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FOR ODISHA B.ED EXAM PREPARATION

Odisha B.Ed 2023 Question Paper · Science (Set C)

EXAM	YEAR	TYPE	SUBJECT
Odisha B.Ed	2023	Question Paper	Science (Set C)

DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE ASKED TO DO SO

TEST BOOKLET

Sl. No. 05697

STREAM SCIENCE

2023

SET CODE C

B.Ed. ADMISSION TEST-2023

Time Allowed : 2 Hours

Maximum Marks : 100

: INSTRUCTIONS TO CANDIDATES :

1. **IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS TEST BOOKLET CONTAINS 16 PAGES AND DOES NOT HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET.**

2. You have to enter your **Roll No.** on the Test Booklet in the Box provided alongside. **DO NOT** write anything else on the Test Booklet.

3. The Test Booklet contains **100** questions. Each question comprises four answers. You have to select the correct answer which you want to mark (darken) on the **Answer Sheet (OMR Sheet)**. In any case choose ONLY ONE answer for each question. If more than one answer is darkened, it will be considered as wrong.

4. You have to mark (darken) all your answers only on the **OMR Answer Sheet using BLACK BALL POINT PEN** provided by the State Selection Board. You have to do rough work only in the space provided at the end of the Test Booklet. See instructions in the Answer Sheet.

5. All questions carry equal marks. While one mark will be awarded for each correct answer, each wrong answer will result in negative marking of **0.25** mark.

6. Before you proceed to mark (darken) the answers in the **OMR Answer Sheet** to the questions in the Test Booklet, you have to fill in some particulars in the Answer Sheet as per the instructions in your Admit Card.

7. On completion of the examination, you should hand over the **original Answer Sheet (OMR Sheet)** issued to you to the Invigilator before leaving the Examination Hall. You are allowed to take with you the candidate's copy (second copy) of the **OMR Answer Sheet** along with the Test Booklet for your reference.

Candidate's full signature

Invigilator's signature

OD – 2C/12

(Turn over)

Read the passage carefully and answer the questions (Q. Nos. 1 to 4) choosing the correct alternative :

These days our world seems to be in the grip of speed. Everyone is in a great hurry to reach somewhere ; God knows where and why. Out on the roads, fast moving vehicles are driven faster ; pedestrians also appear to be running instead of walking, queue or no queue ; hefty people push their way through the crowd, injuring or hurting women, old people or even small children. Doctors, lawyers, and even shopkeepers are in such a hurry that they have no time to listen to anyone patiently. People have no time even to have their food peacefully at home and so 'superfast' food joints have sprung up. No surprise then that so many suffer from hypertension or heart diseases. Even nature seems to have joined this race. Years, months, weeks and days seem simply to fly away as if to take mankind faster to the new Century promising a brighter and happier era.

1. Who don't care for others while walking through the crowd ?
   (A) Small children
   (B) Old men
   (C) Young women
   (D) Hefty people

2. How do pedestrians look like on the road ?
   (A) Walking
   (B) Jogging
   (C) Running
   (D) Gliding

3. Why have 'superfast' foods become popular ?
   (A) People have no time to have their food peacefully at home
   (B) People have no time to cook food
   (C) People don't want to cook food
   (D) People don't like food cooked at home

4. What, according to the author, does the new Century seem to promise ?
   (A) A life of comfort
   (B) An era of hypertension or heart diseases
   (C) A brighter and happier time
   (D) Long and noble life

Answer the questions (Q. Nos. 5 to 10) choosing the correct alternative :

5. The word which means the same as peaceful is :
   (A) Noisy
   (B) Wild
   (C) Restless
   (D) Calm

6. The word opposite in meaning to 'Bold' is :

(A) Brave

(B) Daring

(C) Timid

(D) Fatal

7. One who cannot read and write is :

(A) Illegible

(B) Illiterate

(C) Illegal

(D) Illicit

8. One should do _____ duty sincerely.

Pick out the correct word to complete the sentence :

(A) his

(B) her

(C) their

(D) one's

9. As soon as the siren blew, the firemen dashed towards their vehicle. This sentence can be rewritten using 'No sooner' as :

(A) No sooner the siren blew, the firemen dashed towards their vehicle.

(B) No sooner the siren blew than the firemen dashed towards their vehicle.

(C) No sooner did the siren blow than the firemen dashed towards their vehicle.

(D) No sooner than the siren blew the firemen dashed towards their vehicle.

10. The workers are not to be blamed for the loss. The supervisor is also not to be of blamed for the loss. Combining these two sentences into a single sentence using 'Neither ... nor' we get :

(A) Neither the workers nor the supervisor is blamed for the loss.

(B) Neither the workers nor the supervisor is to be blamed for the loss.

(C) Neither the workers nor the supervisor are to be blamed for the loss.

(D) Neither the workers nor the supervisor are blamed for the loss.

11. "The Origin of Life" book was written by :

(A) Charles Darwin

(B) A. I. Oparin

(C) G. J. Mendel

(D) Louis Pasteur

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12. World Malaria Day is observed on :
    (A) 25th January
    (B) 25th March
    (C) 25th April
    (D) 1st December

13. In terms of event and year of occurrence identify the wrong pair :
    (A) Foundation of C.S.I.R. : 1942
    (B) Demonetisation of Indian Currency notes : 2015
    (C) Implementation of G.S.T. : 2017
    (D) Removal of Article 370 : 2019

14. Name the Union Minister for Science and Technology is :
    (A) Aswini Vaishnav
    (B) Nitin Gadkari
    (C) Jitendra Singh
    (D) Piyush Goel

15. On which day the Constituent Assembly commenced its functioning ?
    (A) 9th December, 1946
    (B) 26th January, 1947
    (C) 15th August, 1947
    (D) 9th December, 1947

16. Which country is not a part of Troika of G-20 Summit to be held in 2023 ?
    (A) Brazil
    (B) Indonesia
    (C) India
    (D) Italy

17. In which of the following cities is NAAC situated ?
    (A) New Delhi
    (B) Bangalore
    (C) Mumbai
    (D) Kolkata

18. Who was associated with laying down minimum levels of learning at elementary stage ?
    (A) Prof. R.H.Dave
    (B) Prof. Yashpal
    (C) Prof. Ved Prakash
    (D) Acharya Ramamurthy

19. Which of the following Commissions recommended for establishment of U.G.C. in India ?
    (A) Indian University Commission (1902)
    (B) Calcutta University Commission (1917)
    (C) University Education Commission (1948-49)
    (D) Mudaliar Commission (1952-53)

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20. The middle stage of education as per N.E.P-2020 covers which age group of students ?
(A) Ages 8 to 10
(B) Ages 9 to 11
(C) Ages 10 to 12
(D) Ages 11 to 14

21. If the sequence of the letters in English Alphabet is reversed, which letter would be the 10^{th} letter after the 5^{th} letter from right ?
(A) M
(B) L
(C) K
(D) N

22. If 'CAT' and 'BOAT' are written as 'XZG' and 'YLZG' respectively in a code language, how is 'EGG' to be written in the same language ?
(A) VSS
(B) URR
(C) VTT
(D) UFF

23. In the following question, one statement is followed by two arguments. Find the correct answer from the given alternatives :
Statement : 'Nudity be shown in Indian Films'.
Arguments : (a) It is being shown all over the world.
(b) It will damage the moral fibre of Indian Society.
(A) Only statement(a) is strong.
(B) Only statement(b) is strong.
(C) Neither argument(a) nor (b) is strong.
(D) Both arguments(a) and (b) are strong.

24. Naga is taller than Puspa, but not as tall as Manu. Rama is taller than Nita, but not as tall as Puspa. Who among them is tallest ?
(A) Manu
(B) Puspa
(C) Naga
(D) Rama

25. Indra is 7^{th} from the left and Jaya is 5^{th} from the right. When they interchange their positions, Jaya becomes 19^{th} from the right. What is Indra's position from left ?
(A) 21^{st}
(B) 19^{th}
(C) 20^{th}
(D) 23^{rd}

26. If 'BAT' is coded as 283, CAT is coded as 383, ARE is coded as 801, then the code for 'BETTER' is :
(A) 213310
(B) 213301
(C) 012334
(D) 123301

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27. If selling price is doubled, the profit triples. Find the profit percent.

(A) 66.6

(B) 100

(C) 105.3

(D) 120

28. If the 7^{th} day of a month is 3 days earlier than Friday, what day will it be on the 19^{th} day of the month ?

(A) Sunday

(B) Monday

(C) Wednesday

(D) Friday

29. In how many ways you can post 3 letters in 4 letter boxes ?

(A) 68

(B) 64

(C) 81

(D) 12

30. What least number must be added to 1056 so that the sum is completely divisible by 2, 3 and 5 ?

(A) 24

(B) 18

(C) 48

(D) 56

31. Development of which of the following abilities in human beings is facilitated by brainstorming ?

(A) Positive thinking

(B) Divergent thinking

(C) Convergent thinking

(D) Active thinking

32. An explanation involves giving :

(A) Antecedents to a subsequent

(B) Consequences to an antecedent

(C) Antecedents to a consequence

(D) Consequences to a subsequent

33. A student is solving a problem in Mathematics. What is he/she contributing to ?

(A) Affective learning

(B) Cognitive learning

(C) Conative learning

(D) Psychomotor learning

34. Which of the following is not a characteristic of teaching profession ?

(A) Social Service

(B) Skills

(C) Authority

(D) Organization

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35. Which strategy is best applicable for teaching 'skill of asking questions to students' ?

(A) Personalized system of instruction

(B) Programmed instruction

(C) Simulation

(D) Microteaching

36. Student-centric classroom is meant for :

(A) Addressing individual differences

(B) Engaging the students of the entire class

(C) Helping students to recall their previous knowledge

(D) Reducing the teacher-oriented lectures

37. During presentation in a classroom, a teacher gives a lot of positive and negative examples. This is related to which level of learning ?

(A) Reflective level

(B) Understanding level

(C) Memory level

(D) Autonomous development level

38. Suppose you are teaching a topic in the class and a student asks a question unrelated to the topic. What will you do ?

(A) You will encourage him to ask such questions to develop fearlessness in the student.

(B) You will disallow him to ask such questions so as to save time for discussion on topic related questions.

(C) You will consider it as a case of indiscipline and report it to his/ her parents.

(D) You will answer the question after the class.

39. 'Spare the rod and spoil the child' gives the message that :

(A) Undesirable behaviour should be punished.

(B) The teacher is friendly to the students.

(C) It is an activity-centred class.

(D) There is more freedom and flexibility in classroom teaching.

40. C.I.E.T. stands for :

(A) Centre for Integrated Education and Technology

(B) Central Institute for Engineering and Technology

(C) Central Institute of Educational Technology

(D) Centre for Integrated Evaluation Techniques

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41. The quantitative definition of force can be obtained from which of the Newton's laws of motion ?

(A) 1st law

(B) 2nd law

(C) 3rd law

(D) None of the laws

42. A body of mass 5 kg moving with velocity 2 m/s comes to rest within a distance of 6 m. The work done during the process is :

(A) 10 J

(B) 15 J

(C) 20 erg

(D) 30 erg

43. A venturi meter works on the principle of :

(A) Newton's law

(B) Joule's law

(C) Pascal's law

(D) Bernoulli's law

44. In a dynamo the transformation of energy is :

(A) From mechanical to electrical

(B) From electrical to mechanical

(C) From chemical to electrical

(D) From electrical to thermal

45. Ohm's law is applicable to a :

(A) Semiconductor

(B) Superconductor

(C) Metallic Conductor

(D) Junction diode

46. A body of mass 2 kg and electrical charge 5C is moved through a potential difference of 6 V. The energy gained by the body is :

(A) 60 J

(B) 30 J

(C) 300 erg

(D) 600 erg

47. Lenz's law of electromagnetic induction is consistent with the conservation of :

(A) Mass

(B) Charge

(C) Momentum

(D) Energy

48. The velocity of sound in air at STP is nearly :

(A) 100 m/s

(B) 300 m/s

(C) 500 m/s

(D) 800 m/s

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49. In Young's double slit experiment, if the separation between the slits is doubled (within the wavelength range), then the fringe width is :

(A) Unchanged

(B) Halved

(C) Doubled

(D) None of the above

50. If the temperature of a black body is doubled, then its radiant emittance becomes :

(A) Same as original value

(B) Twice of the original value

(C) Four times the original value

(D) Sixteen times the original value

51. If Mg atom having atomic no. 12 has an isotope of mass no. 26, then the no. of proton, neutron and electron respectively are :

(A) 12, 12, 14

(B) 12, 14, 12

(C) 14, 12, 12

(D) 12, 12, 12

52. Iso-electronic species are :

(A) CO, CN^-, NO^+, C_2^{2-}

(B) CO^-, CN, NO, C_2^-

(C) CO^+, CO^+, NO^+, C_2

(D) CO, CN, NO, C_2

53. How many σ and π bonds are present in CaC_2 ?

(A) 2σ, no π

(B) 3σ, 2π

(C) 2σ, 2π

(D) 3σ, 1π

54. Which of the following has maximum no. of unpaired electrons ?

(A) Mg^{2+}

(B) Ti^{3+}

(C) V^{3+}

(D) Fe^{2+}

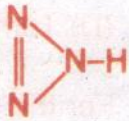
55. Which one of the following oxides is neutral ?

(A) CO

(B) SnO_2

(C) ZnO

(D) SiO_2

56. N_3H is represented as  :

Nitrogen attached with double bonds has oxidation number :

(A) 0

(B) + 3

(C) – 2

(D) – 3

57. $2MNO_4^- + aH^+ + bH_2O_2 \rightarrow 2Mn^{2+} + cH_2O + dO_2$

What are the values of a, b, c, and d respectively ?

(A) 3, 5, 4, 5

(B) 6, 5, 8, 5

(C) 3, 1, 4, 1

(D) 1, 5, 4, 5

58. Reduction of thiosulfate with iodine gives :

(A) Sulfate ion

(B) Sulfite ion

(C) Tetrathionate ion

(D) Sulfide ion

59. The indicator used in iodometric titration is :

(A) Phenolphthalein

(B) Methyl orange

(C) Starch

(D) Litmus

60. For the equation $NO_3^- + 4H^+ + e \rightarrow 2H_2O + NO$. The no. of electrons in its balanced form would be :

(A) 5

(B) 4

(C) 3

(D) 2

61. Which of the following is responsible for modifying and packaging of proteins and lipids ?

(A) Mitochondria

(B) Golgi Complex

(C) Endoplasmic Reticulum

(D) Peroxisome

62. Which of the following Vitamins is not obtained from plants ?

(A) Thiamine

(B) Pyridoxin

(C) Cyanocobalamine

(D Riboflavin

63. In Pteridophytes development of sporophyte from gametophytic tissue without involving gametic fusion is known as :

(A) Apospory

(B) Parthenocarpy

(C) Heterospory

(D) Apogamy

64. The fungus commonly known as Baker's Yeast is :

(A) Saccharomyces octosporus

(B) Saccharomyces cerevisial

(C) Saccharomyces luduwigii

(D) All of the above

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65. The plant that commonly known as horse tail is :
(A) Equisetum
(B) Marsilea
(C) Selaginella
(D) Pteris

66. Which of the following is not an inexhaustible resource ?
(A) Sunlight
(B) Wind
(C) Tidal energy
(D) Coal

67. Normally the endosperm in angiosperm is :
(A) Diploid
(B) Haploid
(C) Triploid
(D) Hexaploid

68. Which of the following is an essential fatty acid ?
(A) Palmitic Acid
(B) Linoleic Acid
(C) Acetic Acid
(D) Citric Acid

69. The type of energy obtained from hot springs is :
(A) Geothermal energy
(B) Solar energy
(C) Tidal energy
(D) Hydro energy

70. Which of the following is not a viral disease ?
(A) Measles
(B) Hepatitis
(C) Rubella
(D) Leprosy

71. Zooplanktons are :
(A) Producers
(B) Primary Consumers
(C) Secondary Consumers
(D) Decomposers

72. Which of the following is a non – symbiotic nitrogen fixing aerobic bacteria ?
(A) Clostridium
(B) Frankia
(C) Azotobacter
(D) Rhizobium

73. Minamata disease was caused in Japan due to the poisoning of :
(A) Arsenic
(B) Nickel
(C) Lead
(D) Mercury

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74. How many teeth grow only once in the life of a human being ?

(A) 8

(B) 12

(C) 20

(D) 32

75. Which is not a part of alimentary canal ?

(A) Jejunum

(B) Ilium

(C) Gizzard

(D) Crop

76. Deficiency of which hormone causes diuresis ?

(A) Oxytocin

(B) Relaxin

(C) Renin

(D) Vasopressin

77. The clinical term for severe frequent cramping during menstruation is :

(A) Amenorrhea

(B) Menorrhagia

(C) Oligomenorrhea

(D) Dysmenorrhea

78. The coating of fine hairs on the body of human foetus is called :

(A) Lanugo

(B) Fur

(C) Scutes

(D) Vernix

79. During inspiration in mammals, the diaphragm :

(A) Expands

(B) Contracts

(C) Relaxes

(D) Shows no change

80. The statement "Eating on the same table" is true for :

(A) Amensalism

(B) Mutualism

(C) Parasitism

(D) Commensalism

81. A rational number $\frac{p}{q}$ $(q \neq 0)$ can be expressed as a terminating decimal, if the prime factorization of q is of the form :

(A) $2^m 3^n$ (m and n are non-negative integers)

(B) $2^m 5^n$ (m and n are non-negative integers)

(C) $3^m 5^n$ (m and n are non-negative integers)

(D) $5^m 7^n$ (m and n are non-negative integers)

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82. The difference between the two numbers is 1365. On dividing the larger number by the smaller, we get 6 as quotient and 15 as the remainder. Which one of the following is the smaller number ?

(A) 360

(B) 295

(C) 270

(D) 240

83. What is the number of proper subsets of the set $P \cup Q$, where $P = \{1, 2, 5, 7\}$ and $Q = \{2, 4, 6\}$?

(A) 31

(B) 63

(C) 64

(D) 127

84. If the set P contains 5 elements and the set Q contains 6 elements, then what is the number of one-one and onto functions from P to Q ?

(A) 720

(B) 120

(C) 30

(D) 0

85. How many equivalence relations can be defined on the set $S = \{1, 2, 3\}$?

(A) 3

(B) 5

(C) 7

(D) 8

86. Suresh, Dinesh and Ramesh became partners in a business by investing money in the ratio 3 : 6 : 8. If their investments are increased by 5%, 15% and 20% respectively, then what will be the ratio of their profits in one year ?

(A) 7 : 46 : 64

(B) 19 : 46 : 64

(C) 21 : 46 : 64

(D) 35 : 46 : 64

87. In a bag, there are coins of 5 ps, 10 ps and 25 ps in the ratio 3 : 2 : 1. If all the coins in the bag amounts to Rs. 60.00, then how many 5 ps coins are there ?

(A) 100

(B) 200

(C) 300

(D) 400

88. If $\log_x y = 100$ and $\log_2 x = 10$, then what is the value of y ?

(A) 2

(B) 2^{10}

(C) 2^{100}

(D) 2^{1000}

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89. What is the value of $(256)^{0.16} \times (256)^{0.09}$?

(A) 256.25

(B) 64

(C) 16

(D) 4

90. If $\tan\theta = \frac{3}{4}$ for some θ $(0 < \theta < 90^\circ)$, then what is the value of $\sin\theta$?

(A) $\frac{1}{5}$

(B) $\frac{2}{5}$

(C) $\frac{3}{5}$

(D) $\frac{4}{5}$

91. If $\log_3(x^4 - x^3) - \log_3(x-1) = 3$, then what is the value of x ?

(A) 9

(B) 6

(C) 3

(D) 1

92. What is the value of the expression: $\sin^2(1^\circ) + \sin^2(11^\circ) + \sin^2(21^\circ) + \sin^2(31^\circ) + \sin^2(41^\circ) + \sin^2(45^\circ) + \sin^2(49^\circ) + \sin^2(59^\circ) + \sin^2(69^\circ) + \sin^2(79^\circ) + \sin^2(89^\circ)$?

(A) 4

(B) $4\frac{1}{2}$

(C) 5

(D) $5\frac{1}{2}$

93. If S is the set of all distinct numbers of the form $\frac{p}{q}$, where $p, q \in \{1, 2, 3, 4, 5, 6\}$, then what is the total number of elements in S ?

(A) 21

(B) 23

(C) 32

(D) 36

94. The angle of elevation of a ladder leaning against a wall is 60°. If the foot of the ladder is 4.6 m away from the wall, then what is the length / height of the ladder ?

(A) 2.3 m

(B) 4.7 m

(C) 7.8 m

(D) 9.2 m

95. If one of the roots of the equation $3x^2 + px + 3 = 0$ $(p > 0)$ is the square of the other root, then what is the value of p ?

(A) 3

(B) 1

(C) $\frac{2}{3}$

(D) $\frac{1}{3}$

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96. What is the remainder when the polynomial $x^{200} + 1$ is divided by $x^2 + 1$?

(A) $x^2 - 1$

(B) $2x + 1$

(C) 2

(D) -1

97. If the system of linear equations $5x + my = 10$ and $4x + ny = 8$ (m, n are positive integers) have infinitely many solutions, then the minimum possible value of $(m + n)$ is :

(A) 11

(B) 9

(C) 7

(D) 5

98. A wire is bent to form a square of side 22 cm. If the wire is rebent to form a circle, then its radius will be ? $\left(\text{Use } \pi = \frac{22}{7}\right)$

(A) 22 cm.

(B) 14 cm.

(C) 11 cm.

(D) 7 cm.

99. Which one of the following is an obtuse angle ?

(A) $\frac{11}{21}$ of a right angle

(B) $\frac{8}{20}$ of a complete rotation

(C) $\frac{11}{21}$ of a complete rotation

(D) $\frac{8}{20}$ of a right angle

100. PQR is a right angled triangle right angled at Q with PQ = 6 cm. and QR = 8 cm. What is the radius of the circle with center at O inscribed inside the triangle PQR ?

(A) 4 cm.

(B) 3 cm.

(C) 2 cm.

(D) 1 cm.

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