DU MCA -2012

Part-I Mathematics

1. If two roots of the equation
$$32x^3 - 48x^2 + 22x - 3 = 0$$
are in the ratio 1:2, then the third root of this equation is

(a) $\dfrac{1}{4}$ (b) $\dfrac{1}{2}$ (c) $\dfrac{3}{4}$ (d) $\dfrac{3}{2}$

2. If ratio of the product of roots of the equation $9x^3 + 4x^2 + 2x + \alpha = 0$ to the sum of the roots of the equation , $9x^3 + \beta x^2 + 6x + 3 = 0$ is 4 : 3, then $\alpha + \beta; \alpha - \beta$ is equal to

(a) 1 : 5   (b) 7 : 1   (c) 5 :3   (d) 3: 7

3. If $\cos\alpha + 2\cos\beta + 3\cos\gamma = 0$,
$$\sin\alpha + 2\sin\beta + 3\sin\gamma = 0$$
and $\sin 3\alpha + 8\sin 3\beta + 27\sin\gamma = k\sin(\alpha + \beta + \gamma)$,
then k is equal to

(a) 27   (b) 18   (c) 9   (d) 3

4. The radius of the circle given by the equation
$$|z - i| = 2|z + 2i| \text{ is}$$

(a) $\dfrac{1}{3}$ (b) $\dfrac{1}{2}$ (c) 2   (d) 3

5. The points in the Argand plane with affixes – 2-3i, 1+i and -2 + i

(a) are collinear
(b) form an isosceles triangle
(c) from an equilateral triangle
(d) form a right angled triangle

6. If the matrix $A = \begin{bmatrix} 1 & 2 & 3 \\ 2 & 2 & -1 \\ 1 & -3 & 4 \end{bmatrix}$ satisfies the

equation $x^3 + \lambda x^2 + 4x + \mu = 0$, then the ordered pair (λ, μ) is equal to

(a) (-7, 37)   (b) (7, 37)   (c) (7,-37)   (d) (-7, -37)

7. If matrix $A = \begin{bmatrix} 1 & 0 & 0 \\ 1 & 0 & 1 \\ 0 & 1 & 0 \end{bmatrix}$, then A^{-1} is equal to

(a) $-A^2 + A + 1_3$ (b) $A^2 - A + 1_3$
(c) $-A^2 - A - 1_3$ (d) $A^2 + A - 1_3$

8. If $A = \tan\alpha \begin{bmatrix} 0 & 1 \\ -1 & 0 \end{bmatrix}$ and $(1_2 + A) \begin{bmatrix} \sin\alpha & \cos\alpha \\ -\cos\alpha & \sin\alpha \end{bmatrix} = k \begin{bmatrix} 0 & 1 \\ -1 & 0 \end{bmatrix}$,
then k is equal to

(a) $\tan\alpha$ (b) $\cot\alpha$ (c) $\cos ec\,\alpha$ (d) $\sec\alpha$

9. Which of the following sets is not a group ?

(a) $G_1 = \{0, 3, 6, 9\}$ w.r.t. $\oplus_{12}$
(b) $G_2 = \{0, 4, 8, 12\}$ w.r.t. $\oplus_{16}$
(c) $G_3 = \{1, 3, 5, 7\}$ w.r.t. $\oplus_{14}$
(d) $G_4 = \{1, 4, 7, 13\}$ w.r.t. $\oplus_{15}$

10. Consider the following three sets in R^3:
$S_1 = \{(1,3,2), (1,2,3), (3,7,8)\}$; $S_2 = \{2,2,-1),(-2,3,1),$
$(6,-4,-3)\}$ and $S_3 = \{(1, 3,-4), (3,-6, 8), (2, -9, 12)\}$.
Now answer which of the following is TRUE ?

(a) S_1 is linearly dependent but S_2, S_3 are not.
(b) S_2 is linearly dependent but S_3, S_1 are not
(c) S_3 is linearly dependent but S_1, S_2 are not.
(d) S_1, S_2, S_3 are linearly dependent.

11. $\displaystyle\lim_{x \to 1-0} \dfrac{\sqrt{\pi} - \sqrt{2\sin^{-1} x}}{\sqrt{1-x}}$ is equal to

(a) $\sqrt{\dfrac{2}{\pi}}$ (b) $\sqrt{\dfrac{\pi}{2}}$ (c) $\sqrt{\pi}$ (d) $\sqrt{\dfrac{1}{\pi}}$

12. A fraction f is defined by
$$f(x) = \begin{cases} (x-2)^2 & \text{if } x \le 0 \\ 3x - 4 & \text{if } 0 < x \le 2; \\ 3x^2 - 5x & \text{if } x > 2 \end{cases}$$
then f is continuous

(a) At both x = 0, 2
(b) At x =0 but not a x =2
(c) At x =2 but not at x = 0
(d) Neither at x = 0 nor at x = 2.

13. If $x^{-1/5}, y^{6/5} = x + y$, then $\dfrac{dy}{dx}$ is equal to

(a) $\dfrac{x}{y}$ (b) $-\dfrac{x}{y}$ (c) $-\dfrac{y}{x}$ (d) $\dfrac{y}{x}$

14. If $z = \tan^{-1}\left(\dfrac{x^4 - x^2 y^2 + y^4}{x^2 + y^2}\right)$ then $x\dfrac{\partial z}{\partial z} + y\dfrac{\partial z}{\partial y}$ is

equal to
(a) $\cos 2z$ (b) $\sin 2z$ (c) $-2\sin 2z$ (d) $-2\cos 2z$

15. The number of asymptotes of the curve $(y-1)^2(x^2 - 9) = x^4 + 7$ is
(a) 4 (b) 2 (c) 2 (d) 1

16. The point (3, 2) on the curve
$(x - 3)^2(x - 1) = y^2 - 4y + 4$
(a) a node (b) a cusp
(c) a conjugate point (d) not a double point

17. $\displaystyle\int_1^2 \dfrac{dx}{(x^2 - 2x + 4)^{3/2}} = \dfrac{k}{k+5}$, then k is equal to
(a) 4 (b) 2 (c) 2 (d) 1

18. The integral $\displaystyle\int_{-2}^2 (x - |x|)\,dx$ is equal to

(a) 2 (b) 0 (c) -2 (d) -4

19. If $A = \{0, 1, \dfrac{1}{2}, \dfrac{1}{3}, \dfrac{1}{4}, \ldots\}$ and A' denotes its
derived set, then which one of the following is TRUE ?
(a) $A \cap A' = 0$ (b) $A \subset A'$
(c) $A' \subset A$ (d) $A = A'$

20. If $a = 2, b = 3, |x - a| < \dfrac{1}{a}$ and $|y - b| < \dfrac{1}{b}$, then
$|x + y - (a + b)|$ is less than

(a) $\dfrac{1}{a} - \dfrac{1}{b}$ (b) $\dfrac{1}{a} + \dfrac{1}{b}$

(c) $\dfrac{1}{b} - \dfrac{1}{a}$ (d) $a - b$

21. Which of the following is not true ?
(a) Union of any collection of closed sets is closed.
(b) Union of a finite collection of closed sets is
   closed.
(c) Intersection of a finite collection of open sets is
   open.
(d) Intersection of any collection of open sets may
   not be open.

22. If a and b be the largest and the smallest values
respectively of the function $?$ given by
$$f(x) = x^3 - 18x^2 + 96x, \qquad x \in [2, 9], \text{ then}$$
(a, b) is equal to
(a) (160, 135) (b) (160, 128)
(c) (135, 128) (d) (128, 79)

23. $\displaystyle\lim_{x \to -1} \dfrac{1}{x+1}\left(\dfrac{1}{x+5} + \dfrac{1}{3x-1}\right)$ is equal to

(a) -1 (b) $-\dfrac{1}{2}$ (c) $-\dfrac{1}{4}$ (d) 0

24. The number of real values of λ for which the
equation, $x^4 + 6x^2 - 16x + \lambda = 0$ has two distinct
roots in $[0,1]$ is
(a) 4 (b) 1 (c) 1 (d) 0

25. If $\vec{r} = (t^3 - 1)\hat{i} + (t+1)\hat{j} - (t^2 - 1)\hat{k}$, then
$\dfrac{d\vec{r}}{dt} \times \dfrac{d^2\vec{r}}{dt^2}$ at $t = 1$, is equal to
(a) $-2\hat{i} + 6\hat{j} + 6\hat{k}$ (b) $2\hat{i} - 6\hat{j} - 6\hat{k}$
(c) $-2\hat{i} - 6\hat{j} - 6\hat{k}$ (d) $-2\hat{i} + 6\hat{j} - 6\hat{k}$

26. If $\vec{f} = \vec{f}(x, y, z) = (x + 2y + 3z)\hat{i} + (4x - 3y + 2z)\hat{j}$
$+ (3x - 2y + az)\hat{k}$ be the given vector, then the value
of a for which div $\vec{f} = 0$, is
(a) 0 (b) 1 (c) 2 (d) 3

27. If $\vec{f} = (\sin y + z)\hat{i} + (x\cos y - z)\hat{j} + (x - y)\hat{k}$ then
$\vec{f}$ curl $\vec{f}$ is equal to
(a) 1 (b) 0 (c) -1 (d)-2

28. The order of the D.E. whose general solution is
given
$$y = (c_1 + c_2)e^{2x + c_3} + (c_4 + c_5)\sin(6x + c_6)$$
(where $c_i, i = 1, 2, ---, 6$ are arbitrary constants) is
(a) 6 (b) 5 (c) 4 (d) 3

29. If a be the degree and b be the order of the D.E.
$$\left[1 + \left(\dfrac{dy}{dx}\right)^2\right]^{5/3} = \dfrac{d^2 y}{dx^2}, \text{ then the pair}(a, b) \text{ is equal to}$$
(a) (1, 10) (b) (2,3) (c) 5,3 (d) (3,2)

30. The D.E. of the family of curves
$y = e^x(a\cos x + b\sin x)$, where a and b are
arbitrary constants, is
(a) $y_2 - 2y_1 + 2y = 0$ (b) $y_2 - 2y_1 - 2y = 0$
(c) $y_2 + 2y_1 + 2y = 0$ (d) $y_2 + 2y_1 - 2y = 0$

31. The integrating factor of the D.E.
$$xy\,dy + (x^2 + y^2 + x)\,dx = 0, \text{ is}$$

(a) x^2 (b) x (c) $\dfrac{1}{x}$ (d) $\log x$

32. The solutions of the D.E.

$(x^2 z - y^3)\,dx + 3x^2 y\,dy + x^3 dz = 0$, is

(a) $zx + y^3/x = c$ (b) $zx - y^3/x = c$

(c) $xz - y^2/x^2 = c$ (d) $xz + y^2/x^2 = c$

33. The equation of the tangent to the parabola,

$$y^2 = 4bx \ (b > 0)$$

which makes an angle θ with its axis, is

(a) $y = x\cot\theta + b\tan\theta$ (b) $y = x\cot\theta - b\tan\theta$

(c) $y = x\tan\theta - b\cot\theta$ (d) $y = x\tan\theta + b\cot\theta$

34.The eccentricity of the ellipse

$4(x - 2y)^2 + 9(2x + y)^2 = 5$ is

(a) $\dfrac{\sqrt{2}}{3}$ (b) $\dfrac{1}{4}$ (c) $\dfrac{\sqrt{5}}{3}$ (d) $\dfrac{5}{9}$

35. The centre of the hyperbola

$9x^2 - 16y^2 + 18x + 32y - 151 = 0$, is

(a) (-1,1) (b) (1, 1) (c) (1, -1) (d) (-1, -1)

36.If the equation

$ax^2 + 5y^2 + bz^2 - \lambda xy + 2ax - 4by + 2\lambda z + d = 0$

represents a sphere of radius = 8, then d is equal to

(a) 125 (b) 117 (c) 61 (d) 36

37.In an indefine series of independent trials with constant probability p of success, the expectation of the number of failures preceding the first success, is

(a) pq (b) $q^2 p$ (c) q/p (d) p/q

38. If $x_i = (i = 1, 2, 3)$ be three uncorrelated variables each having the same standard deviation, then the correlation coefficient between $x_1 + x_2$ and $x_2 + x_3$ is

(a) 1 (b)1/2 (c) 0 (d)-1/2

39.If X and Y are independent variables B $(3, \dfrac{1}{2})$

and B $(5, \dfrac{1}{2})$, then P (X + Y = 2) is

(a) $\dfrac{7}{64}$ (b) $\dfrac{5}{128}$ (c) $\dfrac{15}{256}$ (d) $\dfrac{3}{256}$

40. If in a Poisson Distribution, $P(x)$ for $x = 0$ is 10%, then the mean of this distribution is

(a) 10 (b) $\log_e 5$ (c) 2 (d) $\log_e 10$

PART-II APTITUDE TEST

41.In the on-going IPL matches of 9 teams, in the present format each team plays the other team twice once at their own venue and the second one at opposition's venue. In addition if one more match between the two is played at a natural venue, with two semifinals and one final, one for third-fourth position, the total number of matches, played would be

(a) 76 (b) 108 (c) 112 (d) 148

42. From a number of oranges, I sell half the number of oranges plus one to one customer and then, I sell one third of the remaining plus two to another customer. I find that I am left with 12 oranges. The number of oranges that I had in the beginning was

(a) 60 (b) 56 (c) 48 (d) 44

43. Which of the following would be the missing number (?) in the following series

$$\dfrac{3}{5}, \dfrac{5}{9}, \dfrac{8}{15}, ?, \dfrac{17}{33}, \dfrac{23}{45}$$

(a) $\dfrac{9}{17}$ (b) $\dfrac{10}{19}$ (c) $\dfrac{11}{21}$ (d) $\dfrac{12}{23}$

44. The least positive integer which when divided by 7 or 9 or 11 leaves remainder 1 in each case and is exactly divisible by 13, is

(a) 694 (b) 1387 (c) 1391 (d) 2080

45. A man's salary was increased by 10% in the first year and then increased by 20% in the second year. However, in the third year his salary was decreased by 25%. If his present salary per month is Rs.7920, then his salary per month three years ago was

(a) Rs.7800 (b) Rs.7900 (c) Rs.8000 (d) Rs.7200

46. In a certain code language BEAT is written as YVZG. Then code of MILD would be

(a) NROW (b) ONROW (c) NOWR (d) ONWR

47. Ram says to Shyam that when you were born, your mother was four times of my age and at present she is three of my age and after 21 years she would be two times of any age. Shyam's age at present is

(a) 3 years (b) 5 years (c) 7 years (d) 14 years

Read the following paragraph and answer questions 48-51

A business school with six Professors L, M, N, O, P and Q has decided to implement a new scheme of course management. Each professor has to coordinate one course and support another course. This semester O's support course is Finance while three other have it in coordinator's role. P and Q have marketing as one of their subject Q coordinates operations, which is a support course for both N and P. Finance and IT are L's subject. Both L and O have same subject. Strategy is a support course for only one of the Professor.

48. Who amongst the following coordinates the IT course ?
(a) L   (b) M   (c) N   (d) O
49. Which course is supported by M ?
(a) Operations (b) IT   (c) Strategy   (d) Finance
50. Who among the following are coordinating the Finance course ?
(a) M, N and O   (b) L, M and N
(c) L and N only   (d) N and O only
51. Which course has only one coordinator and one support professor ?
(a) Strategy   (b) Finance
(c) Operations   (d) Marketing

Read the following paragraph and answer questions 52-54

There are five players P, Q, R, S and T. One is football player, one is Chess player and one is Hockey player. P and S are unmarried ladies and do not participate in any game. None of the ladies play Chess or Football. There is a married couple in which T is the husband, Q is the brother of R and is neither a Chess player nor a Hockey player.

52. Who is Football player ?
(a) Q   (b) R   (c) S   (d) T
53.Who is wife of T ?
(a) P   (b) Q   (c) R   (d) S
**54**.Who is the Chess player ?
(a) Q   (b) R   (c) S   (d) T
55. A cube is coloured red on three adjacent faces. It is then cut once horizontally and once vertically into four cuboids of equal size. Each of these cuboids is coloured green on all the uncoloured faces and is then cut once horizontally and once vertically into four cuboids of equal size. Then how many cuboids have three green faces each.
(a) 6   (b)7   (c) 8   (d) 9
56. See the figure below :
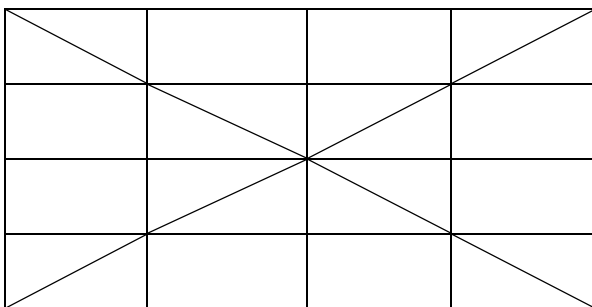
The number of triangle in the figure are
(a) 36   (b) 48   (c) 52   (d) 40

PART-III
COMMUNICATION SKILLS

In this part you are required to read the passages and answer the questions that follow :

It would be interesting to discover how many young people go to university without any clear idea of then they are going to do afterwards. If one consider the enormous varieties of course offered, it is not hard to see how difficult it is for a student to select the course most suited to his interests and abilities. If a student goes to university to acquire a broader perspective of life, to enlarge his ideas and to learn to think of himself, he will undoubtedly benefit, since school often has too restricting atmosphere, with its timetables and disciplines, to allow him much time for independent assessment of the work he is asked to do. Most students would, I belief, profit by a year or so's exploration of different academic studies, especially those ' all-rounder 's' with no particular bent. They should have longer to decide in what subject they want to take their degree, so that in later life, they do not look back and say," I should like to have been an archeologist. If I hadn't taken a degree in Modern Languages, I shouldn't have ended up as an interpreter, but it's too late now. I couldn't go back and begin all over again, even if I had the chance."

There is, of course, another side to the questions of how to make the best use of one's time at university. This is the case of the student who excels in a particular branch of learning, is a first rate mathematician, scientist, and linguist ---- what – have – you. He is immediately accepted by the university of his choice, and spends his three or four years becoming a specialist, emerging with a first-class Honours Degree and very little knowledge of what the rest of the World is all about. It, therefore , becomes more and more important that, if students are not to waste their opportunities and, incidentally, the taxpayers' money, there will have to be much more detailed information about courses, more advice from Career Masters and Course Tutors if we are not to have, on the one hand, a band of specialists ignorant of anything outside their own subject and on the other, an ever increasing number of graduates qualified in subject for which there is little or no demand in the working world.

57. The essential difference between a school and a university is that the university.
(a) Offers a broader perspective of life
(b) Gives you a more relaxed environment to make your choices.

(c) Allows you to choose your discipline from an enormous variety.

(d) Lets you decide on your timetables and subject combinations

58. The 'all rounder' aspiring to join the university will do will to

(a) Skip about a year or so to decide on the courses they would like to study.

(b) Select courses they will not later regret studying.

(c) Go in for immediate guidance from Career Masters.

(d) Take their time to decide whether they want to remain all-rounders or study for an Honours degree.

59. The Honours student too needs advice from Career Masters since

(a) The could end up with a degree in a subject for which there is little or no demand in the working world.

(b) Their degree may give them very little knowledge outside their own subject.

(c) They may end up choosing a subject they have no aptitude for

(d) Their degree may qualify them for a career they never intended to enter.

60. Mark the statement that is NOT true

(a) The relaxed environment of a university allows a student to gain a wider view of life.

(b) A student excelling in one particular branch of learning gets admission to university of his choice more easily.

(c) The university allows a student to enlarge his idea and to learn to think for himself.

(d) The student seeking admission to a general course finds the going tougher

According to a report by the United Nations, at any one time more than 3,00,000 children under the age of 18 years, both boys and girls, are fighting as soldiers in government armed forces and armed opposition groups in more than 30 countries worldwide. The participation of children in armed conflicts has become a common feature of new emerging armed conflicts in which there are regular armed forces on one side and guerrilla groups on the other. The changes in the nature of wars and military strategy have made children more vulnerable. The recruitment of child soldiers is motivated by several reasons. Children from impoverished and marginalized backgrounds or separated from their families are most likely to

become combatants. They are recruited in many ways-some are conscripted, other are kidnapped and still others are forced to join to defend their families. In many instances, children are arbitrarily seized from the streets, or even from schools or orphanages. Some children become soldiers simply to survive. In war-ravaged lands where schools have been closed, fields destroyed or relatives arrested or killed, the report says the gun is a meal ticket and a more attractive alternative to sitting at home alone and be afraid. Children's involvement in an armed conflict can extend from indirect help to actually taking up arms. While children might start out in indirect support functions, it does not take long before they are placed in the heat of the battle, where their inexperience and lack of training leave them particularly vulnerable. Overall, the experience kills their innocence, and brutalizes the childhood.

61.Children participate in armed conflicts.

(a) Almost everywhere where armed conflicts are going on.

(b) As soldiers on both sides of the conflict.

(c) As soldiers in guirella armies.

(d) With armed opposition groups and guerrillas

62.'Some children become soldiers simply to survive' implies.

(a) They join the conflict to defend their families.

(b) They are kidnapped and forced to fight.

(c) With schools closed, fields destroyed or relatives arrested or killed, they have nowhere to go

(d) Life as soldiers provides them escape from hunger and fear

63. 'The experience kills their innocence, and brutalizes the childhood.' implies

(a) Child soldiers lose the cheerful simplicity of normal children and become cruel.

(b) Fighting turns them into criminals

(c) They no longer love to play children's games

(d) They merely become fighting robots.

64.Mark the statement that is NOT true

(a) Most child soldiers are form poor or marginalized sections of societies.

(b) Some are forced to join under government orders.

(c) Many are brainwashed into fighting for a cause.

(d) Many other are kidnapped.

Universal Health Coverage (UHC) has now been widely adopted by Canada and many other developing countries both as a development imperative and the moral obligation of a civlised

society. India embraced this vision at its independence. However, insufficient funding of pubic facilities, combined with faulty planning and inefficient management over the years, has resulted in a dysfunctional health system that has been yielding poor health outcomes. India's public spending on health – just around 1.2 percent of GDP – is among the lowest in the world. Private health services have grown by default, without checks on cost and quality, escalating private out-of – pocket health expenditure and exacerbating health inequality. While the National Health Rural Mission and the several government funded health insurance schemes have provided a partial response, out of-pocket expenditure still remain at 71 percent of all spending, without coverage for outpatient care, medicines and basic diagnostic test.

65. Universal health coverage means
(a) Health for everyone in the world
(b) Health care for all in the country at state expense
(c) Setting up government hospitals all over the country.
(d) Increasing public spending on health.

66. UHC has yielded poor results in India because of
(a) landequate funding of health facilities
(b) Poor management of the system
(c) Faulty planning
(d) All the above

67. One bright spot in this bleak scenario is
(a) The coming up of excellent private hospitals
(b) National Rural Health Mission and government-funded health insurance schemes.
(c) High out-of-pocket expenditure on health.
(d) Increase in India's public spending on health.

68. The author points out several inadequacies in India's present healthcare system. Mark the statement that is NOT true.
(a) Individual expenditure on healthcare remains very high
(b) It has little provision for outpatient care
(c) Healthcare as a moral obligation of a civilized society has not been realized
(d) Health inequities have increased.

A teaching job in most advanced countries, unlike in India , is a high-status profession. In addition to receiving salaries comparable to other well-paying jobs, teacher training course are highly selective and admit only the cream of graduates. Second teachers are provided intensive training and new recruits are mentored on the job. In our country, teachers tend to work in isolation and inexperienced teachers are expected to handle a class on their own without additional guidance. Third, in the top-performing countries, schools try to offer the best possible education for every child by supporting those who lag behind. These schools monitor student performance closely and intervene when children fall behind by employing special educators who are trained in remedial instruction.

Thus, both government and private schools need to implement systemic changes. The coming academic year is an apt starting point when the RTE (Right to Education) goes into effect nationally. Private schools need to welcome poor children wholeheartedly and prepare to meet the educational demands that this reservation will bring. Our educational establishments are services is only going to increase.

69. A teaching job in advanced countries is a high-status profession means
(a) Teacher are highly paid there
(b) They are respectable professionals
(c) They are high trained professionals
(d) Their selection process is very rigid

70. Indian schools fail to provide the best possible education to children form diverse background because
(a) Teachers work in isolation without being mentored.
(b) Most teachers are inexperienced.
(c) Those joining the teaching profession are not motivated enough to be teachers.
(d) Schools have hardly any programmes to monitor student performances.

71.Both government and private schools need to implement systemic changes . Mark the step NOT suggested by the author in this regard.
(a) Private schools should accepted poor students as required under RTE
(b) Schools should learn to be more sensitive to the needs of children with learning disabilities.
(c) Remedial programmes need to be devised for such students.
(d) Teachers should be constantly mentored on the job.

72. Remedial instruction essentially involves.
(a) Teaching special courses designed for weak students.
(b) More intensive teaching for weak students.
(c) Use of special aids such as audio-visual aid in teaching.

(d) Making use of special educators who are trained in remedial instruction.

What, again, is the meaning of liberty ? Liberty certainly does not mean the absence of obstacles in the path of misappropriation of wealth etc. by you or me, but it is our natural right to be allowed to use our own body, intelligence, or wealth according to our will, without doing any harm to others; and all the members of the society ought to have the same opportunity for obtaining wealth, education, or knowledge. The second questions is: Those who that if the ignorant and the poor be given liberty, i.e, full right to their body, wealth, etc., and if their children have the same opportunity to better their condition or acquire knowledge as those of the rich and highly situated, they would become perverse-do they say this for the good of the society or blinded by their selfishness ? In England too I have heard, "Who will serve if I the lower classes get education?" For the luxury of a handful of the rich, let millions of men and women remain submerged in the hell of want and abysmal depth of ignorance, for if they get wealth and education, society will be upset! Who constitute society ? The millions – or you, I, and a few others of the upper classes? Again, even if the latter be true, what ground is there for our vanity that we lead the others ? Are we omniscient ?

73.Liberty means

(a) Absence of obstacles in the path of misappropriation of wealth.

(b) The right to everyone to develop to their full potential.

(c) Giving all members of society opportunity to be prosperous

(d) None of the above.

74. The real reason why upper classes don't want to give liberty to the poor is that

(a) They believe it will create chaos in the society.

(b) They do not think the lower classes deserve it.

(c) They are entirely guided by their selfish interests

(d) They believe in their own inherent superiority.

75. The author's views can beset be summed up in the statement.

(a) Everyone in the society has the right to live their life according to their will without harming others.

(b) Liberty in the hands of the ignoring is dangerous – be they rich or poor.

(c) Social harmony is more important than liberty to any class.

(d) No selection of the society can claim to be inherently superior to the other.

76. Giving liberty to the poor is supposedly dangerous because.

(a) Power in the hands of the ignorant is dangerous

(b) If the poor get education and wealth it will lead to bitter class conflicts.

(c) The rich believe they alone know what is good for the whole society.

(d) The poor are likely to misuse it.

Every animal is motivated to live gregariously – to be sociable – in attempt to overcome the inherent isolation which derives from the individuality. Man, because he is self-conscious, concept-forming creature, is particularly aware of this dilemma which he calls loneliness. In civilized societies the human child allays the terrifying loneliness of its first years by intimate contact with its mother, or mother surrogate. Psychologists are agreed that in the early years of childhood, mother fulfil a function which is so indispensable, that deprevation during this period is likely to have a lasting effect upon the child's ability for social adjustment in later life. It seems that however disinterested, idiotic, or debauched the mother may be, she forms an essential link between the isolation of the child and the social complex of which it will ultimately form a part. In fulfilling this function, the mother is infallible as far as the young child is concerned.

77. The statement 'Men….. is particularly aware of this dilemma which he calls loneliness' points to the fact

(a) Man is social animal but values his individuality at the same time.

(b) There is contradiction between man's self-consciousness and concept-forming nature.

(c) Man loves company and his loneliness at the time.

(d) He feels the society he cherishes so much does not understand him.

78. The mother fulfils an indispensable function in the child's early life as

(a) Man is a social animal but values his individuality at the same time.

(b) There is a contradiction between man's self-consciousness and concept-forming nature

(c) Man loves company and his loneliness at the same time.

(d) He feels the society he cherishes so much does not understand him.

78. The mother fulfils an indispensable function in the child's early life as
(a) Her intimate contact with it prepares it for normal social adjustment in later life
(b) She moulds its character in its formative year
(c) She gives it two things the child needs most at the moment-love and security
(d) None of the above.

79. 'In fulfilling this function, the mother is infallible, implies
(a) The child's absolute faith in its mother.
(b) Mother's feeling that the child needs he care now than he ever would in future.
(c) No one can take her place in the child's early life.
(d) No mother even fails to fulfill this function.

80. The intimate contact with the mother is important for the little child since
(a) The warm contact is the beginning
(b) It acts as a shield against the feeling of loneliness.
(c) It gives the child a feeling of warmth and security.
(d) It is the child's first lesson in socialableness.

On March.18, 1922, Mahatma Gandhi was tried in a court of law for sedition – the crime of inciting rebellion against the authority. Gandhi accepted the charge but sought to read a statement defending his conduct. The Judge readily agreed, knowing well that this was no ordinary criminal he was dealing with. Gandhi said : I want to avoid violence. Non-violence is the first article of my faith. It is also the last article of my creed. But I had to make my choice. I had either to my faith. It is also the last article of my creed. But I had to make my choice. I had either to submit to a system which I considered had done irreparable harm to my country, or incur the risk of the mad fury of my people bursting forth, when they understood the truth form my lips. I know that my people have sometimes gone mad. I am deeply sorry for it, and I am, therefore here to submit not to a light penalty but to the highest penalty. I do not ask for money. I do not plead any extenuating act. I am here, therefore to invite and cheerfully submit to the highest penalty that can be inflicted upon me, for what in law is a deliberate crime and what appears to me to be the highest duty of citizens.
The only course open to you, the Judge, is, as I am just going to say in my statement, either to resign

your post, or inflict on me the severest penalty, if you believe that the system and the law you are assisting to administer are good for the people. I do not expect that kind of conversion, but by the time I have finished my statement, you will perhaps have a glimpse of what is raging within my breast, to run the maddest risk which a sane man can run.

81.Non-violence is the first article of my faith. It is also the last article of my creed.'
(a) Gandhi says he believes in non-violence as his religion requires him to do that
(b) He wishes to emphasize that it is the most powerful and practical weapon to flight injustice.
(c) It allows him to avoid bringing harm to himself and to others.
(d) He is here talking about the guiding principle of his life – both personal and public.

82. 'But I had to make a choice.' The choice here refers to
(a) Using violence or non-violence as a method of agitating against the British Raj.
(b) Meekly accepting the unjust system or telling his people the bitter truth about the Raj.
(c) Keeping quiet about the unjust system or telling people about it and facing the possibility of violence erupting.
(d) Telling people about it or letting them discover it on their own.

83. Gandhi seeks the highest penalty for his 'crime' of sedition because
(a) He wants to atone for the violence of his people
(b) he knows and accept that the law must take its course.
(c) It would tell his followers about his uncompromising attitude to violence.
(d) He would expose the system and achieve a moral victory.

84. In asking the Judge,' either to resign your post, or inflict on me the severest penalty' Gandhi.
(a) Poses a moral dilemma before the Judge: Do your duty or listen to your conscience.
(b) Wishes to tell the British people the bitter truth about their Raj.
(c) Emphasizes the moral superiority of his methods.
(d) Advises his own people to do what is right irrespective of consequences.

What is the basis of all life. Every animal and every plant contains a substantial proportion of free or combined water in its body, and no kind of

physiological activity is possible in which the fluid does not play its essential part. Water is, of course, necessary for animal life, while moisture in the soil is equally imperative for the life and growth of plants and trees. The conservation and utilization of water is thus fundamental for human welfare. Apart from artesian water, the ultimate source in all cases in rain or snowfall. Much of Indian agriculture depends on seasonal rainfall and is therefore very sensitive to any failure or irregularity of the same. The adoption of techniques preventing soil erosion can, therefore, help to conserve and keep the water where it is wanted, that is, on and in the soil. Such techniques therefore serve a double purpose. Again, an immense quantity of rainwater necessarily runs off the ground down into the streams and rivers and ultimately into the sea. The collection and utilization of water is therefore of vital importance. The harnessing of our rivers, the water of which now mostly run to waste is a great national problem. Closely connected with the conservation of water supplies is the problem of afforestation. The systematic planting of suitable trees in every possible or even in impossible areas and the development of what one can call civilized forests as distinguished from wild and untamed jungle is one of the most urgent needs of India. Such plantation would check soil erosion and conserve the rainfall of the country form flowing away to waste and would provide the necessary supplies of cheap fuel and thus stop unnecessary waste of farmyard manure.

85. The sources of water for sustenance of life on earth are
(a) Rainwater, snowfall, underground water
(b) Rains, rivers, snowfall
(c) Sea, rivers and snowfall
(d) Artesian water, snow fall, soil moisture, rainwater.

86. Afforestation requires
(a) Encouraging wild and untamed jungles.
(b) Development of civilized forests
(c) Planed plantation of trees wherever possible.
(d) Planting trees on a large scale all over the country.

87. Mark the statement that is NOT true
Prevention of soil erosion would help
(a) Increase availability of manure from agricultural waste.
(b) Conserve rainwater
(c) Prevent erosion of top soil.

(d) Increase available of wood for use as fuel.

88. Water conservation is possible.
(a) Through proper collection and utilization of rainfall and river waters
(b) By harnessing river wasters
(c) By preventing soil erosion
(d) By not allowing rainwater to flow down to the sea.

Claude Monet, a 19th-century French painter, was the most famous artist associated with the movement know as Impressionism. Monet was born on November 14, 1840, and even as a young man he was known for producing small portraits in charcoal. IN 1858 Monet met the artist Eugene Boudin, who became his mentor and introduced Monet to painting outdoors, or "en plein air" as it came to be known. In 1859, at the age of 19, Monet moved to Paris to become a professional artist. Most artist of his time tried to imitate nature realistically, but in his landscape panting Monet instead sought to portray nature as it appeared to him. In particular, he was interested in how light affects the ways that we perceive colour. IN one of his most famous series of works. Monet painted the cathedral in Rouen, France at several different times of the day, showing how changes in natural light make the cathedral appear to change colour. IN 1883, Monet moved to a small French town called Givemy, where he built an elaborate garden. This garden, in particular its water lily ponds, became the chief subject of Monet's later paintings. Monet's paintings of water lilies were extremely influential to 20th-century modern artists. In these paintings, Monet used the landscape merely as a starting point, creating abstract fields of vibrant colour. These paintings relied on broad, thick brushstrokes. The texture of these brushstrokes gave the canvases a tactile quality that contrasted sharply with the smooth canvases produced by more traditional artists. Though he struggled financially throughout his life, when Monet died in 1926, he was one of the most famous and influential painter in the world.

89. Based on information in the passage, it can be inferred that the phrase "a tactile quality" suggests that Monet's canvases were
(a) Colourful   (b) Beautiful
(c) Smooth   (d) Rough

90. According to the passage. Monet moved to Pars in 1859 to

(a) Join the Impressionism movement
(b) Paint cathedrals
(c) Become a professional artist
(d) Build an elaborate garden
91. The tone of the passage can best be described as
(a) Critical   (b) Passionate
(c) Clever   (d) Appreciative

Part-VI
Computer Science

92. int i = 4
while (i >5)
{
        print f("\n Good morning");
        i = i +5;
As per the code above, how many times "Good morning" will be printed on the screen.
(a) 4   (b) 5   (c) 0   (d) 1
93How many times the following loop be executed
char ch = 'd';
while (ch > = 'b' && ch < = 'w)
{   ptint f ("%c", ch);
}
(a) 20   (b) 21   (c) Infinite   (d) 0
94. What would be the output of the following program code
int a = 4;
switch (a)
{
        case 1 :   printf ("\n Good");
        case 4 :   printf("\n Better");
        default :   printf ("\n Best");
(a) Good   (b) Better
      Better   Best
(c) Good   (d) Better
      Better
      Best
96. What does the following function do ?
fun (int a, int b)

{
        int z = (a > = b) ? a : b;
        return (z) ;
(a) Finds the maximum of a and b
(b) Returns the element whose absolute value is largest.
(c) Returns the minimum of a and b
(d) None of the above.
96. int a = 3, b = 6;
if (a<2 && b>4)
{
        b = b+5;
}
b = b+2;
Based on the above code, predict the value of variable on execution of above program segment
(a) 8   (b) 4   (c) 9   (d) 1
97. A static variable is one
(a) Which cannot be initialized
(b) Which is initialized once at the commencement of execution and cannot be changed at run time.
(c) Which retain its value throughout the life of the program.
(d) Which is same as an automatic but is placed at the head of a program.
98. #define statement can be used to define;
(a) Macros   (b) Symbolic constants
(c) Both a and b   (d) Neither a nor b
99. Choose the correct output of the following program
include <stdio.h>
void main ()
{
        int a [2] [3] = {{5, 8, 9}, {10, 15, 18}};
print f("\n   \\d", +a {0}) ;
(a) 5   (b) 8   (c) 10   (d) Error
100. Binary representation of 0.25 is
(a) 0.11001   (b) 0.10   (c) 0.01   (d) 0.11