NIMCET 2018 MOCK PAPER - 01

1. The quadratic equation whose roots are l and m where $l = \lim_{\theta \to 0}\left(\frac{3\sin\theta - 4\sin^3\theta}{\theta}\right)$ and $m = \lim_{\theta \to 0}\frac{2\tan\theta}{(1-\tan^2\theta)\theta}$, is :
   (a) $x^2 + 5x + 6 = 0$
   (b) $x^2 - 5x + 6 = 0$
   (c) $x^2 - 5x - 6 = 0$
   (d) $x^2 + 5x - 6 = 0$

2. If the distance of any point (x, y) from origin is defined as $d(x, y) = |x| + |y|$, then the locus $d(x, y) = 1$ is a
   (a) Circle of area π sq. unit
   (b) Square of area 1 sq. unit
   (c) Square of area 2 sq. unit
   (d) none of the above

3. The distance between the circum centre and orthocentre of the triangle whose vertices are $(0,0), (6,8)$ and $(-4,3)$ is
   (a) $\frac{125}{8}$ unit
   (b) $\frac{\sqrt{5}}{2}$ unit
   (c) $\frac{5\sqrt{5}}{2}$ unit
   (d) $5\sqrt{5}$ unit

4. If the equation $y = mx + c$ and $x\cos\alpha + y\sin\alpha = p$ represents the same straight line, then
   (a) $p = c\sqrt{1 + m^2}$
   (b) $c = p\sqrt{1 + m^2}$
   (c) $cp = \sqrt{1 + m^2}$
   (d) $p^2 + c^2 + m^2 = 1$

5. If $4\hat{i} + 7\hat{j} + 8\hat{k}, 2\hat{i} + 3\hat{j} + 4\hat{k}$ and $2\hat{i} + 5\hat{j} + 7\hat{k}$ are the position vectors of the vertices A, B, and C respectively of triangle ABC. The position vector of the point where the bisector of angle A meets BC, is
   (a) $\frac{2}{3}\left(-6\vec{i} - 8\vec{j} - 6\vec{k}\right)$
   (b) $\frac{2}{3}\left(6\vec{i} + 8\vec{j} + 6\vec{k}\right)$
   (c) $\frac{1}{3}\left(6\hat{i} + 13\hat{j} + 18\hat{k}\right)$
   (d) $\frac{1}{3}\left(5\hat{j} + 12\hat{k}\right)$

6. A vector which makes equal angles with the vectors $\frac{1}{3}\left(\hat{i} - 2\hat{j} + 3\hat{k}\right), \frac{1}{5}\left(-4\hat{i} - 3\hat{k}\right), j$ is
   (a) $5\hat{i} + \hat{j} + 5\hat{k}$
   (b) $-5\hat{i} + \hat{j} + 5\hat{k}$
   (c) $5\hat{i} - \hat{j} - 5\hat{k}$
   (d) $5\hat{i} + \hat{j} + 5\hat{k}$

7. If a, b, c are in GP, then the equations $ax^2 + 2bx + c = 0$ and $dx^2 + 2ex + f = 0$ have a common root if $\frac{d}{a}, \frac{e}{b}, \frac{f}{c}$ are in

   (a) AP
   (b) GP
   (c) HP
   (d) None

8. Let $R = \left(5\sqrt{5} + 11\right)^{2n+1}$ and $f = R - [R]$, where $[.]$ denotes the greatest integers function. The value of $R.f$ is
   (a) 4^{2n+1}
   (b) 4^{2n}
   (c) 4^{2n-1}
   (d) 4^{-2n}

9. A polynomial function $f(x)$ satisfies the condition $f(x)f\left(\frac{1}{x}\right) = f(x) + f\left(\frac{1}{x}\right)$. If $f(10) = 1001$, then $f(20) = $
   (a) 2002
   (b) 8008
   (c) 8001
   (d) None

10. Let $\omega = \frac{1}{2}(-1 + \sqrt{3}i)$ and $\Delta = \begin{vmatrix} 1 & 1 & 1 \\ 1 & -1 - \omega^2 & \omega^2 \\ 1 & \omega^2 & \omega \end{vmatrix}$. Then value of Δ is
    (a) 3ω
    (b) $3\omega(\omega - 1)$
    (c) $3\omega^2$
    (d) $3\omega(1 - \omega)$

11. The roots of the equation $|2x - 1|^2 - 3|2x - 1| + 2 = 0$ are
    (a) $\left\{-\frac{1}{2}, 0, \frac{1}{2}\right\}$
    (b) $\left\{-\frac{1}{2}, 0, \frac{3}{2}\right\}$
    (c) $\left\{-\frac{3}{2}, \frac{1}{2}, 0, 1\right\}$
    (d) $\left\{-\frac{1}{2}, 0, 1\frac{3}{2}\right\}$

12. If the sets A and B are defined as
    $A = \{x, y : y = \frac{1}{x}, 0 \neq x \in R\}$
    $B = \{x, : y = -x, x \in R\}$, then
    (a) $A \cap B = A$
    (b) $A \cap B = B$
    (c) $A \cap B = \phi$
    (d) None of these

13. Two finite set have m and n elements. The total number of subsets of the first set is 56 more than the total number of subsets of the second set. The values of m and n are
    (a) 7, 6
    (b) 6, 3
    (c) 5, 1
    (d) 8,7

14. In a college of 300 students, every students reads 5 newspaper and every newspaper is read by 60 students. The number of newspaper is
    (a) At least 30
    (b) At most 20
    (c) Exactly 25
    (d) None of these

15. Let $f(x) = a - (x-3)^{8/9}$, then the greatest value of $f(x)$ is
    (a) 3   (b) a
    (c) no maximum value   (d) None

16. The minimum value of $27^{\cos 2x} \cdot 81^{\sin 2x}$ is
    (a) $\frac{1}{243}$ (b) -5 (c) $\frac{1}{5}$ (d) $\frac{1}{3}$

17. The maximum value of $x^{1/x}$ is
    (a) $\frac{1}{e}$ (b) e (c) $e^{1/e}$ (d) None

18. If $\int e^x \left(\frac{1-\sin x}{1-\cos x}\right) dx = f(x) + c$, then $f(x) =$
    (a) $e^x \cot\left(\frac{x}{2}\right) + C$ (b) $e^{-x} \cot\left(\frac{x}{2}\right) + C$
    (c) $-e^x \cot\left(\frac{x}{2}\right) + C$ (d) $-e^{-x} \cot\left(\frac{x}{2}\right) + C$

19. The area included between the curves $y = \frac{x^2}{4a}$ and $y = \frac{8a^3}{x^2+4a^2}$ is given by
    (a) $a^2\left(2\pi - \frac{4}{3}\right)$ (b) $a^2\left(\pi - \frac{4}{3}\right)$
    (c) $a^2\left(2\pi - \frac{1}{3}\right)$ (d) $a^2\left(\pi + \frac{4}{3}\right)$

20. Area bounded by the curves $y = x\sin x$ and x−axis between $x = 0$ and $x = 2\pi$ is
    (a) 2π (b) 3π (c) 4π (d) 5π

21. The area bounded by the curves $y = e^x, y = e^{-x}$ and $y = 2$, is
    (a) $\log\left(\frac{16}{e}\right)$ (b) $\log\left(\frac{4}{e}\right)$
    (c) $2\log\left(\frac{4}{e}\right)$ (d) $\log\left(\frac{8}{e}\right)$

22. Let $[.]$ denotes the greatest integer function, then the value of $\int_0^{1.5} x[x^2]\, dx$ is
    (a) $\frac{3}{2}$ (b) $\frac{3}{4}$ (c) $\frac{5}{4}$ (d) 0

23. If $\int_a^b \{f(x) - 3\}dx = a^2 - b^2$, then the value of $f\left(\frac{\pi}{6}\right)$ is
    (a) $\frac{\pi}{6}$ (b) $\frac{2\pi}{3}$ (c) $\frac{\pi}{3}$ (d) $\frac{\pi}{2}$

24. $\lim_{x\to\infty} \frac{1}{n}\sum_{r=1}^{2n} \frac{r}{\sqrt{n^2+r^2}}$ equals
    (a) $1 + \sqrt{5}$ (b) $-1 + \sqrt{5}$
    (c) $-1 + \sqrt{2}$ (d) $1 + \sqrt{2}$

25. The area above $x - axis$, bounded by the line $x = 4$ and the curve $y = f(x)$ where $f(x) = x^2, 0 \le x \le 1$ and $f(x) = \sqrt{x}, x \ge 1$ is
    (a) 2sq units   (b) 5 sq units

    (c) 4 sq units   (d) 9 sq units

26. Area off the greatest rectangle that can be inscribed in the ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ is
    (a) $\sqrt{ab}$ sq units   (b) ab sq units
    (c) $2ab$ sq units   (d) $2\sqrt{ab}$ units

27. The greatest value of $f(x) = (x+1)^{1/3} - (x-1)^{1/3}$ on [0,1] is
    (a) 1   (b) 2   (c) 3   (d) 4

28. Let $f: R \to R$ be a positive increasing function with $\lim_{x\to\infty} \frac{f(3x)}{f(x)} = 1$. Then $\lim_{x\to\infty} \frac{f(2x)}{f(x)}$ is equal to
    (a) 1   (b) 2   (c) $\frac{3}{2}$ (d) 3

29. If $X = (4^n - 3n - 1: n \in N)$ and $Y = \{9(n-1): n \in N\}$ where N is the set of natural numbers, then $X \cup Y$ is equal to
    (a) N   (b) Y – X   (c) X   (d) Y

30. If the equations $x^2 + 2x + 3 = 0$ and $ax^2 + bx + c = 0$; $a, b, c \in R$ have a common root, then $a:b:c$ is equal to
    (a) 1:2:3   (b) 3:2:1   (c) 1:3:2   (d) 3:2:1

31. The equation $e^{\sin x} - e^{-\sin x} - 4 = 0$ has
    (a) infinite number of real roots
    (b) no real root
    (c) exactly one real root
    (d) exactly four real root

32. If $z^2 + z + 1 = 0$, where z is a complex number, then value of $\left(z + \frac{1}{z}\right)^2 + \left(z^2 + \frac{1}{z^2}\right) + \cdots + \left(z^6 + \frac{1}{z^6}\right)$
    (a) 54   (b) 6   (c) 12   (d) 18

33. If the system of equations $x - ky - z = 0, kx - y - z = 0, x + y - z = 0$ has a non-zero solution, then the possible values of k are
    (a) −1,2   (b) 1,2   (c) 0,1   (d) −1,1

34. The value of the determinant $\begin{vmatrix} 10! & 11! & 12! \\ 11! & 12! & 13! \\ 12! & 13! & 14! \end{vmatrix}$ is
    (a) $1(10!\,11!)$ (b) $2(10!\,13!)$
    (c) $2(10!\,11!\,12!)$ (d) $2(11!\,12!\,13!)$

35. If $A = \begin{vmatrix} \sin(\theta+\alpha) & \cos(\theta+\alpha) & 1 \\ \sin(\theta+\beta) & \cos(\theta+\beta) & 1 \\ \sin(\theta+\gamma) & \cos(\theta+\gamma) & 1 \end{vmatrix}$, then
    (a) $A = 0$ for all θ (b) A is an odd function of θ

(c) $A = 0$ for $\theta = \alpha + \beta + \gamma$
(d) A is independent of θ

36. The area of the parallelogram formed by the lines $2x - 3y + 1 = 0, 3x - 2y - 1 = 0, 2x - 3y + 3a = 0$ and $3x - 2y - 2a = 0$ in squares units is
(a) $\frac{a^2}{5}$ (b) $\frac{2a^2}{5}$ (c) $\frac{3a^2}{5}$ (d) None

37. A line L has intercepts a and b on the co-ordinate axex. When the axes are rotated through an angle, keeping the origin fixed, the same line L has intercepts p and q
(a) $a^2 + b^2 = p^2 + q^2$ (b) $\frac{1}{a^2} + \frac{1}{b^2} = \frac{1}{p^2} + \frac{1}{q^2}$
(c) $a^2 + p^2 = b^2 + q^2$ (d) $\frac{1}{a^2} + \frac{1}{p^2} = \frac{1}{b^2} + \frac{1}{q^2}$

38. The value of $\int_{\alpha}^{\beta} x|x|\,dx$, where $\alpha < 0 < \beta$, is
(a) $\frac{1}{2}(\alpha^2 + \beta^2)$ (b) $\frac{1}{2}(\beta^2 - \alpha^2)$
(c) $\frac{1}{3}(\alpha^3 + \beta^3)$ (d) None of these

39. $\int_0^3 |x^3 + x^2 + 3x|\,dx$ is equal to
(a) $\frac{171}{2}$ (b) $\frac{171}{4}$ (c) $\frac{170}{4}$ (d) $\frac{170}{3}$

40. $\int_0^{2\pi} |\cos x - \sin x|\,dx$ is
(a) $\frac{4}{\sqrt{2}}$ (b) $2\sqrt{2}$ (c) $\frac{2}{\sqrt{2}}$ (d) $4\sqrt{2}$

41. The value of $\int_0^{\frac{\pi}{2}} \frac{x+\sin x}{1+\cos x}\,dx$, is
(a) π (b) 2π (c) $\frac{\pi}{2}$ (d) $\frac{3\pi}{2}$

42. If a function $f(x)$ satisfies the condition $f\left(x + \frac{1}{x}\right) = x^2 + \frac{1}{x^2}$, $x \neq 0$, the $f(x)$ is equal to
(a) $x^2 - 2$ for all $x \neq 2$
(b) $x^2 - 2$ for all satisfying $|x| \geq 2$
(c) $x^2 - 2$ for all satisfying $|x| < 2$
(d) none of these

43. The domain of the function $f(x) = \sqrt{\frac{-\log_{0.3}(x-1)}{-x^2+3x+18}}$ is
(a) $(2,6]$ (b) $[2,6)$ (c) $(2,6)$ (d) $[2,6]$

44. If $f(x) = \cos[\pi^2]x + \cos[-\pi^2]x$, where $[x]$ stands for the greatest integer function, then
(a) $f\left(\frac{\pi}{2}\right) = -1$ (b) $f(\pi) = 0$
(c) $f(-\pi) = 0$ (d) $f\left(\frac{\pi}{4}\right) = 2$

45. If $\lim_{x\to\infty}\left(\frac{x^2-1}{x+1} - ax - b\right) = 2$, find the values of a and b.
(a) $a = 1$ & $b \in R$ (b) $a = 1$ & $b = 2$
(c) $a = 2$ & $b \in R$ (d) None

46. Evaluate $\lim_{x\to\frac{\pi}{2}} \frac{\cot x - \cos x}{(\pi - 2x^3)}$ is
(a) $\frac{1}{8}$ (b) $\frac{1}{16}$ (c) $\frac{1}{32}$ (d) $\frac{1}{64}$

47. The set of points where the function $f(x) = x|x|$ is differentiable is
(a) $(-\infty, \infty)$ (b) $(-\infty, 0) \cup (0, \infty)$
(c) $(0, \infty)$ (d) $[0, \infty]$

48. Let $f(x) = \begin{cases} \frac{1}{|x|} & for\ |x| \geq 1 \\ ax^2 + b & for\ |x| < 1 \end{cases}$. If $f(x)$ is continuous and differentiable at any point, then
(a) $a = \frac{1}{2}, b = -\frac{3}{2}$ (b) $a = -\frac{1}{2}, b = \frac{3}{2}$
(c) $a = 1, b = -1$ (d) none of these

49. If $x = \phi(t), y = \psi(t)$, then $\frac{d^2y}{dx^2}$ is equal to
(a) $\frac{\phi'\psi'' - \psi'\phi''}{(\phi')^2}$ (b) $\frac{\phi'\psi'' - \psi'\phi''}{(\phi')^3}$
(c) $\frac{\phi''}{\psi''}$ (d) $\frac{\psi''}{\phi''}$

50. If $y = \int_0^x f(t)\sin\{k(x-t)\}dt$, then $\frac{d^2y}{dx^2} + k^2y$ equals
(a) 0 (b) y (c) $kf(x)$ (d) $k^2f(x)$

Logical Ability & Reasoning

51. In a certain code language, "VEHEMENT" is written as "VEHETNEM". How is "MOURNFUL" written in that same code?
(a) MOURLUFN   (b) MOUNULER
(c) OURMNFUL   (d) URNFULMO

52. In a certain code language, "COMPUTRONE" is written as "PMOCTUENOR". How is "ADVANTAGES" written in that same code?
(a) ADVANSEGAS   (b) ADVTANSEAG
(c) AVDANTAGES   (d) AVDATNSEGA

53. Showing the lady in the park, Vineet said, "She is the daughter of my grandfather's only son." How is Vineet related to that lady?
(a) Brother   (b) Cousin
(c) Father   (d) Uncle

54. A man said to a lady, "Your mother's husband's sister is my aunt." How is that lady related to that man?
(a) Daughter   (b) Sister
(c) Grand-daughter   (d) Mother

55. January 1, 2004 was a Thursday. What day of the week lies on Jan. 1, 2005?
(a) Thursday   (b) Friday
(c) Saturday   (d) Sunday

Directions (Q. 56-60): Read the following information carefully and answer the questions given below:

I. There is a rectangular wooden block of length 7 cm, height 6 cm and breadth 5 cm.

II. The two opposite surfaces of 7 cm × 6 cm are painted from outside by red colour.

III. One surface of 7 cm × 5 cm is painted from outside by yellow colour and the opposite surface violet.

IV. The remaining two surfaces of 6 cm × 5 cm are painted from outside by green and pink respectively.

V. Now, the block is cut in such a way that cubes of 1 cm × 1 cm × 1 cm are created.

56. How many cubes have two sides painted and remaining sides unpainted?
(a) 44   (b) 52   (c) 48   (d) 56

57. How many cubes have no sides painted?
(a) 72   (b) 60   (c) 75   (d) 80

58. How many cubes have only one side painted and that is painted with red colour?
(a) 94   (b) 38   (c) 84   (d) 40

59. How many cubes have the combination of red with violet and green?
(a) 2   (b) 0   (c) 4   (d) 6

60. How many cubes have the combination of pink and red only?
(a) 6   (b) 10   (c) 12   (d) 8

61. How many squares does the following figure have ?
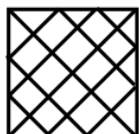
(a) 17   (b) 18   (c) 13   (d) 16

62. If it is possible to make only one meaningful word with the first, the third, the fifth and the eighth letters of the word SHAREHOLDING, which of the following will be the second letter of that word? If no such word can be made, give 'X' as the answer and if more than one such word can be made, give 'Y' as the answer.
(a) L   (b) E   (c) S   (d) Y

63. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group?
(a) 18   (b) 24   (c) 36   (d) 34

64. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group?
(a) 120   (b) 5040
(c) 40320   (d) 52480

65. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to the group?
(a) 331654729   (b) 381154729
(c) 381654729   (d) 381664792

66. Two pipes A and B can fill a tank in 20 and 30 minutes respectively. If both the pipes are used together, then how long will it take to fill the tank?
(a) 12 min   (b) 15 min
(c) 25 min   (d) 50 min

67. A cistern can be filled by a tap in 4 hours while it can be emptied by another tap in 9 hours. If both the taps are opened simultaneously, then after how much time will the cistern get filled ?
(a) 4.5 hrs   (b) 5 hrs
(c) 6.5 hrs   (d) 7.2 hrs

68. Sachin is younger than Rahul by 4 years. If their ages are in the respective ratio of 7 : 9, how old is Sachin ?
(a) 16 years   (b) 18 years
(c) 28 years   (d) None of these

69. The ratio between the present ages of P and Q is 6 : 7. If Q is 4 years old than P, what will be the ratio of the ages of P and Q after 4 years?
(a) 3 : 4   (b) 3 : 5
(c) 4 : 3   (d) None of these

Directions (Q.70-71) : Read the following information carefully and answer the questions given below it:

(A) Gopal is shorter than Ashok but taller than Kunal;

(B) Navin is shorter than Kunal.

(C) Jayesh is taller than Navin.

(D) Ashok is taller than Jayesh.

70. Who among them is the tallest?
(a) Gopal   (b) Ashok
(c) Kunal   (d) Navin

71. Which of the given informations is not necessary to answer the above question ?
(a) A   (b) B   (c) C   (d) D

72. Ashish is heavier than Govind. Mohit is lighter than Jack. Pawan is heavier than Jack but lighter than Govind. Who among them is the heaviest ?
(a) Govind   (b) Jack
(c) Pawan   (d) Ashish

73. Pune is bigger than Jhansi, Sitapur is bigger than Chittor. Raigarh is not as big as Jhansi, but is bigger than Sitapur. Which is the smallest?
(a) Pune   (b) Jhansi
(c) Sitapur   (d) Chittor

74. Rohan is taller than Anand but shorter than Seema. Krishna is taller than Pushpa but shorter than Anand. Dhiraj is taller than Krishna but

Add:-Lakhanpur Near(Petrol Pump),Gurdev
E- Mail : aspirestudykanpur@gmail.com
KANPUR   8400072444   ASPIRE

shorter than Seema. Who among them is the tallest ?

(a) Rohan   (b) Seema

(c) Krishna   (d) Cannot be determined

(Direction Q.75-79): Read the following information carefully and answer the questions that follow :

There are six cities A, B, C, D, E and F.

A is not a hill station.

B and E are not historical places.

D is not an industrial city.

A and D are not historical cities.

A and B are not alike.

75. Which two cities are industrial centres?
(a) A and B   (b) E and F
(c) C and D   (d) B and F

76. Which two cities are historical places?
(a) A and C   (b) B and F
(c) C and F   (d) B and E

77. Which two cities are hill stations ?
(a) A and B   (b) C and A
(c) B and D   (d) A and F

78. Which city is a hill station and an industrial centre but not a historical place ?
(a) E   (b) F   (c) A   (d) B

79. Which two cities are neither historical places nor industrial centres ?
(a) A and B   (b) D and E
(c) F and C   (d) B and D

Directions (Q.80-84) : *Study the following information carefully to answer the questions given below.*

P, Q, R, S, T, U and V are 7 friends who travel to college everyday by a particular train which stops at 5 stations – 1, 2, 3, 4 and 5 respectively after it leaves base stations. 3 among them get in the train at the base station. S gets down at the next station at which U gets down. Q gets in with 2 persons and does not get down with either P or T. V alone gets in at station 3 and gets down with R after 1 station. P travels between only 2 stations and gets down at station 5. None of them gets in at station 2. R gets in with U but does not get in with either Q or S. T gets in with 2 others and gets down alone after S. Q and S going to same college and they get down together at station 3. None of them gets down at station 1.

80. At which station does T get down ?
(a) Station 2   (b) Station 4
(c) Station 3   (d) Station 5

81. At which station does R, U get in ?
(a) Base station   (b) Station 2
(c) Station 1   (d) Station 3

82. After how many station does Q get down ?

(a) 4   (b) 3   (c) 1   (d) 2

83. At which of the following station does Q and T get in ?
(a) Base Station   (b) Station 1
(c) Station 2   (d) Station 3

84. Which of the following is correct ?
(a) T gets in at the base station
(b) R gets in at the Station 3
(c) V gets down at Station 5
(d) U gets down at Station 2

85. 3, 7, 15, 31, 63, ...
(a) 92   (b) 115   (c) 131   (d) 127

86. 1, 6, 15, ..., 45, 66, 91
(a) 28   (b) 25   (c) 27   (d) 26

87. abca__ bcaab__ ca __ bbc __ a
(a) ccaa   (b) bbaa   (c) abac   (d) abba

88. A does a work in 10 days and B does the same work in 15 days. In how many days they together will do the same work?
(a) 5 days   (b) 6 days   (c) 8 days   (d) 9 days

89. If it is possible to make a meaningful word with the 1st, 3rd, 4th and 7th letters of the word HYPOTHESIS, which of the following will be the **third** letter of that word? If more than one such word can be made, give 'X' as the answer. If no such word can be made, give 'M' as the answer.
(a) M   (b) X   (c) E   (d) P

90. If it is possible to make a meaningful word with the 2nd, 3rd, 5th and 8th letters of the word PARAGRAPH, which of the following will be **second** letter of that word? If more than one such word can be made, give 'X' as the answer. If no such word can be made, give 'M' as the answer.
(a) X   (b) M   (c) G   (d) P

General English

Read the following passage carefully and answer the questions given below it. Certain words/phrases have been printed in bold to help you locate them while answering some of the questions.

Passage : A man is known by the book he reads as well as by the company he keeps; for there is a companionship of books as well as of men and one should always live in the best company, whether it be of books or of men.

A good book may be among the best of friends. It is the same today that it always was, and it will never change. It is the most patient and cheerful of companions. It does not turn its back upon in times of adversity or distress. It always receives us with the same kindness; amusing and interesting us in youth, comforting and consoling us in age.

91. According to the passage, A man may usually be known by the books he reads because
(a) His reading habits shows that he is a scholar.
(b) The books he reads affect his thinking
(c) Books provide him a lot of knowledge
(d) His selection of books generally reveals his temperament and character

92. According to the passage, which of the following statements is not true?
(a) Good books as well as good men always provide the finest company.
(b) A good book never betrays us
(c) We have sometimes to be patient with a book as it may bore us.
(d) A good book serves as a permanent friend.
(e) None of these

93. The statement, '' a good book may be among best of friends,'' in the passage means that
(a) there cannot be a better friend than a good book
(b) books may be good friends, but not better than good men
(c) a good book can be included among the best of friends of mankind.
(d) our best friends read the same good books.
(e) None of these

94. Which of the following is opposite in meaning to the word 'adversity' occurring in the passage?
(a) happiness   (b) prosperity
(c) progress   (d) misfortune

95. Which of the following would be the most appropriate title for the given passage?
a. Books show the reader's character
b. Books as man's abiding friends
c. Books are useful in the youth
d. The importance of books in old age

96. Read the following passage carefully and answer the questions that follow. You must choose your answers out of the four given choices.

Why did Sean leave after collecting the fruits?
a. He feared that the bird's song would awaken the Emperor
b. To avoid getting caught by Emperor's men
c. He saw the Emperor's men approaching
d. He was afraid of the dark
e. He wanted to leave Luke alone

97. Choose the word which is most nearly the same in meaning as the word "Reluctant" used in the passage.
a. Against   b. Resistant
c. Opposed   d. Disinclined
e. None of these

98. How often did Sean visit the orchard?
a. Daily   b. Weekly
c. Once in a month d. Every day after midnight
e. Never

99. Which of the following can be inferred from the passage?
a. Luke did not take good care of his uncle
b. Emperor was a wicked man
c. Lack of self-control had put Luke into trouble
d. Luke had a habit of speaking loudly
e. Orchards are meant for the public

100. What does "bird of passage"; mean in the context of the given passage?
a. There was a bird in the orchard
b. Other people stole from the orchard
c. Emperor knew him personally
d. He did not visit orchard regularly
e. Bird's song alerted Emperor's men

Choose the word or group of words which is most similar in meaning to the word printed in bold.

101. **Garrulity**
a. credulity   b. speciousness
c. Loquaciousness   d. speciousness

102. **Pandemonium**
a. great joy   b. utter confusion
c. loud noise   d. big crowd

103. **Vicissitude**
a. sorrows   b. misfortunes
c. changes   d. surprises

Choose the word or group of words which is most opposite in meaning to the word printed in bold.

104. **Quiescent**
a. indifferent   b. weak
c. active   d. responsive

105. **Hirsute**
a. Shaggy   b. bald
c. erudite   d. glorious

Read each sentence to find out whether there is any grammatical error or idiomatic error in it. The error, if any, will be in one part of the sentence. If there is no error, mark 5) as the answer. (Ignore errors of punctuation, if any.)

106. Whenever you speak 1)/ take care that 2)/ others are not 3)/ offended by your words. 4)/ No error 5)
   a. 1   b. 2
   c. 3
   d. 4
   e. 5

107. A free press is not 1)/ a privilege but the 2)/ organic necessity in 3)/ a free society. 4) No error 5)
   a. 1
   b. 2
   c. 3
   d. 4
   e. 5

108. Can you 1)/ repair my 2)/ digital-camera until 3)/ Wednesday? 4)/ No error 5)
   a. 1   b. 2   c. 3   d. 4   e. 5

109. Either Ram 1)/ or Bhuvan forgot 2)/ to take 3)/ their pen. 4)/ No error 5)
   a. 1   b. 2   c. 3   d. 4   e. 5

110. The economic disparity 1)/ has grown rapid 2)/ in the era of 3)/ globalization. 4)/ No error 5)
   a. 1   b. 2   c. 3   d. 4   e. 5

111. The subtraction of a binary number Y from another binary number X, done by adding 2's compliment of Y to X, results in a binary number without overflow. This implies that the result is
   (a) Negative and is in normal form
   (b) Negative and is in 2's complement form
   (c) Positive and is in normal form
   (d) Positive and is in 2's complement form

112. 2's complement representation of a 16 bit number (one sign bit and 15 magnitude bits) is FFFF. Its magnitude is decimal representation is
   (a) 0   (b) 1
   (c) 32,767   (d) 65,535

113. An equivalent 2's complement representation of the 2's complement number is 1101 is
   (a) 110100   (b) 001101
   (c) 110111   (d) 111101

114. The 2's complement representation of – 17 is
   (a) 01110   (b) 101111
   (c) 11110   (d) 10001

115. 4-bit 2's complement representation of decimal number is 1000. The number is
   (a) + 8   (b) 0   (c) – 7   (d) – 8

116. The range of the signed decimal numbers that can be represented by 6 bit 1's complement form is
   (a) – 31 to + 31   (b) – 63 to + 64
   (c) – 64 to + 64   (d) – 32 to + 31

117. 11001, 1001 and 111001 corresponds to the 2's complement representation of which one of the following sets of number?
   (a) 25, 9 and 57 respectively
   (b) – 6 , − 6 and −6 respectively
   (c) −7, −7 and −7 respectively
   (d) – 25 , − 9 and – 57 respectively

118. Decimal 43 in Hexadecimal and BCD number system is respectively
   (a) B2, 0100 0011   (b) 2B, 0100 0011
   (c) 2B, 0011 0100   (d) B2, 0100 0100

119. X = 01110 and Y = 11001 are two 5 bit binary numbers represented in 2's complement format. The sum of X and Y represented in 2's complement format using 6 bits is
   (a) 100111   (b) 001000
   (c) 000111   (d) 101001

120. The two numbers represented in signed 2's complement form are P = 11101101 and Q=11100110. If Q is subtracted from P, the value obtained is signed 2's complement form is
   (a) 100000111   (b) 00000111
   (c) 11111001   (d) 111111001

Answers

1.B	2.C	3.C	4.B	5.A	6.B,C	7.A	8.A	9.C	10.B
11.D	12.C	13.B	14.C	15.B	16.A	17.C	18.C	19.A	20.C
21.C	22.B	23.A	24.B	25.B	26.C	27.B	28.A	29.D	30.A
31.B	32.C	33.D	34.C	35.D	36.B	37.B	38.C	39.B	40.D
41.C	42.B	43.C	44.A,C	45.C	46.B	47.A	48.B	49.B	50.C
51.A	52.D	53.A	54.B	55.A	56.C	57.B	58.D	59.A	60.D
61.B	62.D	63.C	64.D	65.C	66.A	67.D	68.D	69.D	70.B
71.C	72.D	73.D	74.B	75.B	76.C	77.C	78.A	79.D	80.B
81.C	82.D	83.A	84.A	85.D	86.A	87.C	88.B	89.D	90.B
91.D	92.C	93.C	94.B	95.B	96.B	97.D	98.D	99.C	100.D
101.C	102.B	103.C	104.C	105.A	106.E	107.B	108.C	109.D	110.B
111.B	112.B	113.D	114.B	115.D	116.A	117.C	118.B	119.C	120.B