

048/2018



Question Booklet  
Alpha Code

A

Question Booklet  
Serial Number

Total Number of Questions : 100

Time : 75 Minutes

Maximum Marks : 100

### INSTRUCTIONS TO CANDIDATES

1. The Question Paper will be given in the form of a Question Booklet. There will be four versions of Question Booklets with Question Booklet Alpha Code viz. **A, B, C & D**.
2. The Question Booklet Alpha Code will be printed on the top left margin of the facing sheet of the Question Booklet.
3. The Question Booklet Alpha Code allotted to you will be noted in your seating position in the Examination Hall.
4. If you get a Question Booklet where the alpha code does not match to the allotted alpha code in the seating position, please draw the attention of the Invigilator IMMEDIATELY.
5. The Question Booklet Serial Number is printed on the top right margin of the facing sheet. If your Question Booklet is un-numbered, please get it replaced by new Question Booklet with same alpha code.
6. The Question Booklet will be sealed at the middle of the right margin. Candidate should not open the Question Booklet, until the indication is given to start answering.
7. Immediately after the commencement of the examination, the candidate should check that the Question Booklet supplied to him/her contains all the 100 questions in serial order. The Question Booklet does not have unprinted or torn or missing pages and if so he/she should bring it to the notice of the Invigilator and get it replaced by a complete booklet with same alpha code. This is most important.
8. A blank sheet of paper is attached to the Question Booklet. This may be used for rough work.
9. **Please read carefully all the instructions on the reverse of the Answer Sheet before marking your answers.**
10. Each question is provided with four choices **(A), (B), (C)** and **(D)** having one correct answer. Choose the correct answer and darken the bubble corresponding to the question number using Blue or Black Ball Point Pen in the OMR Answer Sheet.
11. **Each correct answer carries 1 mark and for each wrong answer 1/3 mark will be deducted. No negative mark for unattended questions.**
12. No candidate will be allowed to leave the examination hall till the end of the session and without handing over his/her Answer Sheet to the Invigilator. Candidates should ensure that the Invigilator has verified all the entries in the Register Number Coding Sheet and that the Invigilator has affixed his/her signature in the space provided.
13. Strict compliance of instructions is essential. Any malpractice or attempt to commit any kind of malpractice in the Examination will result in the disqualification of the candidate.





1. "Das Capital" was published in which of the following languages ?  
A) English                      B) Russian                      C) German                      D) French
2. Who is the first woman writer to win the Jnanpith Award ?  
A) Kamala Surayya                      B) Ashapoorna Devi  
C) Arundhathi Roy                      D) Mahaswetha Devi
3. A Kerala dance form which is also known as KALIYATTAM  
A) Koodiyattam                      B) Kathakali  
C) Theyyam                      D) Ottam Thullal
4. GUMAR is a dance of  
A) Assam                      B) Rajasthan                      C) Maharashtra                      D) Odhisha
5. The country which is known as the land of White Elephants  
A) Myanmar                      B) Thailand                      C) Nepal                      D) Laos
6. Which is the election symbol of the Republican Party of U.S.A. ?  
A) Lion                      B) Eagle                      C) Tiger                      D) Elephant
7. The first postage stamp was introduced by  
A) U.S.A.                      B) England                      C) France                      D) Canada
8. The freedom fighter who is known as the Indian Bismark  
A) Gopalkrishna Gokhale                      B) B. G. Tilak  
C) M. A. Ansari                      D) Sardar Vallabhbhai Patel
9. National Panchayat is the Parliament of  
A) Bhutan                      B) Pakistan                      C) Sri Lanka                      D) Nepal
10. The newly appointed Chief Election Commissioner of India is  
A) Ranjith Sinha                      B) Rajeev Kumar  
C) Achal Kumar Joti                      D) Deepak Misra
11. Who is the last Diwan of Travancore ?  
A) C. P. Ramaswami Ayyar                      B) P. G. N. Unnithan  
C) P. Madhavarayar                      D) K.A. Sankara Menon



12. KARGIL VIJAY DIVAS is celebrated on  
A) 14<sup>th</sup> May  
B) 26<sup>th</sup> July  
C) 21<sup>st</sup> September  
D) 28<sup>th</sup> November
13. The President of India who is elected with the lowest victory margin  
A) N. Sanjeeva Reddy  
B) R. Venkataraman  
C) V. V. Giri  
D) K. R. Narayanan
14. Swami Vivekananda Airport is located in  
A) Calcutta  
B) Bhuvaneswar  
C) Bhopal  
D) Raipur
15. Which among the following States, Constituted a Committee to expedite the possibilities of having its own State flag ?  
A) Telangana      B) Karnataka      C) Bihar      D) Punjab
16. Wagon Tragedy memorial is at  
A) Kottackal      B) Thanur      C) Beypore      D) Tirur
17. The first Malayalee to become the Deputy Chairman of Rajyasabha  
A) M.A. Baby  
B) M.M. Jacob  
C) P.J. Kurian  
D) Vayalar Ravi
18. Central Leather Research Institute is located in  
A) Bengalooru  
B) Hyderabad  
C) Chennai  
D) Nagpur
19. "The Nation" is a newspaper published by  
A) Balagangadhar Tilak  
B) Bhagat Singh  
C) Gopalkrishna Gokhale  
D) M.A. Jinnah
20. Who among the following is a leader of Paliyam Sathyagraha ?  
A) A.G. Velayudhan  
B) K.P. Vallon  
C) Kesavan Shastri  
D) Pandit Karuppan



21. What is India's fiscal deficit during the financial year 2016 – 17 ?  
A) 3.4                      B) 3.2                      C) 3.5                      D) 3.8
22. What is currency appreciation ?  
A) Official reduction in the value of currency  
B) Fall the value of currency due to interaction of demand and supply  
C) Official increase in the value of currency  
D) Rise the value of currency due to interaction of demand and supply
23. Rival but non-excludable goods are called  
A) Common resources                      B) Merit goods  
C) Pure public goods                      D) Private goods
24. Who is the Chairman of 5<sup>th</sup> State Finance Commission ?  
A) M.A. Oommen                      B) B.A. Prakash  
C) Prabhat Patnaik                      D) C. P. John
25. Imposing different amounts of tax on people with different ability to pay is known as  
A) Vertical imbalance                      B) Vertical equity  
C) Horizontal equity                      D) Horizontal imbalance
26. Who is the current Chairman of NITI Aayog ?  
A) Aravind Panagaria                      B) Aravind Subramannian  
C) Rajiv Kumar                      D) Narendra Modi
27. Which Committee adopted Cost of Living as the basis for identifying poverty ?  
A) Suresh Tendulkar Committee                      B) Y. K. Alag Committee  
C) Lakdawala Committee                      D) National Planning Committee
28. Which religious group in India has the highest rate of unemployment according to the 68<sup>th</sup> round of NSSO ?  
A) Muslims                      B) Sikhs  
C) Hindus                      D) Christians
29. SGRY launched in  
A) April 1999                      B) September 1999  
C) September 2001                      D) April 2001



30. Who is the regulator of Capital Market in India ?  
A) RBI  
B) Stock Exchanges  
C) Ministry of Finance  
D) SEBI
31. Derivative Markets are part of  
A) Forward Market  
B) Spot Market  
C) Primary Market  
D) None of these
32. What is the Marginal Standing Facility (MSF) rate of RBI fixed in August 2017 ?  
A) 6.75%  
B) 6.25%  
C) 6.5%  
D) 6%
33. Which of the following commodity outside the ambit of GST ?  
A) Cream  
B) Fruit juices  
C) Hair Shampoo  
D) Electricity
34. What is the GDP growth rate of India during the financial year 2016 – 17 ?  
A) 7.5  
B) 7.1  
C) 6.1  
D) 6.5
35. The agency responsible for preparing WPI in India  
A) Labor Bureau  
B) CSO  
C) Ministry of Commerce and Industries  
D) NAS
36. What is 'Inflation Tax' ?  
A) Degree of decrease in the value of cash  
B) Imposing taxes to curb inflation  
C) Reduction in tax at the time of inflation  
D) None of these
37. Developing a budget from scratch is known as  
A) ZBB  
B) PPBS  
C) Traditional Budgeting  
D) PBB
38. Which Committee appointed to review FRBM Act ?  
A) Abhijit Sen Committee  
B) Rangarajan Committee  
C) N.K. Singh Committee  
D) Y.K. Alag Committee
39. What is 'Guillotine' ?  
A) Reduction of an amount from demands for grants  
B) Passing demand for grants without discussion  
C) Obtain temporary permission to meet expenditure  
D) Permission to incur expenditure from consolidated fund
40. What is the recommendation of 14<sup>th</sup> Finance Commission regarding State's share of union tax ?  
A) 32%  
B) 44%  
C) 38%  
D) 42%



41. The length of time (minutes) that a certain boy speaks on the telephone is found to be a random phenomenon, with a probability function given by

$$f(x) = A e^{-x/3} \quad \text{for } x > 0 \\ = 0 \quad \text{otherwise}$$

The value of A, which makes the function of a probability density function is

- A) 1                                      B) 3                                      C) 1/3                                      D) -1/3
42. Basket of 15 oranges has an average weight of 200 gms. If an orange weighing 250 gms is taken out of the basket and is substituted by another weighing 235 gms, what would be the average weight of 15 oranges now in the basket ?
- A) 199 gms                                      B) 200 gms  
C) 185 gms                                      D) 205 gms
43. The positive square root of the arithmetic mean of squares of the deviations of the given values from their arithmetic mean is denoted as
- A) Mean deviation                                      B) Standard deviation  
C) Variance                                      D) Mode
44. A bag contains 5 white and 3 black balls. Another bag contains 4 white and 7 black balls. A ball is randomly drawn from one of the bags and found to be black. What is the probability that it is from the first bag ?
- A) 3/16                                      B) 3/8                                      C) 10/19                                      D) 33/89
45. For a normal distribution, the quartile deviation, the mean deviation and standard deviation are approximately in the ratio
- A) 10 : 12 : 15                                      B) 12 : 10 : 15  
C) 10 : 15 : 12                                      D) None of these



46. Let  $X$  and  $Y$  are two independent Gamma variables. Then  $X/Y$  is distributed as  
A) Gamma variate  
B) Beta variate of first kind  
C) Beta variate of second kind  
D) Exponential
47. Let  $X_1$  and  $X_2$  be two random variables following the density  $f(x) = e^{-x}$   $X > 0$  then what is the distribution of  $Z = X_1/X_2$  ?  
A) Exponential  
B) Gamma  
C) t  
D) F
48. A symmetric die is thrown 600 times. The lower bound for the probability of getting 80 to 120 sixes is  
A) 80/120  
B) 19/24  
C) 8/24  
D) 6/12
49. The sampling error associated with a census study is  
A) 0  
B) 1%  
C) 2%  
D) 5%
50. Which type of experimental design does not use the principle of local control in measuring variation among experimental units ?  
A) RBD  
B) LSD  
C) CRD  
D) None of these
51. The number of treatments in a  $2^2$  factorial experiment is  
A) 1  
B) 4  
C) 3  
D) 8
52. If a sample is taken at random from a population, it is likely to possess almost the same characteristics as that of the population. This principle is called  
A) Probability sampling  
B) Law of inertia of large numbers  
C) Non-probability sampling  
D) Law of statistical regularity
53. Let  $(X_1, X_2, X_3)$  is a random sample of size 3 taken from  $N(\mu, \sigma^2)$ . Let  $T_1 = (X_1 + X_2 + X_3)/3$  and  $T_2 = (X_1 + 2X_2 + 3X_3)/6$  be the estimators used to estimate  $\mu$ . Which estimator is more efficient ?  
A)  $T_1$   
B)  $T_2$   
C)  $T_1$  and  $T_2$   
D) None





54. What is the variance of the sufficient estimator for estimating the parameter  $\lambda$  of the Poisson population on the basis of sample of size  $n$  ?
- A)  $n/\lambda$                       B)  $\lambda$                       C)  $\lambda/n$                       D)  $\lambda^2$
55. A test that is used for testing the equality of means of several normal populations having unknown but common variance  $\sigma^2$
- A) Chi-square                      B) ANOVA                      C) Normal                      D) t
56. Probability of rejecting a null hypothesis when it is true is called
- A) Type 1 error                      B) Type 2 error  
C) Power                      D) Significance level
57. If the two regression equations are  $3x + 2y - 80 = 0$  and  $2x + 3y - 70 = 0$ , the value of correlation coefficient is
- A)  $-2/3$                       B)  $2/3$                       C)  $-1$                       D)  $1$
58. The regression lines of Y on X and X on Y are  $Y = aX + b$  and  $X = cY + d$ . Then the ratio of the standard deviations of X and Y is
- A)  $a/c$                       B)  $c/a$   
C)  $\sqrt{a/c}$                       D)  $\sqrt{c/a}$
59. In exponential trend equation  $Y = ab^x$ , the values of X and Y are in the form of
- A) HP, AP                      B) AP, GP  
C) AP, HP                      D) GP, HP
60. The seasonal indices of sales of a firm in the following quarters are for Jan.– Mar.– 100, Apr. – Jun. – 89, Jul.– Sep. – 83, Oct.– Dec. – 128 respectively. If the total sales in Jan.– Mar. of the year be worth Rs. 10,000. How much worth of items should be kept in stock by the firm in Apr.– Jun. to meet the demand ?
- A) 400                      B) 1,000  
C) 8,900                      D) 8,300



61. Accounting for Intangible Assets are related to  
A) AS – 10                      B) AS – 12                      C) AS – 24                      D) AS – 26
62. Which of the following errors are not revealed by the Trial Balance ?  
A) Compensating Errors                      B) Errors of Commission  
C) Wrong Balancing of an Account                      D) Wrong totalling of an Account
63. The determination of expenses for an accounting period is based on the principle of  
A) Objectivity                      B) Materiality                      C) Matching                      D) Periodicity
64. Which financial statement represents the accounting equation  
“assets = liabilities + owners’ equity” ?  
A) Trading Account                      B) Profit and Loss Account  
C) Balance Sheet                      D) Statement of Cash Flows
65. The Database Schema is written in  
A) HLL                      B) DML                      C) DDL                      D) DCL
66. The DBMS language component which can be embedded in a program is  
A) The Data Definition Language  
B) The Data Manipulation Language (DML)  
C) The Database Administrator (DBA)  
D) A Query Language
67. Key to represent relationship between tables is called  
A) Primary Key                      B) Secondary Key                      C) Foreign Key                      D) None of these
68. The full form of DDL  
A) Dynamic Data Language                      B) Detailed Data Language  
C) Data Definition Language                      D) Data Derivation Language
69. Demand deposit also known as  
A) Current Account                      B) Fixed Deposit  
C) Capital Account                      D) Recurring Deposit
70. Rediscounting and giving advance the Central Bank changes interest at a rate which is known as  
A) CRR                      B) SLR                      C) Bank Rate                      D) Credit
71. \_\_\_\_\_ is an alpha-numeric code that uniquely identifies a bank branch participating NEFT system.  
A) IFS                      B) IFSC                      C) FSC                      D) RTGS



72. In India, RTGS has been implemented on  
A) 26 March 2004  
B) 26 March 1998  
C) 26 March 1994  
D) 26 March 2002
73. Marketing helps firms to increase their profits by  
A) Increase in sales  
B) Increase in production  
C) Increase in price  
D) Increase in customer
74. Direct marketing refers to a communication between the \_\_\_\_\_ and \_\_\_\_\_ directly.  
A) Seller and buyer  
B) Firm and suppliers  
C) Society and target market  
D) Price and services
75. The process of supplying products to all retail outlets is known as  
A) Selective distribution  
B) Exclusive distribution  
C) Channel configuration  
D) Intensive distribution
76. Demographic segmentation refers to  
A) The description of the people and their place in society  
B) The description of the people's purchasing behaviour  
C) The location where people live  
D) Geographic regions
77. Financial decision involve  
A) Investment, financing and dividend decision  
B) Investment, financing and sales decision  
C) Financing, dividend and cash decision  
D) None of these
78. The appropriate objective of an enterprise is  
A) Maximisation of sale  
B) Maximisation of owners wealth  
C) Maximisation of profits  
D) None of these
79. 'Bird in hand' argument is given by  
A) Walker's Model  
B) Gordon's Model  
C) MM Model  
D) Residuals Theory
80. Ploughing back of profit means  
A) Dividend declared but not claimed by shareholders  
B) Non-declaration of dividend in any year  
C) Profit earned from illegal sources and employed in business  
D) Retaining the earnings of business for future expansion programme



81. Classify the following differential equation

$$e^x \frac{dy}{dx} + 3y = x^2y$$

- A) Separable and not linear  
 B) Linear and not separable  
 C) Both separable and linear  
 D) Neither separable and linear

82. Which one of the following is the solution of the differential equation  $\frac{dy}{dx} + \frac{x}{1+x}y = 1+x$  ?

- A)  $(1 + Ce^{-x})(1+x)$   
 B)  $\frac{Ce^x}{1+x}$   
 C)  $(1+x)(e^x + C)$   
 D)  $(1 + Ce^x)(1+x)$

83. Which one of the following is the general solution to the problem  $25\frac{d^2y}{dt^2} + 10\frac{dy}{dt} + y = 0$  ?

- A)  $y = C_1e^{\frac{t}{5}} \cos t + C_2e^{\frac{t}{5}} \sin t$   
 B)  $y = C_1e^{\frac{t}{5}} + C_2e^{-\frac{t}{5}}$   
 C)  $y = C_1e^t \cos \frac{t}{5} + C_2e^t \sin \frac{t}{5}$   
 D)  $y = C_1e^{\frac{-t}{5}} + C_2te^{\frac{-t}{5}}$

84. Which one of the following represents the solution of the differential equation  $\frac{dy}{dx} = \frac{x}{1-y}$  ?

- A) Family of circles with centre at (0, 0)  
 B) Family of circles with centre at (0, 1)  
 C) Family of circles with centre at (1, 0)  
 D) Family of circles with centre at (0, -1)

85. Which one of the following is the differential equation of the orthogonal trajectory to the family of curves  $y = cx^n$ , where  $n$  is fixed positive integer and  $c$  an arbitrary constant ?

- A)  $nyy' + x = 0$   
 B)  $nyy' - x = 0$   
 C)  $xy' + ny = 0$   
 D)  $xy' - ny = 0$

86. Let  $V$  be a  $n$ -dimensional complex vector space and let  $W$  denote the subset of  $V$  defined by  $\{x \in V \mid x = \bar{x}\}$ , where  $\bar{x}$  denote the conjugate of  $x$ . Which one of the following is not true ?

- A)  $W$  is a subspace of  $V$   
 B)  $W$  is a real subspace of  $V$   
 C)  $W$  is a real vector space  
 D)  $W$  is an additive subgroup of  $V$



87. Which one of the following is the Kernel of the linear transformation  $T : \mathbb{R}^4 \rightarrow \mathbb{R}^3$  defined by  $T(x_1, x_2, x_3, x_4) = (x_1, 0, x_3, 0)$  ?

- A)  $\text{Ker}(T) = \{(a, 0, 0, b) \mid a, b \in \mathbb{R}\}$       B)  $\text{Ker}(T) = \{(a, 0, b, 0) \mid a, b \in \mathbb{R}\}$   
 C)  $\text{Ker}(T) = \{(0, a, b, 0) \mid a, b \in \mathbb{R}\}$       D)  $\text{Ker}(T) = \{(0, a, 0, b) \mid a, b \in \mathbb{R}\}$

88. Which one of the following is the linear transformation  $T : \mathbb{R}^3 \rightarrow \mathbb{R}^2$  determined by the

matrix  $\begin{pmatrix} 1 & 2 & 1 \\ 0 & 1 & 1 \\ -1 & 3 & 4 \end{pmatrix}$  with respect to the standard basis  $\{e_1, e_2, e_3\}$  ?

- A)  $T(a, b, c) = (a - c, 2a - b + 3c, a - b - 3c)$   
 B)  $T(a, b, c) = (a - c, 2a + b, a + b + 3c)$   
 C)  $T(a, b, c) = (a - c, 2a + b + 3c, a + b + 4c)$   
 D)  $T(a, b, c) = (a + c, 2a - b - 3c, a + b + 4c)$

89. The eigen values of the matrix  $A = \begin{pmatrix} 2 & 2 & 1 \\ 1 & 3 & 1 \\ 1 & 2 & 2 \end{pmatrix}$  are

- A) 5, 2, 1      B) 0, 0, 0      C) 5, 3, 2      D) 5, 1, 1

90. Which one of the following is the inverse of  $a$ ,  $a \neq -1$  where  $*$  is a binary operation on the set of Real numbers  $\mathbb{R}$ , defined by  $a * b = a + b + ab$  ?

- A)  $\frac{a}{a+1}$       B)  $\frac{1}{a+1}$       C)  $\frac{-a}{a+1}$       D)  $\frac{-a}{2(a+1)}$

91. Let  $R$  be a commutative ring with unity of characteristic 4. Then for all  $a, b \in R$ , which one of the following is the expansion of  $(a + b)^4$  ?

- A)  $a^4 + b^4$       B)  $a^4 + 2a^2b^2 + b^4$   
 C)  $a^4 + 4a^2b^2 + b^4$       D)  $a^4 - 2a^2b^2 + b^4$

92. Which one of the following is not a subgroup of the cyclic group  $Z_8$  ?

- A)  $\{0, 2, 4, 6\}$       B)  $\{0, 1, 3, 4, 6\}$       C)  $\{0, 2, 3, 4, 6\}$       D)  $\{0, 4\}$

93. Which one of the following is same as the permutation  $\begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 \\ 8 & 2 & 6 & 3 & 7 & 4 & 5 & 1 \end{pmatrix}$  ?

- A) (1 8)(3 6 4)(5 7)      B) (1 2 8)(3 6 4)(5 7)  
 C) (1 8)(2 3 6 4)(5 7)      D) (1 8)(3 6)(4 5 7)



94. In a non-abelian group  $G$ , the element  $b$  has order 108. Which one of the following is the order of  $b^{42}$  ?  
 A) 9                                      B) 18                                      C) 54                                      D) 27
95. Let  $G$  be a group such that  $a^2 = e$  for each  $a \in G$ , where  $e$  is the identity element of  $G$ . Which one of the following is true ?  
 A)  $G$  is finite                                      B)  $G$  is cyclic  
 C)  $G$  is abelian                                      D) None of the above
96. If  $\{a_n\}$  is a sequence of real numbers satisfying  $(a_{n+1})^2 = 2a_n - 1$ , then which one of the following is true ?  
 A)  $\lim_{n \rightarrow \infty} a_n = 1$                                       B)  $\lim_{n \rightarrow \infty} a_n$  doesn't exist  
 C)  $\lim_{n \rightarrow \infty} a_n = 2$                                       D)  $\lim_{n \rightarrow \infty} a_n = -2$
97. Which one of the following is true for the function  $f(x) = \begin{cases} \frac{\sin 2x}{x}, & \text{for } x \neq 0 \\ 1 & \text{for } x = 0 \end{cases}$  ?  
 A) Continuous only at  $x < 0$                                       B) Continuous only at  $x > 0$   
 C) Continuous only at  $x = 0$                                       D) Continuous for all  $x$  except 0
98. Which one of the following statements is true for the function  $f(z) = y$  ?  
 A) Satisfy Cauchy-Reimann equations                                      B) Not analytic at any point  
 C) Not a harmonic function                                      D) An entire function
99. If  $f(z) = u + iv$  is an analytic function with non-zero derivative then the angle between the family of curves  $u(x, y) = C_1$  and  $v(x, y) = C_2$  where  $C_1$  and  $C_2$  are real numbers is  
 A)  $180^\circ$                                       B)  $45^\circ$                                       C)  $-90^\circ$                                       D)  $90^\circ$
100. Which one of the following is the residue of  $\frac{1}{z - \sin z}$  at its pole ?  
 A)  $\frac{3}{5}$                                       B)  $\frac{-3}{5}$                                       C)  $\frac{3}{10}$                                       D)  $\frac{-3}{10}$



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Space for Rough Work



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Space for Rough Work