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QUESTION BOOKLET
Entrance test for B.Ed. Admission /
B.Ed. Science Stream 2016
General Instructions

Question Booklet No:

Roll Number:

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QP Code:

INSTRUCTIONS FOR MARKING ANSWERS

- This Computerized OMR Answer Sheet is to be filled in by BLACK INK / BLUE BALL – POINT PEN Only.
ଏହି କମ୍ପ୍ୟୁଟରୀକୃତ OMR ର ଉତ୍ତର ପତ୍ରିକା ପୂରଣ କରିବାପାଇଁ କଳା / ନୀଳ କାଳି ଥିବା ବଲପଏଣ୍ଟ ପେନ ବ୍ୟବହାର କରନ୍ତୁ।
- Since answers and other particulars are to be filled in with Black / Blue Ink Ball-Point Pen, there is no provision for change of answers by eraser / blade / white fluid etc. Therefore, all particulars including answers are to be filled in VERY CAREFULLY. Kindly note that the OMR Answer Sheet will not be replaced under any circumstances.
ଯେହେତୁ ଉତ୍ତର ଏବଂ ଅନ୍ୟ ବିବରଣୀ କଳା / ନୀଳ କାଳି ଥିବା ବଲପଏଣ୍ଟ ପେନ ବ୍ୟବହାର କରି ପୂରଣ କରାଯିବ, ତେଣୁ ରବର / ବ୍ଲେଡ / ଧଳାଫ୍ଲୁଇଡ୍ ଇତ୍ୟାଦି ଦ୍ୱାରା ଉତ୍ତର ଉପରେ କୌଣସି ପରିବର୍ତ୍ତନ କରିବାକୁ ସୁଯୋଗ ନାହିଁ। ତେଣୁ ଉତ୍ତରକୁ ଓ ସମସ୍ତ ବିବରଣୀ ଅତ୍ୟନ୍ତ ଧ୍ୟାନ ସହକାରେ ପୂରଣ କରନ୍ତୁ। ଦୟାକରି ଏହାକୁ ଧ୍ୟାନ ଦିଅନ୍ତୁ, ଯେକୌଣସି ପରିସ୍ଥିତିରେ OMR ଉତ୍ତରପତ୍ରିକା ବଦଳ କରାଯିବ ନାହିଁ।
- Darken only one circle for Answer of each question as shown in the example given below. Marking should be dark and the circle is to be filled in completely as shown in the example.
ନିମ୍ନ ଉଦାହରଣରେ ଦର୍ଶାଯାଇଥିବା ଭଳି ପ୍ରତ୍ୟେକ ପ୍ରଶ୍ନର ଉତ୍ତର ପାଇଁ କେବଳ ଗୋଟିଏ ହିଁ ଗୋଲ କଳା କରନ୍ତୁ। ଉଦାହରଣରେ ଦର୍ଶାଯାଇଥିବା ଭଳି ପୂରା ଗୋଲରେ ଗାଢ଼ କଳା / ନୀଳ ରଙ୍ଗ କରି ଚିହ୍ନ କରାଯିବା ଉଚିତ।
- There is only one correct response for each question. More than one response to a single question shall be treated as negative response. For each negative marking, 0.25 marks shall be deducted from your total marks.
ପ୍ରତ୍ୟେକ ପ୍ରଶ୍ନ ପାଇଁ ଗୋଟିଏ ନିର୍ଦ୍ଦିଷ୍ଟ ଉତ୍ତର ଅଛି। ଯଦି ଗୋଟିଏ ନିର୍ଦ୍ଦିଷ୍ଟ ପ୍ରଶ୍ନର ଉତ୍ତର ପାଇଁ ଏକାଧିକ ଗୋଲକୁ ରଙ୍ଗ କରାଯାଇଥାଏ, ତେବେ ତାହା ଭୁଲ ଉତ୍ତର ଭାବେ ବିବେଚନା କରାଯିବ। ପ୍ରତ୍ୟେକ ଭୁଲ ଉତ୍ତର ପାଇଁ ୦.୨୫ ମାର୍କ କଟାଯିବ।
- Mark your answer only in the space provided. Please do not mark any other thing on the OMR answer sheet.
କେବଳ ଦିଆଯାଇଥିବା ସ୍ଥାନରେ ହିଁ ନିଜର ଉତ୍ତର ଚିହ୍ନିତ କରନ୍ତୁ। ଏହି ପୁସ୍ତିକାର କୌଣସି ସ୍ଥାନରେ ଅନାବଶ୍ୟକ ଚିହ୍ନ ଦିଆନ୍ତୁ ନାହିଁ।
- Rough work should not be done on this OMR Answer sheet. Use rough sheets provided at the end of the question booklet, for rough work.
OMR ଉତ୍ତର ପତ୍ରିକାରେ ରଫ କାମ କରନ୍ତୁ ନାହିଁ। ରଫ କାମ ପାଇଁ ପ୍ରଶ୍ନ ପୁସ୍ତିକାର ପଛପଟରେ ଥିବା ରଫ ସ୍ଥାନ / କାଗଜ ବ୍ୟବହାର କରନ୍ତୁ।
- Do not fold OMR Answer Sheet. Carbon copy of OMR answer sheet can be taken away by the candidate.
OMR ଉତ୍ତର ଭାଙ୍ଗ କରନ୍ତୁ ନାହିଁ। ଉତ୍ତର ପତ୍ରିକାର କାର୍ବନ କପି ପ୍ରାର୍ଥୀ ନେବା ଆବଶ୍ୟକ।

Please read the following instructions carefully:

1. Write your Roll Number, Question Booklet Number and Question Booklet Series on the OMR Answer Sheet carefully and sign at the appropriate place. Please note that in absence of the correct Roll number, Question Booklet Number, Question Booklet Series and Signature on the OMR Answer Sheet, your OMR Answer Sheet will be treated as invalid and will not be evaluated.

2. Strictly follow the instructions given by the Centre Superintendent / Centre Observer/ Room Invigilator and instructions given on the Question Booklet.

Please see the last page for complete instructions.

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Section – I

1. Select the INCORRECT statement.
 - (A) The form must be filled out in capital letters.
 - (B) The defendant tried to get his point along to the judge but she wouldn't listen.
 - (C) No amount of support will see him through these difficult times.
 - (D) His mother always refills the water jug, when she sees it empty.
 2. Select the correct interminable arguments.
 - (A) transient
 - (B) ephemeral
 - (C) intercepting
 - (D) endless
 3. Select the correct synonym for the underlined word.

Very often employees feel that their colleagu

surreptitious manner.

 - (A) disdainful
 - (B) comradely
 - (C) clandestine
 - (D) rational
 4. Select the correct synonym for the underlined word.

Several pristine the axe.

 - (A) stained
 - (B) unspoilt
 - (C) appropriate
 - (D) decaying
 5. Select the correct synonym for the underlined word.

"The world," said the old man, "requires a _____ survival".

 - (A) coordinated
 - (B) divergent
 - (C) upended
 - (D) stupendous
- Directions for questions 6 to 10:
Read the passage and answer the questions that follow:
- showrooms, some
- researchers noted not only whether t
- timid or confident.
- and psychology." The best way to get an in-
- the hiring of cul
- practice for many large corporations and some of th leading advertising agencies.

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- Companies with radically different approaches to consumer attitudes towards a wide range of personal care items.
- details of people watching an expensive car, eat gourmet ice cream, or wear clothes with a particular detergent.
6. Recent studies point out that consumer research is best done by
- Marketing analysts
 - Watching people
 - Giving out questionnaires
 - Radical companies
7. According to the passage, the term, 'cultural anthropologists' in the passage refers to
- the study of the structure of man as a rational animal
 - one who studies mankind, its societies and customs
 - a man who deals with the study of the origin of mankind
 - one who organises cultural shows to study man's activities
8. Most companies do not let out information on
- the expenditure incurred on people watching
 - the hidden motives of the customer
 - the money spent on personal care items
 - the consumer's attitudes on products and services
9. The Toyota Corporation market researchers do all of the following EXCEPT:
- Note the way customers kicked the tyres
 - Note the costumes worn by the potential customers
 - Note how the customers drive the cars
 - Note the expressions of customers to know whether they are timid or confident
10. Companies, have come to rely frequently on which of the following?
- Psychological research
 - Human resource development
 - Technological research and development
 - Observational research

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11. review In-
(September 2003)?
(A) Sarkar Committee
(B) Damodaran Committee
(C) Yugandhar Committee
(D) Prof. N R Madhava Menon Committee
12. IETE is working in which one of the following areas?
(A) Training for teachers
(B) Advancement of Science and Technology of
Electronics, Telecommunication & IT
(C) Monitor educational policies
(D) Promote education for entrepreneurship
13. Which of the following is one of the objectives of
UGC?
(A) To review In- service training of the IAS officers
(B) To provide technical assistance to schools and
universities
(C) To coordinate, determine and maintain standards
of university education
(D) To provide counselling service for university
graduates
14. by the Government?
(A) Clean premises in the school
(B) Remove corruption from school
(C) Water, Sanitation and Hygiene in Schools
(D) Increase the standard of Public Schools
15. setting up residential schools at upper p
and minority communities.
(A) Mid-Day meal
(B) Kasturba Gandhi Balika Vidyalaya
(C) Rashtriya Shiksha Abhiyan
(D) National Merit-cum-Means Scholarship Scheme
16. What is the process called through which solid is
transformed into gas?
(A) Condensation
(B) Vaporization
(C) Fusion
(D) Sublimation
17. Which of the following types of waves are used in
Night Vision Apparatus?
(A) Infra-red waves
(B) Radio waves
(C) Micro waves
(D) LASER waves
18. What is the other name of Rajya Sabha?
(A) Cabinet
(B) Council of States
(C) Standing committee
(D) Council of Ministers

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19. Ordinary soaps DO NOT form lather in hard water because
(A) Formation of precipitate occurs with Ca^{2+} and Mg^{2+} ions
(B) Decomposition of soap occurs
(C) Sedimentation of dissolved salts occurs
(D) Formation of carbonated Na^{2+} and Mg^{2+} ions occurs
20. the Universal Declaration of Human Rights?
(A) 10th December 1948
(B) 17th October 1948
(C) 15th August 1946
(D) 9th December 1946
21. language?
(A) ABSTL
(B) BSTEOL
(C) BSLTLY
(D) LYABST
22. Vishwas is the father-in-husband of Sushma. Vibha is
What is the relation of Vibha with Vishwas?
(A) Husband
(B) Wife
(C) Sister-in-law
(D) Daughter
23. Aditi is running around a circular track. She s running when she is facing North-run three and a half rounds?
(A) North-East
(B) North
(C) South-West
(D) South-East
24. will be the relation of Radha's husband with Sunil?
(A) Father
(B) Grandfather
(C) Brother
(D) Uncle
25. the time that the clock is showing?
(A) 2:30
(B) 6:30
(C) 4:00
(D) 5:45
26. cost?
(A) 7
(B) 8
(C) 9
(D) 10

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27. I am a geometrical figure. I have no corners and no edges. I am three dimensional. What am I?
- (A) Pyramid
(B) Cube
(C) Sphere
(D) Prism
28. given back. Farid has
How many bottles of soda can he drink at most?
- (A) 21
(B) 23
(C) 24
(D) 25
29. middle person changes to fourteenth fr
seen from front?
- (A) 13th
(B) 18th
(C) 9th
(D) 27th
30. language?
- (A) MORNGNI
(B) ROMNGNI
(C) GNINMOR
(D) GNINROM
31. Name the dimension of equality and social justice for which the school system will have to strive for
- (A) Social disturbance
(B) Moral difference
(C) Economic disparity
(D) Psychological disparity
32. The maximum goal of education is
- (A) Diffusion of knowledge, values, attitudes and norms of relationships required for playing adult role
(B) Upbringing of the progeny
(C) Management of the organization
(D) Working for the nation
33. In which of the following ac ideas?
- (A) Demonstration
(B) Brain storming
(C) Dramatization
(D) Case studies
34. In which of the following methods, t the course of teaching?
- (A) Scientific method
(B) Lecture method
(C) Playway method
(D) Socratic method

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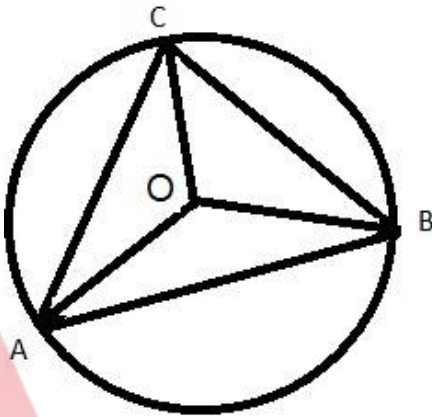
35. Which of the following is advised by the teacher in whose class there are a few gifted students?
- (A) The students are treated equally along with the class
- (B) The students will be asked to be in the higher classes
- (C) Special classes with enriched programmes conducted
- (D) Whenever the students want, they will be taught
36. Which of the following resolutions were passed at Wardha Education conference 1937?
- (A) Free and Compulsory Education
- (B) English medium in selected schools
- (C) Develop only social skills
- (D) Increase funds to all rural schools
37. Which of the following is one of the purposes of performance appraisal?
- (A) To provide feedback
- (B) To identify the background
- (C) To provide more marks
- (D) To emphasize the negative
38. Effectiveness of teaching is more when there is the use of
- (A) Words
- (B) Projects or excursions
- (C) Coloured slides
- (D) Working models
39. Integral Education is the true aim of education, according to
- (A) Sri Vivekananda
- (B) Sri Aurobindo
- (C) Sri Rabindranath Tagore
- (D) Mrs. Annie Besant
40. The first condition for increasing emotional integration in the country is the development of
- (A) A regional Education Policy
- (B) An All India language
- (C) One's own cultural understanding
- (D) Solidarity with one's community
41. What does UGC stand for?
- (A) University Grants Commission
- (B) Universal Grants Commission
- (C) University Governing Council
- (D) University Governance Commission
42. Which of the following DOES NOT belong to the group of merits of Community as an Agency of education?
- (A) Community education is meaningful
- (B) It imparts theoretical experiences of objects
- (C) It emphasizes the principle of utility
- (D) It lays emphasis on activity

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43. by trouble with reading alth
- reads.
- (A) Alexia
- (B) Schizoaffective disorder
- (C) Dyslexia
- (D) Dissociative identity disorder
44. parents, and students are equally
- would accept which of the following?
- (A) Develop classroom rules I am unwilling to enforce
- (B) Send the student out from the classroom for the misbehaviour
- (C) Ignore when there is a small disturbance at the backside of the classroom
- (D) Supply students and parents with evaluation of progress
45. Identify the disadvantage of the Lecture method from the following.
- (A) Direct experience
- (B) Facts presentation in short time
- (C) Results in dictation
- (D) Emphasis on independent reading
46. Setting goals and deciding strategies of teaching occurs in which phase of teaching?
- (A) Pre active phase
- (B) Post active phase
- (C) Interactive phase
- (D) Exit Phase
47. Which of the following is a typical behaviour exhibited by an adolescent?
- (A) Religious
- (B) Rebellious
- (C) Obedient
- (D) Submissive
48. 'Aimlessness' is one of the p
- to counter this problem?
- (A) Development of private schools
- (B) Development of attitudes
- (C) Development of democratic citizens
- (D) Development of communication skills
49. D
- beings are related to
- (A) Differences in environment
- (B) Differences in heredity
- (C) Differences in assimilation and accommodation
- (D) Interaction between heredity and environment
50. Identify fr
- imparting education.
- (A) Informal agencies of education
- (B) Non-formal agencies of education
- (C) Passive agencies of education
- (D) Formal Agencies of Education

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Section - II

51. divided by 6?
- (A) 2
- (B) 3
- (C) 4
- (D) 5
52. Physics and 8 passed in both. How many failed in both if the class has 45 students?
- (A) 3
- (B) 6
- (C) 8
- (D) 10
53. What are the roots of the equation $x^2 - 7x + 12 = 0$?
- (A) (4, 3)
- (B) (-3, -4)
- (C) (1, 2)
- (D) (5, 7)
54. In the given figure, O is the centre of the circle. Angle $BCO = 35$ degrees. Find the measure of the angle BAC in degrees.
- 
- (A) 45
- (B) 50
- (C) 55
- (D) 60
55. Find the value of $a \times a^{(3/2)} \times a^{(2)} \times a^{(5/2)} \times \dots \times a^{(5)}$
- (A) a^{22}
- (B) a^{27}
- (C) a^{29}
- (D) a^{31}
56. Seeta and Rashmi have chocolates in the
- chocolates did Seeta have initially?
- (A) 9
- (B) 12
- (C) 15
- (D) 18

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57. If $2 (\log x)^2 + 5 (\log x) -$
these can be the v
without base, has to be assumed that it is of base 10].
(A) 10
(B) 100
(C) 1000
(D) 10000
58. If $\sin \theta = 3/5$, then find the value of $\tan 2\theta$
(A) $24/25$
(B) $12/13$
(C) $24/7$
(D) $7/24$
59. What is the smallest angle of that quadrilateral?
(A) 40 degrees
(B) 60 degrees
(C) 80 degrees
(D) 100 degrees
60. What is the value of $(5\sqrt{5} \times 4(3/2))/(5 \times 16)$?
(A) $\sqrt{5/4}$
(B) $5\sqrt{4}$
(C) $4\sqrt{5}$
(D) $\sqrt{4/5}$
61. The diagonal of a square is $5\sqrt{2}$ cm. What is the perimeter of the square?
(A) 10 cm
(B) 16 cm
(C) 20 cm
(D) 24 cm
62. read Economic times
30 people read both Times
residents are there in that city?
(A) 570
(B) 590
(C) 710
(D) 800
63. What is the sum of all the factors of 48?
(A) 76
(B) 124
(C) 148
(D) 196
64. Given that $f(x) = 3x^2 + 2x + 5$. For how many values of x , $f(x)$ lies between 0 and 50, both inclusive? [given that x is a natural number].
(A) 2
(B) 3
(C) 4
(D) 5
65. Let T be a set such that
 $T = \{x \mid (2x+6) = x^2 + 6x + 9, x > 0\}$.
Which of these could be true about set T?
(A) T is an empty set
(B) Set T has only one element
(C) $x = -2$ is a member of T
(D) Set T has infinitely many elements

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66. If $\log 2 = 0.3010$ and $\log 3 = 0.4771$, then find the value of $\log 12$.
- (A) 1.1234
(B) 1.0791
(C) 1.0032
(D) 1.8896
67. Set $A = \{1, 2, 4, 6, 8\}$, Set $B = \{0, 1, 4, 8, 9\}$, Set $C = \{4, 6, 9, 10\}$. Find $(A \cup B) \cap C$.
- (A) $\{1, 4, 9\}$
(B) $\{2, 8, 9\}$
(C) $\{4, 6, 9\}$
(D) $\{6, 8, 9\}$
68. The diameter of a circle is 28 cm. What is the length of its circumference?
- (A) 44 cm
(B) 88 cm
(C) 22 cm
(D) 176 cm
69. angle of elevation changed to 5 degree. Find the value of "x".
- (A) 100
(B) 50
(C) $100(\sqrt{3} - 1)$
(D) $100(\sqrt{3} + 1)$
70. Find the total number of factors of 108.
- (A) 10
(B) 11
(C) 12
(D) 13
71. rhombus.
- (A) 168 sq.cm
(B) 336 sq.cm
(C) 424 sq.cm
(D) 526 sq.cm
72. What is the value of $(\cos 10^\circ \times \cos 20^\circ \times \cos 30^\circ \times \dots \times \cos 120^\circ)$?
- (A) 0
(B) 1
(C) $3/4$
(D) $432/664$
73. A two-digit number is 3 more than 7 times the sum of its digits. How many such numbers are there?
- (A) 4
(B) 5
(C) 6
(D) 7
74. If $\sin \theta = (5/13)$ and θ is an acute angle, find the value of $\tan \theta$.
- (A) $5/12$
(B) $12/13$
(C) $12/5$
(D) $13/5$
75. What is the value of $\log a^2 + \log b^2 - 2 \log ab$?
- (A) 0
(B) 1
(C) 2
(D) 3

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76. If one root of a quadratic equation is $3+\sqrt{2}$, then what is the product of the roots?
- (A) 6
(B) 7
(C) 9
(D) 12
77. How many set of ordered pairs (x,y) satisfy these two simultaneous equations?
- $$8x + 3y = 25$$
- $$32x + 12y = 100$$
- (A) Zero
(B) One
(C) Two
(D) Infinity
78. What is the remainder when $(x^3 + 6x^2 - 4x + 2)$ is divided by $(x-3)$?
- (A) 40
(B) 71
(C) 76
(D) 80
79. If $\sin A + \cos A = \sqrt{2}$, then find the value of $\sin 2A$?
- (A) 0
(B) 1
(C) $1/2$
(D) $1/\sqrt{2}$
80. What is the octal number corresponding to 110 in decimal number system?
- (A) 143
(B) 150
(C) 156
(D) 163
81. For the conductors which obey Ohm's law of electricity, voltage-current graph is always a/an
- (A) Circle
(B) Ellipse
(C) Straight line
(D) Parabola
82. Which of the following is a non-decomposition reaction?
- (A) Thermal decomposition
(B) Electrolysis
(C) Photolysis
(D) Addition reaction
83. Light travels fastest through which of the following materials?
- (A) Diamond
(B) Water
(C) Glass
(D) Air
84. A man lifts a box of 10 kg to the roof the man is ($g = 10 \text{ m/s}^2$)
- (A) Equal to 1300 J
(B) Less than 1300 J
(C) Greater than 1300 J
(D) Zero
85. form of compression and rarefactions
- (A) There is no transfer of heat
(B) Boyle's law is obeyed
(C) Bulk modulus of air oscillates
(D) Density remains constant

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86. The ionisation potential of the hydrogen atom is 13.6 eV. Calculate the minimum energy that could just ionise the hydrogen atom.
- (A) $28 \times 10^{-6} \text{ m/s}$
 (B) $2.18 \times 10^{-6} \text{ m/s}$
 (C) $218 \times 10^{-6} \text{ m/s}$
 (D) $21.8 \times 10^{-6} \text{ m/s}$
87. Areas where moving air converge have
- (A) Low pressure only
 (B) High pressure only
 (C) Both high and low pressure
 (D) Zero pressure
88. A plate and a sphere of the same material and size are heated to a high temperature. Then
- (A) Plate will cool fastest and cube the slowest
 (B) Plate will cool fastest and sphere the slowest
 (C) Sphere will cool fastest and cube the slowest
 (D) Cube will cool fastest and plate the slowest
89. Which of the following phenomena proves that light has wave properties?
- (A) Interference patterns formed when light passes through a diffraction grating
 (B) Images formed by lenses
 (C) Light reflecting off a mirror
 (D) The refraction of light as it passes from air to water
90. In case of reflection of light at a plane mirror, the angle of incidence and angle of reflection are
- (A) Equal
 (B) Unequal
 (C) Always zero degrees
 (D) Always 90 degrees
91. Fraunhofer lines are due to
- (A) Magnetic field of sun
 (B) Absorption by dust particles in the sky
 (C) Scattering of light by dust particles in the sky
 (D) Absorption by elements in the solar atmosphere
92. The energy of an electron in the $n=1$ state of a hydrogen atom is -13.6 eV . The energy of an electron in the $n=2$ state is
- (A) 2
 (B) 4
 (C) 6
 (D) 8
93. Which of the following is formed when iron is heated in steam?
- (A) Ferric chloride
 (B) Ferrous chloride
 (C) Ferric oxide
 (D) Iron powder
94. An electron transitions from the $n=2$ state to the $n=1$ state. If E_K and E_P are the kinetic and potential energies of the electron in the $n=2$ state, then
- (A) E_K and E_P remain the same
 (B) E_K decreases 4 times, E_P increases 4 times
 (C) E_K increases 4 times, E_P decreases 4 times
 (D) E_K increases twice, E_P decreases twice

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95. A fuse is placed with an appliance in a/an
(A) Parallel arrangement
(B) Series arrangement
(C) Open circuit arrangement
(D) Loop circuit arrangement
96. In the hydrogen atom $E_3 - E_2 = E$. Find the ionisation potential in volt.
(A) 1.9 eV
(B) 13.2 eV
(C) 5.6 eV
(D) 10.2 eV
97. A force of 1.5
velocity when force ceases?
(A) 10 m/s
(B) 15 m/s
(C) 20 m/s
(D) 30 m/s
98. force of
the absorption of heat is (given specific heat of material = 600 J / kgK)
(A) 2.5 K
(B) 2.0 K
(C) 1.5 K
(D) 1 K
99. In
the time taken by them to complete one revolution?
(A) 1 : 4
(B) 4 : 1
(C) 1 : 8
(D) 8 : 1
100. Which one of the following vehicles offers largest inertia?
(A) Cycle
(B) Scooter
(C) Motor Bike
(D) Car
101. Magnetic field lines inside a solenoid are
(A) Converging lines
(B) Zig-zag curves
(C) Parallel straight lines
(D) Diverging lines
102. Which of the following is an insulator of electricity?
(A) Copper
(B) Silver
(C) Aluminium
(D) Glass
103. What happens when zinc metal is added into dilute hydrochloric acid?
(A) Hydrogen gas and zinc chloride are produced
(B) Zinc salt and water are produced
(C) Chlorine gas and iron hydroxide are produced
(D) No reaction takes place

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104. The speed of a gaseous reaction increases in presence of a catalyst because
- Adsorption of the gases on the catalyst surface lowers the temperature of the surface
 - Adsorption of the gases on the catalyst surface increases the temperature of the surface
 - Adsorption of the gases on the catalyst surface lowers the activation energy of the reaction
 - Adsorption of the gases on the catalyst surface increases the activation energy of the reaction
105. The atmospheric pressure is the pressure exerted by
- Solar System
 - Winds blowing on the surface of earth
 - All layers of space
 - Overhead atmosphere 100 km above the surface of earth
106. One coulomb is defined as the amount of total charge accumulated on
- 3.2×10^{18} electrons
 - 1.6×10^{18} electrons
 - 1.6×10^{-19} electrons
 - 6.24×10^{18} electrons
107. and velocity becomes doubled, then its will be
- 2K
 - 4K
 - 8K
 - 16K
108. Which one of the following transitions in a hydrogen atom emits photons of highest frequency?
- $n = 1$ to $n = 2$
 - $n = 2$ to $n = 1$
 - $n = 2$ to $n = 4$
 - $n = 6$ to $n = 3$
109. A ray of light is incident on a surface at an angle of reflection?
- 15 degrees
 - 30 degrees
 - 45 degrees
 - 60 degrees
110. In domestic electrical circuits the electric appliances are used/connected
- In series arrangement only
 - In parallel arrangement only
 - In both series and parallel arrangement
 - Randomly as per requirements of appliance utility
111. The neutralization reaction is (symbols/notations carry their usual meaning)
- $\text{HCl} + \text{NaOH} \rightarrow \text{NaCl} + \text{H}_2\text{O}$
 - $\text{BaCl}_2(\text{aq}) + \text{Na}_2\text{SO}_4(\text{aq}) \rightarrow \text{BaSO}_4(\text{s}) + \text{NaCl}(\text{aq})$
 - $\text{N}_2(\text{g}) + \text{O}_2(\text{g}) + \text{Heat} \rightarrow 2\text{NO}$
 - $\text{CH}_4(\text{g}) + 2\text{O}_2(\text{g}) \rightarrow \text{CO}_2(\text{g}) + 2\text{H}_2\text{O}(\text{l}) + \text{heat}$
112. Oil undergoes oxidation, becomes rancid and its taste changes. This can be avoided by
- Boiling the oil
 - Keeping the oil in an air tight container
 - Filtering the oil
 - Keeping the oil under sunlight

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113. In exothermic reaction
- (A) Gas is liberated
 - (B) Precipitation happens
 - (C) Heat is liberated
 - (D) Heat is absorbed
114. Magnetic lines of force of a bar magnet
- (A) Never intersect
 - (B) Intersect at north pole
 - (C) Intersect at south pole
 - (D) Intersect at the centre of the magnet
115. column of mercury having height of
- (A) 1.00 m
 - (B) 7.6 m
 - (C) 0.76 m
 - (D) 0.076 m
116. Diversity found between adjacent communities of ecosystem is called
- (A) Alpha diversity
 - (B) Beta diversity
 - (C) Gamma diversity
 - (D) Genetic diversity
117. Autecology is study of
- (A) Relation of a population to its environment
 - (B) Relation of an individual to its environment
 - (C) Relation of a niche to its environment
 - (D) Relation of a biome to its environment
118. Maximum endemism occurs in India in case of
- (A) Amphibians
 - (B) Fresh water fishes
 - (C) Flowering plants
 - (D) Reptiles
119. Where among the following will you find Pitcher plant?
- (A) Rain forest of North east India
 - (B) Sunderbans
 - (C) Thar desert
 - (D) Western ghats
120. Which of the following countries has highest biodiversity?
- (A) Brazil
 - (B) South Africa
 - (C) Russia
 - (D) India
121. Which of the following is NOT a by-product of respiration?
- (A) Energy
 - (B) Water
 - (C) Carbon dioxide
 - (D) Oxygen
122. Eutrophication means
- (A) Process of nutrition enrichment in water bodies
 - (B) Dominance of less desirable form of plant
 - (C) Decrease in crop yield
 - (D) Death and decay of submerged plants
123. What is the trend of biodiversity towards equator?
- (A) Biodiversity increases towards equator
 - (B) Biodiversity remains same at all latitudes
 - (C) Biodiversity becomes zero towards equator
 - (D) Biodiversity first decreases then increases at equator

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124. Which of the following show maximum biodiversity?
- Mangroves
 - Coral reefs
 - Temperate rain forest region
 - Taiga region
125. Rivet popper hypothesis was given by
- Mishra
 - Odum
 - Ehrlich and Ehrlich
 - Reiter
126. Prokaryotic genetic system consists of
- DNA but no histones
 - Neither DNA nor histones
 - Both DNA and histones
 - Either DNA or histones
127. Ecotone is
- A polluted area
 - The bottom of a lake
 - A zone of transition between two communities
 - A zone of developing community
128. Biosphere is
- A component in the ecosystem
 - Composed of the plants present in the soil
 - Life in the outer space
 - which interact with the physical environment
129. What is the indication of high BOD of water?
- High microbial pollution
 - Low microbial pollution
 - Water is pure
 - Water is saline
130. Ozone present in stratosphere is called good ozone because it dissipates the harmful radiation of
- UV-A
 - UV-B
 - UV-C
 - UV-C and partly UV-B
131. To produce 128 cells from a single cell, how many number of mitotic divisions are required?
- 7
 - 8
 - 16
 - 32
132. to divide at maturity?
- Parenchyma
 - Sclerenchyma
 - Phloem
 - Xylem
133. N particles which lead to
- Dry acid deposition
 - Photochemical smog
 - Wet acid deposition
 - Industrial smog

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134. Name the event which precedes reformation of nuclear envelopes during M-phase of cell cycle?
- (A) Decondensation of chromosomes appearance of nuclear lamina
(B) Formation of contractile ring and phragmoplast
(C) Transcription from chromosomes and reassemble of nuclear lamina
(D) Formation of contractile ring and transcription
135. Which one of the following has irregular nuclei?
- (A) Neutrophils
(B) Basophils
(C) Eosinophils
(D) Monocytes
136. mode of reproduction?
- (A) Mucor
(B) Nostoc
(C) Amoeba
(D) Yeast
137. Replication of DNA takes place in
- (A) S-Phase
(B) Metaphase
(C) Prophase
(D) Anaphase
138. The correct statement with respect to microsomes is that
- (A) Microsomes as discrete entities are found only in the nucleolus and are revealed by E.M picture
(B) Microsomes as discrete entities are not found in most of the cytoplasmic membranous components
(C) Microsomes as discrete entities are always found attached to the outer surface of RER
(D) Microsomes as discrete entities are found in all living cells, uniformly distributed throughout the cell
139. On which segment of *Pheretima posthuma*, is the female genital pore located?
- (A) 14th
(B) 16th
(C) 18th
(D) 15th
140. Which structure is absent in male cockroach?
- (A) Labium
(B) Phallomeres
(C) Spermatheca
(D) Anal cerci
141. The decrease in pH level of soil and water mainly due to human intervention is called
- (A) Eutrophication
(B) Acidification
(C) Alkalization
(D) Biomagnification

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142. The acid rains are caused due to
(A) NO_2 and SO_2
(B) NH_3 and SO_3
(C) CO and CO_2
(D) O_3 and CO_2
143. Name the event which takes place during Diplotene stage of prophase I of meiosis?
(A) Compaction of chromosomes
(B) Formation of synaptonemal complexes
(C) Formation of recombinational nodules
(D) Dissolution of synaptonemal complex
144. Which of the following is NOT a cause for loss of Biodiversity?
(A) Destruction of habitat
(B) Invasion of alien species
(C) Keeping animals in zoological parks
(D) Over-exploitation of natural resources
145. Given below are the events of meiosis:
I. Terminalization
II. Crossing over
III. Synapsis
IV. Disjunction of genomes
Arrange them in correct sequence:
(A) II, I, IV, III
(B) III, II, I, IV
(C) IV, III, II, I
(D) I, IV, III, II
146. Methaemoglobinaemia is caused due to
(A) Pathogenic microorganisms
(B) Excess of nitrates present in drinking water
(C) Increased concentration of non-degradable pesticides
(D) Non availability of adequate oxygen
147. Ecological niche is
(A) The surface area of the ocean
(B) An ecologically adapted zone
(C) The physical position and functional role of a species within the community
(D) of the lake
148. How do algal blooms in a water body affect the environment?
(A) By causing global warming
(B) By causing eutrophication
(C) By causing biomagnification
(D) By increasing the salinity of water
149. Which one of the following impurities is easiest to remove from waste water?
(A) Bacteria
(B) Colloids
(C) Dissolved solids
(D) Suspended solids
150. The highest chromosome number is found in the meiocytes of
(A) Human beings
(B) Fruit fly
(C) Housefly
(D) Ophioglossum

Correct Answer					Correct Answer				
Q.No.	Code A	Code B	Code C	Code D	Q.No.	Code A	Code B	Code C	Code D
1	D	B	A	B	76	C	X	A	B
2	B	D	D	D	77	X	D	A	B
3	B	C	B	A	78	B	B	C	C
4	C	B	B	B	79	A	B	B	B
5	A	A	C	C	80	C	C	X	C
6	A	B	D	C	81	A	C	C	A
7	D	B	B	B	82	B	D	A	A
8	B	A	A	B	83	C	D	A	B
9	B	C	C	A	84	D	B	B	B
10	C	D	B	D	85	C	A	B	B
11	C	C	C	C	86	B	B	A	B
12	C	B	C	C	87	C	A	C	C
13	C	C	B	B	88	A	B	C	D
14	B	C	B	B	89	C	A	A	C
15	B	B	C	C	90	B	A	B	A
16	A	D	A	B	91	A	D	C	A
17	A	A	B	D	92	A	A	D	D
18	A	B	D	A	93	C	C	A	D
19	D	A	A	A	94	D	C	D	A
20	B	A	A	A	95	C	B	A	B
21	B	C	D	B	96	A	A	B	D
22	D	B	B	C	97	C	C	D	D
23	B	D	B	B	98	C	A	C	B
24	C	B	C	D	99	A	C	B	D
25	D	B	C	B	100	D	D	A	C
26	B	B	B	B	101	B	C	C	A
27	C	C	B	B	102	B	D	B	C
28	B	C	C	C	103	A	A	A	D
29	C	D	B	D	104	D	C	C	A
30	B	B	D	C	105	C	D	C	C
31	B	C	A	D	106	B	D	D	A
32	A	A	B	B	107	D	C	D	B
33	C	B	A	A	108	D	B	C	B
34	B	D	D	A	109	B	B	B	C
35	B	C	C	D	110	B	B	A	C
36	C	A	A	A	111	A	A	A	C
37	A	A	D	A	112	A	B	D	C
38	D	A	B	C	113	A	C	B	A
39	C	B	B	D	114	C	A	C	C
40	D	B	D	C	115	D	C	D	A

41	C	A	D	B		116	A	B	B	D
42	C	B	C	B		117	A	B	C	C
43	A	C	C	D		118	A	C	D	C
44	B	D	A	B		119	B	A	A	C
45	A	C	B	C		120	A	A	B	C
46	A	A	C	A		121	B	D	C	B
47	B	B	C	C		122	C	A	A	B
48	A	C	B	C		123	D	A	C	A
49	D	D	A	B		124	B	B	A	B
50	D	D	A	A		125	C	C	B	B
51	C	A	X	X		126	A	A	B	D
52	B	A	B	B		127	C	C	C	A
53	A	A	C	B		128	D	D	C	D
54	B	C	D	B		129	C	A	B	A
55	B	B	B	X		130	A	B	A	A
56	B	B	C	X		131	D	A	A	B
57	C	B	A	D		132	B	A	B	D
58	A	C	C	B		133	B	B	A	B
59	B	B	B	C		134	A	B	A	A
60	B	X	B	A		135	B	A	A	B
61	D	C	A	C		136	C	B	B	B
62	B	B	B	A		137	A	A	B	B
63	C	B	X	B		138	A	B	D	B
64	A	B	B	A		139	D	A	B	A
65	B	A	C	C		140	B	C	A	A
66	B	B	C	B		141	A	B	B	A
67	B	C	B	B		142	B	A	D	D
68	X	B	B	A		143	A	D	B	B
69	B	X	B	A		144	C	C	A	A
70	A	C	B	B		145	D	B	A	C
71	A	B	B	C		146	B	B	B	C
72	A	A	B	A		147	A	C	C	A
73	X	B	A	B		148	B	B	A	A
74	B	A	A	B		149	B	D	D	B
75	C	A	A	A		150	B	D	D	A

Note: Grace Marks will be awarded to the questions where answer keys are indicated as "X".