in east Africa and the second time on the continent.

It follows multiple releases of modified mosquitoes in Florida and Brazil to combat dengue fever, a neglected tropical disease.

The impact of these mosquitoes on malaria transmission could be significant, believes Lottie Renwick, head of strategy for Malaria No More UK. “They will play a really major role and be game changing,” she says, but adds that the intervention needs to work alongside other tools such as mosquito nets and injections.

Malaria is one of the biggest killers of children under five. According to the World Health Organization, in 2023 there were an estimated 263m cases of malaria and 597,000 deaths in 83 countries. Africa bears the greatest burden and children under five accounted for more than three-quarters of all malaria deaths.

Djibouti had been close to eliminating the disease, but cases jumped from just 27 in 2012 to more than 73,000 in 2020. The cause was a species of mosquito that came from south Asia and the Arabian peninsula into Africa.The Anopheles stephensi mosquito has since been detected many West African countries. If this mosquito is left unchecked an additional 126 million people on the continent will be at risk of malaria. It is a big threat because it thrives in urban environments, unlike other malaria-carrying mosquitoes in Africa that primarily breed in rural areas. It has also been found to be resistant to many of the insecticides used to control mosquito populations. They bite in the evening before most people’s bedtime – not in the middle of the night like other mosquitoes – making bed nets less effective as protection.

In the laboratory, once every egg has been injected with the DNA, they are taken to a warm and humid room in which the conditions are ripe for them to mature into adults. White shelves line the walls; on one side of the room are trays of water with mosquito larvae in them, while on the adjacent wall are plastic boxes filled with fully grown insects. One box has a contraption containing blood on top for the female mosquitoes to feed on. Inside the box the mosquitoes' bottoms are pointing up, a sign that these insects carry the parasite that causes malaria.

The lab-produced mosquitoes carry a "self-limiting" gene that blocks normal cellular processes, which means if they mate, any female offspring will die. The male progeny, which do not bite, will survive and go on to mate with other wild females. With sustained releases of these "friendly mosquitoes", more females die off, greatly reducing the mosquito population and the spread of malaria.

Scientists at Oxitec and malaria and mosquito experts insist these GM mosquitoes are safe. After evaluating the risk, the US Food and Drug Administration in 2016 and the US Environmental Protection Agency in 2022 confirmed that the mosquitoes did not pose a threat to humans or the environment.

97. Which one of the following statements about the *Anopheles stephensi* mosquito is NOT true?

a. They are from the Arabian Peninsula and Asia.

b. The flourish even in the city and developed areas.

c. They can penetrate and bite through mosquito nets.

d. They are impervious to insect repellents and deterrents.

98. In the phrase 'of which mosquitoes are vectors', it can be inferred that the word *vector means:*

a. Victim of a disease or war

b. A disease carrying organism

c. An entity that has a direction

d. A survivor or warrior of illness

99. According to the text, which one of the following is true about the research?

a. The GM mosquitoes were first released in Brazil, a tropical country.

b. Djibouti is the first nation to have an invasive species of mosquito.

c. 75% of the victims of malarial deaths in Africa are children under five.

d. The GM project cannot succeed without other medical interventions

100. The overall tone of the text is:

a. Objective and optimistic

b. Subjective and hopeful

c. Strong and assertive

d. Grim and cautionary