No. of Printed Pages : **16**

00633

Entrance Test for
M.Sc. Actuarial Science
2010

Programme Code - 009

Total No. of Questions = 100 ***Time : 3 Hours***

- All questions are ***compulsory***.
- Programmed calculators are ***not*** allowed. Rough work may be done in the space provided at the end of the Test Booklet.
- The Test Booklet has the following ***four*** tests :

Test - I	Mathematics	No. of Questions 50 (1 to 50)
Test - II	Probability and Statistics	No. of Questions 20 (51 to 70)
Test - III	General English	No. of Questions 15 (71 to 85)
Test - IV	General Awareness of Economic Environment	No. of Questions 15 (86 to 100)

Read the instructions given on the OMR Answer Sheet carefully before you start.

Each question carries 1 mark. For each wrong answer there is negative marking of 0.25 mark.

HOW TO FILL UP THE INFORMATION ON THE ENTRANCE TEST OMR ANSWER SHEET

While filling up the OMR Answer Sheet, you should follow the following guidelines :

1. Write your complete Roll Number. This should correspond to the roll number already supplied to you. Also write your correct name, address with pin code in the space provided, in ink. Put your signatures on the Answer Sheet with date, in ink. Ensure that the Invigilator in your examination hall also puts his signatures with date on the OMR Answer Sheet at the space provided. You should use HB pencil to mark the answers of the questions on the OMR Answer Sheet.

2. Do not make any stray marks on the OMR Answer Sheet.

3. Write correct information in numerical digits in Roll No., Programme Code, Date and Month and Examination Centre Code Columns. **The column of Course Code should be left blank**. The corresponding circle should be dark enough and should be filled in completely.

4. Each question is followed by four probable answers which are numbered (1), (2), (3) and (4). You should select and show only one answer to each question considered by you as the most appropriate or the correct answer. Select the most appropriate answer. Then by using HB pencil, blacken the circle bearing the correct answer number against the serial number of the question. **If you find that answer to any question is none of the four alternatives given under the question you should darken the circle with '0'.**

5. If you wish to change your answer, **ERASE** completely the already darkened circle by using a good quality eraser and then blacken the circle bearing your revised answer number. If incorrect answer is not erased completely, smudges will be left on the erased circle and the question will be read as having two answers by the Optical Mark Reader (OMR) and will be ignored for giving any credit.

6. No credit will be given if more than one answer is given for one question. Therefore, you should select the most appropriate answer. 0.25 mark will be reduced if more than 1 answer is given for 1 question.

7. You should not spend too much time on any one question. If you find any particular question difficult, leave it and go to the next. If you have time left after answering all the questions, you may go back to the unanswered ones.

8. There is negative marking for wrong answers. For each wrong answer 0.25 mark will be deducted.

GENERAL INSTRUCTIONS

1. Mobile Phones, programmed calculators, books, slide-rules, foot rulers, note-books or written notes, etc. are not allowed inside the examination hall.

2. You should follow the instructions given by the Centre Superintendent, Observers and by the Invigilators at the examination venue. If you violate the instructions you will be disqualified.

3. Any candidate found copying or receiving or giving assistance in the examination will be disqualified.

4. The Test Booklet and the OMR Answer Sheet would be supplied to you by the Invigilators. **After the exam is over, you should hand over the Test Booklet and the OMR Answer Sheet to the Invigilator before leaving the examination hall.** Any candidate who does not return the Question Booklet and the OMR Answer Sheet will be disqualified.

5. All rough work is to be done on the test booklet itself and not on any other paper. Scrap paper is not permitted. For arriving at answers you may work in the margins, make some markings or underline in the test booklet itself.

6. The University reserves the right to cancel scores of any candidate who impersonates or uses malpractices. The examination is conducted under uniform conditions. The University would also follow a procedure to verify the validity of scores of all examinees uniformly. If there is substantial indication that your performance is not genuine, the University may cancel your score.

TEST - I
MATHEMATICS

1. If $y = 3x^2 + 4x + 5$ then $y'' =$ _____ .

(1) $6x$ (2) 6 (3) $3x + 4$ (4) $6x + 4$

2. If $y = ae^x + be^{-x} + c$, where a, b, c are parameters, then $y''' =$ _____ .

(1) y (2) y' (3) 0 (4) y''

3. If $x = \sin t$, $y = \sin pt$ then $(1 - x^2)\frac{d^2y}{dx^2} - x\frac{dy}{dx} + p^2 y =$ _____ .

(1) 0 (2) 1 (3) -1 (4) $1/\sqrt{2}$

4. $\int e^{\log x}\, dx =$ _____ .

(1) $x + c$ (2) $\frac{x^2}{2} + c$ (3) $e^{\log x}.\frac{1}{x} + c$ (4) None

5. $\int \frac{\sin^6 x}{\cos^8 x} dx =$ _____ .

(1) $\tan 7x + c$ (2) $\frac{\tan^7 x}{7} + c$ (3) $\frac{\tan 7x}{7} + c$ (4) $\sec^7 x + c$

6. $\int \frac{1}{\sqrt{4 - x^2}} dx =$ _____ .

(1) $\sin^{-1}(x/2) + c$ (2) $\sinh^{-1}(x/2) + c$ (3) $\cosh^{-1}(x/2) + c$ (4) None

7. $\int \frac{1}{a^2 \sin^2 x + b^2 \cos^2 x} dx =$ _____ .

(1) $\frac{1}{ab}\tan^{-1}\left(\frac{a \tan x}{b}\right) + c$ (2) $\tan^{-1}\left(\frac{a \tan x}{b}\right) + c$

(3) $\frac{1}{ab}\tan^{-1}\left(\frac{b \tan x}{a}\right) + c$ (4) $\tan^{-1}\left(\frac{b \tan x}{a}\right) + c$

8. A function $f(x)$ satisfying $f''(x) = x^{-3/2}$, $f'(4) = 2$, $f(0) = 0$ is :

(1) $3x + 4\sqrt{x}$ (2) $3x - 4\sqrt{x}$ (3) $3x - 2\sqrt{x}$ (4) None

9. $\int_0^1 \frac{\tan^{-1} x}{1 + x^2} dx =$ _____ .

(1) $\frac{\pi^2}{4}$ (2) $\frac{\pi^2}{18}$ (3) $\frac{\pi^2}{32}$ (4) $\frac{\pi^2}{8}$

10. $\int_0^{\frac{\pi}{2}} \sin^6 x \cos^5 x \, dx =$ _____ .

(1) $\frac{8}{693}$ (2) $\frac{5}{693}$ (3) $\frac{4}{693}$ (4) $\frac{10}{693}$

11. $\int_0^{\frac{\pi}{2}} \frac{1}{4 + 5\sin x} dx =$ _____ .

(1) log2 (2) $\frac{1}{2}$log2 (3) $\frac{1}{3}$log2 (4) None

12. With usual notation $\int_0^2 [x] \, dx =$ _____ .

(1) 0 (2) 1 (3) 2 (4) 3

13. The area bound by the curve $y = \sin ax$ with x-axis in one arc of the curve is _____ .

(1) $4/a$ (2) $2/a$ (3) $1/a$ (4) 2a

14. The area of the region bound by $y = x^2 + 2$, $y = -x$, $x = 0$, $x = 1$ is _____ .

(1) $13/2$ (2) $15/14$ (3) $17/6$ (4) $19/8$

15. The approximate value of $\int_1^9 x^2\,dx$ by using trapezoidal rule with 4 equal intervals is _____ .

(1) 248 (2) 242.5 (3) 242.8 (4) 243

16. How many 4 letter permutations can be made from the letters of the word TRIANGLE.

(1) ${}^8P_4$ (2) ${}^8C_4$ (3) $\frac{8!}{4!}$ (4) 8!4!

17. If ${}^nP_r = 1716$ then (n, r) = _____ .

(1) (13, 3) (2) (12, 3) (3) (10, 4) (4) (9, 5)

18. If ${}^nC_r + {}^nC_{r+1} = {}^{(n+1)}C_x$ then $x =$ _____ .

(1) r (2) $r-1$ (3) n (4) $r+1$

19. The number of ways of dividing 50 books into 2 groups of 25 each is _____ .

(1) ${}^{50}P_{25}$ (2) ${}^{50}C_{25}$ (3) $\frac{1}{2}\left({}^{50}C_{25}\right)$ (4) $\frac{1}{2}\left({}^{50}P_{25}\right)$

20. The sum of the divisors of $2^4\,3^3\,5^2$ is _____ .

(1) 38440 (2) 60 (3) 10800 (4) 24300

21. If $A = \begin{bmatrix} 1 & -2 \\ -4 & 3 \end{bmatrix}$, $B = \begin{bmatrix} 4 & 1 \\ -3 & 2 \end{bmatrix}$ then $3A - 2B =$ _____ .

(1) $\begin{bmatrix} -5 & -8 \\ -6 & 5 \end{bmatrix}$ (2) $\begin{bmatrix} -5 & -8 \\ 6 & -5 \end{bmatrix}$ (3) $\begin{bmatrix} 5 & -8 \\ -6 & 5 \end{bmatrix}$ (4) None

22. The additive inverse of $\begin{bmatrix} 2 & -1 \\ -3 & 4 \end{bmatrix}$ is _____ .

(1) $\begin{bmatrix} 0 & 0 \\ 0 & 0 \end{bmatrix}$ (2) $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$ (3) $\begin{bmatrix} -2 & 1 \\ 3 & -4 \end{bmatrix}$ (4) $\begin{bmatrix} 4 & 1 \\ 3 & 2 \end{bmatrix}$

23. If $\begin{bmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \\ 1 & 1 & 1 \end{bmatrix} = A$, then $A^2 =$ _____ .

(1) A (2) 2A (3) Unit Matrix (4) 3A

24. If $AB = A$, $BA = B$ then $A^2 + B^2 =$ _____ .

(1) $A + B$ (2) $A - B$ (3) AB (4) 0

25. The order of the matrix A is 3×5 and that of B is 2×3. The order of the matrix BA is _____ .

(1) 2×3 (2) 3×2 (3) 2×5 (4) 5×2

26. The conjugate of $\frac{1}{2+i}$ is _____ .

(1) $\frac{2+i}{5}$ (2) $\frac{1}{2-i}$ (3) $\frac{2-i}{5}$ (4) $\frac{5}{2+i}$

27. If 'n' is a multiple of 3 then $\omega^n + \omega^{2n} =$ _____ .

(1) 0 (2) 1 (3) -1 (4) 2

28. $i^{243} =$ _____ .

(1) $-i$ (2) i (3) $2i$ (4) i^2

29. If $|z - 5 + 2i| = 3$, then the locus of z is _____ .

(1) Straight line (2) Circle (3) Perpendicular (4) None

30. If 'a' is a complex number and 'b' is a real number then the equation $\bar{a}z + a\bar{z} + b = 0$ represents a _____ .

(1) Straight line (2) Parabola (3) Circle (4) Hyperbola

31. Solve $(D^2 - 3D + 2)y = 0$.

(1) $y = c_1e^x - c_2e^{3x}$ (2) $y = c_1e^x + c_2e^{2x}$ (3) $y = c_1e^x - c_2e^{2x}$ (4) None

32. Solve $(D^2 - 3D + 2)y = e^x$.

(1) $y = c_1e^x + c_2e^{2x} - xe^x$ (2) $y = c_1e^x - c_2e^{2x} + xe^x$

(3) $y = c_1e^x - c_2e^{2x}$ (4) None

33. Solve $\frac{d^3y}{dx^3} - 4\frac{d^2y}{dx^2} + 5\frac{dy}{dx} - 2y = 0$.

(1) $y = c_1e^x + c_2e^{2x} + c_3$ (2) $y = (c_1 + c_2x)e^x - c_3e^{2x}$

(3) $y = (c_1 + c_2x)e^x + c_3e^{2x}$ (4) None

34. $\lim_{n\to\infty}\left(1 + \frac{1}{n}\right)^n =$ _____ .

(1) 1 (2) e (3) 0 (4) None

35. $\lim_{n\to 2}\frac{x^2 - 3x + 2}{x^2 + x - 6} =$ _____ .

(1) $\frac{2}{5}$ (2) $\frac{3}{5}$ (3) $\frac{1}{5}$ (4) $\frac{4}{5}$

36. The sum to infinity of the series $1 + \frac{4}{5} + \frac{7}{5^2} + \frac{10}{5^3} + \ldots.$ is _____ .

(1) $\frac{16}{35}$ (2) $\frac{1}{8}$ (3) $\frac{35}{16}$ (4) $\frac{8}{16}$

37. The nth term of the series $3+5+9+15+23+\ldots.$ is _____ .

(1) n^2+n+1 (2) n^2-n+3 (3) n^2+n-3 (4) None

38. If a, b, c are in geometric series then $\log_a 10$, $\log_b 10$, $\log_c 10$ are in :

(1) A.P. (2) G.P. (3) H.P. (4) None

39. The maximum value of $\frac{\log x}{x}$ is :

(1) 1 (2) $\frac{2}{e}$ (3) e (4) $\frac{1}{e}$

40. The sum of two non-zero numbers is 6. The minimum value of the sum of their reciprocals is _____ .

(1) $\frac{3}{4}$ (2) $\frac{6}{5}$ (3) $\frac{2}{3}$ (4) None

41. The minimum value of $x^2 + \frac{250}{x}$ is _____ .

(1) 75 (2) 25 (3) 50 (4) 0

42. Solve $\frac{dy}{dx} + \sqrt{\frac{1-y^2}{1-x^2}} = 0$.

(1) $\cos^{-1} y + \cos^{-1} x = c$ (2) $\sin^{-1} y + \sin^{-1} x = c$

(3) $\tan^{-1} y + \tan^{-1} x = c$ (4) None

43. Solve $(e^y + 1)\cos x\, dx + e^y \sin x\, dy = 0$.

(1) $(e^y + 1)\sin x = c$ (2) $(e^y + 1)\cos x = c$ (3) $(e^y + 1)\sec x = c$ (4) None

44. Solve $(1+x)\frac{dy}{dx} - xy = 1 - x$.

(1) $y\,(1+x) = x + ce^x$ (2) $y\,(1+x) = x - ce^x$

(3) $y\,(1+x) = cxe^x$ (4) None

45. Solve $\frac{d^2y}{dx^2} - a^2y = 0$, where $a \neq 0$.

(1) $y = c_1e^{ax} + c_2e^{-ax}$ (2) $y = c_1e^{ax} - c_2e^{-ax}$

(3) $y = c_1e^{ax} + c_2xe^{ax}$ (4) None

46. Solve $(x-1)\,y'' - xy' + y = 1$.

(1) $y = 1 + c_1x + c_2e^x$ (2) $y = 1 - c_1x + c_2e^x$

(3) $y = 1 + c_1x - c_2e^x$ (4) None

47. The order of $x^3\frac{d^3y}{dx^3} + 2x^2\frac{d^2y}{dx^2} - 3y = x$ is _____ .

(1) 2 (2) 3 (3) 1 (4) 0

48. The integrating factor of $x\frac{dy}{dx} + y = y^2 \log x$ is _____ .

(1) x (2) $\frac{1}{x}$ (3) $-x$ (4) None

49. The complementary function of $(D^2 + 4D - 12)y = e^x$ is :

(1) $c_1e^{2x} + c_2e^{-bx}$ (2) $c_1e^{-2x} + c_2e^{3x}$ (3) $c_1e^{-2x} + c_2e^{bx}$ (4) None

50. The general solution of $\frac{dy}{dx} = e^{x+y}$ is _____ .

(1) $e^x + e^y = c$ (2) $e^x - e^y = c$ (3) $e^x + e^{-y} = c$ (4) $e^{-x} + e^{-y} = c$

TEST - II
PROBABILITY AND STATISTICS

51. If $P(A) = \frac{1}{6}$, $P(B) = \frac{1}{4}$ and $P\left(\frac{A}{B}\right) = \frac{1}{6}$ then $P\left(\frac{B}{A}\right) =$ _____ .

(1) $\frac{1}{6}$ (2) $\frac{1}{4}$ (3) $\frac{1}{8}$ (4) $\frac{3}{4}$

52. If A and B are any two mutually exclusive events then $P(A \cup B) =$ _____ .

(1) $P(A) + P(B)$ (2) $P(A) + P(B) - P(AB)$
(3) $P(A) + P(B) + P(AB)$ (4) $P(A) + P(B) - P(A)\,P(B)$

53. A bag contains 2 red and 4 white balls. The probability that two balls drawn are white is _____ .

(1) $\frac{2}{15}$ (2) $\frac{2}{5}$ (3) $\frac{4}{15}$ (4) $\frac{2}{4}$

54. If X be a continuous random variable, then $P[X = -1] =$ _____ .

(1) -1 (2) 1 (3) 0 (4) ∞

55. Binomial distribution was discovered by _____ .

(1) Fisher (2) Laplace (3) Karl Pearson (4) Bernoulli

56. The coefficient of variation for Binomial distribution is given by :

(1) $100\sqrt{\frac{np}{q}}$ (2) $100\sqrt{\frac{q}{np}}$ (3) $100\left(\frac{np}{q}\right)$ (4) $100\left(\frac{q}{np}\right)$

57. Standard deviation of Poisson distribution with parameter 'm' is given by :

(1) m (2) $\frac{1}{m}$ (3) $\sqrt{m}$ (4) $\frac{1}{\sqrt{m}}$

58. The mean of Binomial distribution with $n = 20$ and $q = 0.75$ is given by :

(1) 5 (2) 15 (3) 10 (4) 3

59. With usual notation, $\gamma_2 = 0$ for _____ distribution.

(1) Binomial (2) Poisson (3) Normal (4) Exponential

60. With usual notation $F(-\infty, y) =$ _____ .
(1) 0 (2) 1 (3) ∞ (4) $F(y)$

61. Scattered diagram is frequently used to represent _____ .
(1) Frequency distribution (2) Univariate data
(3) Bivariate data (4) Trivariate data

62. Correlation coefficient is independent of _____ .
(1) change of origin only (2) change of scale only
(3) change of origin and scale (4) regression coefficient

63. The sum of residuals is _____ .
(1) zero (2) one (3) always positive (4) always negative

64. In the case of no correlation, the two lines of regression will be _____ .
(1) coincided (2) parallel to each other
(3) dependent (4) perpendicular to each other

65. Regression coefficients are independent of _____ .
(1) change of origin only (2) change of scale only
(3) change of origin and scale (4) correlation coefficient

66. Correlation coefficient is _____ of two regression coefficients.
(1) Arithmetic Mean (2) Median
(3) Geometric Mean (4) Harmonic Mean

67. The limits of quartile coefficient of Skewness (S_k) is _____ .
(1) $-1 \leq S_k \leq 1$ (2) $0 \leq S_k \leq 1$ (3) $-3 \leq S_k \leq 3$ (4) $-\infty \leq S_k \leq \infty$

68. μ_2 for first n natural numbers is _____ .
(1) $\frac{n(n+1)}{2}$ (2) $\frac{n(n+1)(2n+1)}{6}$
(3) $\frac{n^2-1}{12}$ (4) $\frac{(n+1)}{2}$

69. With usual notation, γ_1 is a measure of _____ .
(1) Central Tendency (2) Skewness
(3) Kurtosis (4) Dispersion

70. With usual notation $\gamma_2 =$ _____ .
(1) $\beta_2 - 3$ (2) $\sqrt{\beta_1}$ (3) $1 - \beta_2$ (4) $1 - \beta_1$

TEST - III
GENERAL ENGLISH

Read the following passage and choose the option A, B, C or D which best answers the questions 71 to 75.

The contemporary industrial robot, in the eyes of politicians and others, may wear the halo of high technology, but it came into being to meet a rather mundane need. In the booming labour market of the early 1960s it became increasingly difficult to find people willing to do boring, repetitive and unpleasant jobs. What was needed was not a machine which could master elaborate human skills, but one which could provide the mindless *lumpenproletariat* demanded by mass production.

What had to be learnt, and proved well within the robot's capacity, were sequences of precise movement of the arm and hand. Such sequences were relatively easily programmed into a computer memory, especially after the advent of the microprocessor freed robots from their dependence on the giant mainframe computers of the 1960s. But however impressive, even uncanny, a robot may appear to the layman as it repeats a series of movements with flawless precision, it is in fact operating blindly and by rote.

Repetitive manipulation is, of course, a skill common to many machines : What differentiates the robot is that it makes use of an articulated arm analogous to the human limb and that it can be reprogrammed to perform a whole variety of tasks without the need to redesign or adjust its mechanical components. There are, however, a limited range of applications in which a manipulator arm, operating blindly and without intelligence, is useful. Looking through manufacturers' catalogues one is struck not by the machine's versatility, but by the monotonous repetition of a sort of litany of robot functions : machine tool loading and unloading, spot welding, paint spraying and parts transfer being the commonest.

Whatever its task, a robot is dependent for its effectiveness upon a whole supporting cast of automated machines. Everything must be presented to it in consistent positions and orientations; it can only operate in a world of guaranteed predictability. Indeed, to consider robots in isolation from automation in general is rather like studying an ant which has been removed from an anthill – it is an ingenious but purposeless curiosity. The need to provide an automated environment has so far restricted robot use to large scale industry; businesses such as specialist machine shops, producing small batches of many different items, have little incentive to set up the paraphernalia of conveyors, jigs and electronic communication which a robot requires.

Those who leap to the conclusion that the provision of more and more robots is a guarantee elixir of industrial health should also be aware that there is a substantial body of opinio which argues that, rather than being the universal worker of the future, the robot is no mo than a stop-gap expedient forced upon us by the limitations of insufficient and inadequat automation. Automation, the argument goes, achieves its really spectacular successes whe it abandons the attempt to do things in ways based on human skills and finds solutions tha are quite novel and intrinsically mechanical.

71. The article makes it clear, contrary to popular opinion, robots :

(1) Were designed to replace human labour
(2) Have been in use for many years
(3) Have fairly limited skills
(4) Cannot be classed as high technology

72. In the early 1960s the labour :

(1) became too prosperous to work
(2) did not wish to work hard
(3) did not wish to perform monotonous tasks
(4) did not want to get involved in mass production

73. After the 1960s robots became more :

(1) Convenient to use
(2) Accurate in operation
(3) Widely used
(4) Consistently reliable

74. Robots are similar to human beings because they :

(1) are flowless and uncanny
(2) make use of an arm-like structure to perform tasks
(3) can multi-task with ease
(4) can function with great versatility

75. Robots differ from other machines in that :

(1) they react like human beings
(2) they need little maintenance
(3) they have a limited number of applications
(4) they are easy to switch from task to task

Choose the word/phrase (1, 2, 3 or 4) which best completes each sentence.

76. The peace of the public library was _____ by the sound of a mobile phone.

(1) smashed (2) fractured

(3) demolished (4) shattered

77. There were so many people _____ me in the crowd that I couldn't hold the camera study.

(1) jostling (2) jerking (3) obstructing (4) agitating

78. The smoke _____ from the burning tyres, could be seen for miles.

(1) bulging (2) radiating (3) billowing (4) sweeping

79. I very much _____ the Sarcastic comments the boss made about my work.

(1) objected (2) protested (3) grudged (4) resented

80. Although he addressed us in a friendly way, there were threatening _____ in what he said.

(1) overtones (2) connotations (3) inferences (4) accusations

Choose the correct option (1, 2, 3 or 4) which best completes each sentence :

81. He said that he _____ the e-mail the day before and would answer it soon.

(1) received (2) had received

(3) has received (4) would receive

82. They say that they _____ all they can.

(1) had done (2) would do (3) did (4) have done

83. He asked the ground staff when _____.

(1) will the plane arrive ? (2) plane would arrive ?

(3) the plane would arrive (4) will plane arrive ?

84. She inquired whether _____ anything she could do.

(1) is there (2) there could be (3) there was (4) was there

85. Would you mind _____ so loudly, please ?

(1) not to talk (2) not talking (3) not talk (4) talking not

TEST - IV
GENERAL AWARENESS OF ECONOMIC ENVIRONMENT

86. The committee on Fuller Capital Account Convertibility was chaired by :
(1) Dr. C. Rangarajan (2) Dr. Bimal Jalan
(3) Dr. S.S. Tarapore (4) Dr. Y.V. Reddy

87. The main element(s) of Basel II norms is (are) :
(1) Capital adequacy (2) Supervisory review
(3) Market discipline (4) All the above

88. The percentage contribution of 'service sector' to GDP in 2007-08 has been :
(1) 60.2 (2) 50.9 (3) 62.9 (4) 65.0

89. Which of the following statements is incorrect about currency convertibility ?
(1) Currency convertibility would discourage black market transactions
(2) The RBI would be a direct player if currency convertibility takes place
(3) The exchange rate would reflect the real strength of the economy
(4) The exchange rate would be determined by the free play of market forces.

90. Real national income denotes :
(1) National income measured at constant prices
(2) Real welfare of the citizens
(3) National income at current prices
(4) Net factor income

91. Bank rate is the rate at which :
(1) A bank lends to the public
(2) RBI lends to the public
(3) Union Government lends to other countries
(4) RBI gives credit to commercial banks

92. Quantitative credit controls do not include :
(1) Moral suasion (2) Cash reserve ratio
(3) Open market operations (4) Bank rate

93. Indian railways is :
(1) A joint venture of the union and state governments
(2) A departmental enterprise of the union government
(3) A state government imitative
(4) None of the above

94. Who controls the activities of indigenous bankers ?
(1) Lead Banks in the area concerned
(2) Regional Rural Banks
(3) Reserve Bank of India
(4) None of the above

95. "Octroi" is levied and collected by :
(1) Local bodies (2) State governments
(3) Union government (4) All the above

96. The first derivative product in India - index based futures - was launched in June 2000 by :
(1) NSE (2) BSE (3) SBI (4) SEBI

97. The term fiscal deficit means :
(1) Total receipts minus total expenditure
(2) Total receipts minus interest payments on external debt
(3) Revenue receipts minus expenditure
(4) Revenue receipts minus defence expenditure

98. Inflation in India is measured based on :
(1) Wholesale Price Index
(2) Cost of living index for urban non-manual workers
(3) Cost of living index for rural agricultural labourers
(4) None of the above

99. Which of the following is not an indirect tax ?
(1) Customs duties (2) Excise duty
(3) Goods and service tax (4) Corporate tax

100. In India, devolution of resources from the centre to the states takes place on the recommendation of :
(1) Planning Commission (2) National Development Council
(3) Finance Commission (4) None of the above

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