Paper Code No- B25/1

Question Booklet No. 225164

ENTRANCE EXAMINATION-2018
BACHELOR OF PHYSIOTHERAPY

[SET-D]

ROLL NO. | | | | | | | | | |

.....
Signature of Invigilator

Time: 1 Hour 45 Minutes

Total Marks: 100

Instructions to Candidates

1. Do not write your name or put any other mark of identification anywhere in the OMR Response Sheet. **IF ANY MARK OF IDENTIFICATIONS IS DISCOVERED ANYWHERE IN OMR RESPONSE SHEET, the OMR response sheet will be cancelled, and will not be evaluated.**
2. This Question Booklet contains the cover page and a total of **100 Multiple Choice Questions of 1mark each.**
3. Space for rough work has been provided at the beginning and end. Available space on each page may also be used for rough work.
4. **There is negative marking in Multiple Choice Questions. For each wrong answer 0.25 marks will be deducted.**
5. USE OF CALCULATOR IS NOT PERMITTED.
6. USE/POSSESSION OF ELECTRONIC GADGETS LIKE MOBILE PHONE, iphone, iPad, pager ETC. are strictly PROHIBITED.
7. Candidate should check the serial order of questions at the beginning of the test. If any question is found missing in the serial order, it should be immediately brought to the notice of the Invigilator. No pages should be torn out from this question booklet.
8. Answers must be marked in the OMR Response sheet which is provided separately. OMR Response sheet must be handed over to the invigilator before you leave the seat.
9. The OMR Response sheet should not be folded or wrinkled. The folded or wrinkled OMR/ Response Sheet will not be evaluated.
10. Write your Roll Number in the appropriate space (above) and on the OMR Response Sheet. Any other details, if asked for, should be written only in the space provided.
11. There are four options to each question marked A, B, C and D. Select one of the most appropriate option and fill up the corresponding oval/circle in the OMR Response Sheet provided to you. The correct procedure for filling up the OMR Response Sheet is mentioned below.
12. Use Black or Blue Ball Pen only for filling the ovals/circles in OMR Response Sheet. Darken the selected oval/circle completely. If the correct answer is 'B', the corresponding oval/circle should be completely filled and darkened as shown below.

CORRECT METHOD
(A) (B) (C) (D)

WRONG METHOD																				
(A)	(B)	(C)	(D)	(A)	(B)	(C)	(D)	(A)	(B)	(C)	(D)	(A)	(B)	(C)	(D)	(A)	(B)	(C)	(D)	(A)	(B)	(C)	(D)

1. Bulliform cells are seen in which part of the plants?
   (A) Monocot stem (B) Monocot leaf
   (C) Dicot leaf (D) Dicot stem

2. The citric acid cycle takes place in which part of the cell?
   (A) Mitochondrial matrix (B) Cytoplasm
   (C) Inner mitochondrial membrane (D) Outer mitochondrial membrane

3. Which codons do not possess any t- RNAs ?
   (A) Degenerate codon (B) Initiator codon
   (C) Stop codon (D) Mitochondrial codon

4. 250kg cow produces 200gm of protein per day. In the same period which microorganism produces 25 tonnes of protein?
   (A) Methylophilus methylotrophus (B) Cyanobacteria
   (C) Mycoplasma (D) Gonyanlax

5. What number of chromosomes are present in human secondary supermetocyte, primary supermetocyte, spermatids and spermatogonia respectively ?
   (A) 23, 23, 46, 46 (B) 46, 23, 46, 23
   (C) 23, 46, 23, 46 (D) 46, 46, 23, 23

6. If the codon on mRNA is UAC, then what will be the anticodon on tRNA for this codon
   (A) AUC (B) AUG
   (C) UAC (D) AAG

7. In the population interactions, if the species A is + and species B is also +, then type of interaction is
   (A) Predation (B) Mutualism
   (C) Competition (D) Amensalism

8. Which character is not fit for chordata animals
   (A) Heart is on dorsal
   (B) Post anal tail is present
   (C) Pharyux perforated by gill slits
   (D) Central nervous system is dorsal, hollow and single

9. How much partial pressure (in mmHg) of CO_2 in alveoli?
   (A) 40 (B) 104
   (C) 95 (D) 45

10. Which is the correct vertebral formula of human ?

(A) C_5, T_{12}, L_7, S_5, and C_4
(B) C_7, T_{12}, L_5, S_5, and C_4
(C) C_{12}, T_7, L_5, S_5, and C_4
(D) C_{12}, T_5, L_7, S_5, and C_4

11. In some legumes plants, the leaf base may become swollen which is called

(A) Phyllode
(B) Pulvinus
(C) Leaf pitcher
(D) Sheathing leaf base

12. Sexual reproduction of spirogyra is

(A) Morphological as well as physiological isogamy
(B) Morphological isogamy and physiological anisogamy
(C) Morphological as well as physiological anisogamy
(D) Morphological anisogamy and physiological anisogamy

13. Percentage of water in the honey is

(A) 17 – 20%
(B) 32 – 37%
(C) 40 – 45%
(D) 98%

14. Estimation says that in India and China what percentage of world livestock population is at present

(A) 25%
(B) 70%
(C) 50%
(D) 45%

15. The first member of TCA cycle is

(A) Pyruvate
(B) Succinate
(C) OAA
(D) Malic acid

16. For which of the following ascending limb of Loop of Henle is permeable?

(A) Glucose
(B) NH_3
(C) Na^+
(D) Water

17. The Intestine is different from the stomach by the presence of

(A) Digestive gland
(B) Villi
(C) Sub – mucosa
(D) Serosa

18. Binding of oxygen with haemoglobin is primarily related to

(A) Partial pressure of O_2
(B) Partial pressure of CO_2
(C) H^+ ion concentration
(D) Temperature

19. Plant with ovaries having only one ovule is generally pollinated by

(A) Wind
(B) Butterflies
(C) Birds
(D) Bees

20. Which extra- embryonic membrane participate in the formation of placenta?
(A) Amnion & Chorione
(B) Chorione & Allentois
(C) Chorione & Yolk sac
(D) Yolk sac & Allentois

21. The codon UUU and UUC codes for phenylalanine, this feature of genetic code is
(A) degenerate
(B) commaless
(C) non-ambiguous
(D) non-overlapping

22. PAN (peroxy acetyl nitrate) is a secondary pollutant and is found in
(A) Herbicide
(B) Pesticide
(C) Fertilizer
(D) Smog

23. Most hazardous metal pollutant of automobile exhaust is
(A) Hg
(B) Cd
(C) Pb
(D) Cu

24. Grass land with scattered trees is called
(A) Savana biome
(B) Rain forest
(C) Decidous forest
(D) Taiga

25. According to national forest policy how much area should be covered by forest on hills in India ?
(A) 33%
(B) 67%
(C) 48%
(D) 50%

26. A block of mass m is placed on a smooth inclined plane of inclination θ. The inclined plane itself is placed in a cabin, which is accelerating upwards at the rate a in a direction making angle θ with the horizontal. What will be the acceleration of the block down the inclined plane
(A) $g\sin\theta - a$
(B) $g\sin\theta + a$
(C) $(g - a)\sin\theta$
(D) $(g + a)\sin\theta$

27. A log of weight W is pulled at a constant velocity and with a force F by means of a rope and ground is h. Neglecting the thickness of the log, the coefficient of friction between log and ground is
(A) $\frac{F\sqrt{l^2-h^2}}{wl-Fh}$
(B) $\frac{\sqrt{l^2-h^2}}{wl-Fh}$
(C) $\frac{wl-Fh}{F\sqrt{l^2-h^2}}$
(D) $\frac{wl-Fh}{\sqrt{l^2-h^2}}$

28. A person draws water from a 5m deep well in a bucket of mass 2kg of capacity 8 litre by a rope of mass 1kg. What is the total work done by the person, ($g = 10m/s^2$)
(A) 550J
(B) 525J
(C) 125J
(D) 500J

29. In two separate collisions, the coefficient of restitution e_1 and e_2 are in the ratio 3:1. In the first collision the relative velocity of approach is twice the relative velocity of separation. Then the ratio between the relative velocity of approach and relative velocity of separation in the second collision is

(A) 1:2 (B) 2:3
(C) 3:2 (D) 6:1

30. Particles of masses m, 2m, 3m, ...nm are placed on the same line at distance l,2l,3l,.....nl from a fixed point. The distance of centre of mass of particles from fixed point is

(A) $\frac{(2n+1)l}{3}$ (B) $\frac{(2n-1)l}{3}$
(C) $\frac{(2n^2+1)l}{3}$ (D) $\frac{(2n^2-1)l}{3}$

31. A particle is projected vertically upwards the surface of the earth (radius R) with a speed equal to one fourth of escape velocity. What is the maximum height attained by it from the surface of the earth?

(A) $\frac{16}{15}$R (B) $\frac{R}{15}$
(C) $\frac{14}{15}$R (D) $\frac{2}{15}$R

32. A piece of solid weighs 120g in open air, 80g in water and 60g in a liquid. The relative density of the solid and that of the liquid are respectively

(A) 3, 2 (B) 3, 3/2
(C) 3/2, 2 (D) 4,3

33. 10g of ice at 0^0C is mixed with 100g of water at 50^0C. What is the resultant temperature of mixture?

(A) 31.2^0C (B) 32.8^0C
(C) 36.7^0C (D) 38.2^0C

34. Three simple Harmonic motions of equal amplitudes A and equal time periods are in the same direction combine. The phase of the second motion is 60^0 ahead of the first and the phase of the third motion is 60^0 ahead of the second. The amplitude of the resultant motion is

(A) 2A (B) A
(C) $\frac{3A}{2}$ (D) $\frac{5A}{2}$

35. A potentiometer wire has a length of of 10m and resistance 4 Ω/m. An accumulator of e.m.f 2V and resistance box are connected in series with it. Calculate the resistance to be introduced in the box so as to get a potential gradient of 0.1 V/m

(A) 80Ω (B) 120Ω
(C) 40Ω (D) 4Ω

36. A magnet is parallel to a uniform magnetic field. If it is rotated by 60^0, the work done is 0.8 J. How much work is done in moving it 30^0 further ?
(A) 4 J
(B) 0.4J
(C) 8 J
(D) 0.8 J

37. The dimension of angular momentum is
(A) ML^2T^{-1}
(B) $M^2L^2T^{-1}$
(C) ML^2T^{-2}
(D) $M^2L^2T^{-2}$

38. A parallelogram is formed with $\vec{a}$ and $\vec{b}$ as the sides. Let $\vec{d_1}$ and $\vec{d_2}$ be the diagonals of parallelogram. Then $a^2 + b^2$ is
(A) $d_1^2 + d_2^2$
(B) $d_1^2 - d_2^2$
(C) $(d_1^2 + d_2^2)/2$
(D) $(d_1^2 - d_2^2)/2$

39. The distance between an object and the screen is 100cm. A lens produce an image on the screen, when the lens is placed at either of the positions 40cm apart. The power of the lens is nearly
(A) 3 D
(B) 5 D
(C) 2 D
(D) 9 D

40. In a stationary wave
(A) Strain is maximum at antinodes
(B) Strain is maximum at nodes
(C) Strain is constant throughout
(D) Amplitude is zero at all points

41. A metallic loop is placed in a magnetic field. If a current is passed through it then
(A) The ring will feel a force of attraction
(B) The ring will feel a force of repulsion
(C) It will experience torque
(D) None of these

42. The electric potential V at any point x, y, z (all in meters) in space is given by $V = 4x^2$ volt, the electric field at the point (1m, 0,2m) in volt/meter is
(A) 8 V along negative X- axis
(B)8 V along positive X-axis
(C)16 V along negative X- axis
(D)16 V along positive Z- axis

43. The minimum velocity of projection to go out from the earth's gravitational pull is called
(A)terminal velocity
(B)escape velocity
(C)angular velocity
(D)orbital velocity

44. The angle of projection at which the horizontal range and maximum height of projectile are equal
(A) 45^0
(B) $\theta = \tan^{-1}(0.25)$
(C) $\theta = \tan^{-1}4$
(D) 60^0

45. In the Davisson Germer experiment, position of maxima is obtained by Bragg's equation $2d\sin\theta = n\lambda$. If in experiment accelerating voltage is increased then value θ
(A) will increase
(B) will decrease
(C) will be same
(D) may be increasing or may be decreasing

46. Half life period of a sample is 30min. Its decay fraction at instant t_1 is $\frac{4}{5}$ and decay fraction at instant t_2 is $\frac{9}{10}$ then $(t_2 - t_1)$ interval is
(A) 30 min
(B) 43 min
(C) 60 min
(D) 10 min

47. A child stands at one end of a boat moving with a speed v in still water. If the child starts running towards the other end of the boat with a speed u, the centre of mass of the system (boat and child) will move with a speed
(A) v – u
(B) v
(C) u
(D) v + u

48. An electric field $\vec{E} = (20\hat{i} + 30\hat{j})N/C$ exists in the space. If the potential at origin is taken to be zero, the potential at (2m, 2m) point is
(A) -50V
(B) 100V
(C) -100V
(D) 200V

49. The degree of freedom for H_2 gas are
(A) 3
(B) 5
(C) 1
(D) 7

50. What is the value of sink temperature when efficiency of engine is 100%?
(A) 0 K
(B) 300 K
(C) 273 K
(D) 400 K

51. During reaction of following reactants, in which case formed gaseous product have no hybridization?
(A) $NH_4Cl + Ca(OH)_2$
(B) $Al_4C_3 + H_2O$
(C) $KMnO_4 + HCl$
(D) $CaC_2 + H_2O$

52. Dipole moment of the AX_4 type of molecule is zero. The geometry of it can be
(A) Tetrahedral or square planar
(B) See saw or square planar
(C) Only tetrahedral planar
(D) Only square planar

53. A sodium salt on treatment with $MgCl_2$ gives white precipitate only on heating. The anion of the sodium salt is
(A) SO_4^{-2} & CO_3^{-2}
(B) HCO_3^-
(C) NO_3^-
(D) CO_3^{-2}

54. Collateral (side by side) overlapping is present in
(A) B_2H_6 & BH_3
(B) BF_4^- & SiO_2
(C) BF_3 & H_3PO_4
(D) BF_3 & $B_3N_3H_6Cl_3$

55. Metals that are not present in German silver are
(A) Ni & Cu
(B) Cu & Zn
(C) Cr & Ag
(D) None of these

56. For the reaction, $A_{(g)} + 2B_{(g)} \rightarrow 2C_{(g)} + 3D_{(g)}$ the value of ΔH at 270 is 19.0 Kcal. The value of ΔU for the reaction would be
(A) 20.8 Kcal
(B) 19.8 Kcal
(C) 18.8 Kcal
(D) 17.8 Kcal

57. If velocity of electron is 75% of velocity of light, find dynamic mass of electron is
(A) $\frac{2}{\sqrt{3}}M_{rest}$
(B) $\frac{4}{\sqrt{15}}M_{rest}$
(C) $\frac{4}{\sqrt{7}}M_{rest}$
(D) $\frac{4}{\sqrt{5}}M_{rest}$

58. In a concentration cell, the same reactants are present in both the anode and the cathode compartments, but at different concentrations. Calculate the emf of cell containing 0.04 MCr^{3+} in one compartment and 1.0 MCr^{3+} in other if Cr electrodes are used in both
(A) 0.028V
(B) 0.249V
(C) 0.083V
(D) 0.125V

59. In the reaction $X(g) + Y(g) \rightleftharpoons 2Z(g)$, 2 mole of X, 1 mole of Y and 1 mole of Z are initially placed in a 10 liter vessel and allowed to reach equilibrium. If equilibrium concentration of Z is 0.2 M, then K_e for the given reaction is
(A) 1.60
(B) $\frac{80}{3}$
(C) $\frac{16}{3}$
(D) None of these

60. If the bond length of C-O bond in carbon monoxide is $1.128A^0$ then what is the value of C-O bond length in $Fe(CO)_5$?
(A) $1.15A^0$
(B) $1.128A^0$
(C) $1.02A^0$
(D) $1.118A^0$

61. For the reaction $A + B \rightleftharpoons C + D$, the degree of dissociation α would be (K is equilibrium constant)
(A) $\frac{\sqrt{K}}{\sqrt{K}+1}$
(B) $\sqrt{K}+1$
(C) $\sqrt{K} \pm 1$
(D) $\sqrt{K}-1$

62. Glycerol on treatment with oxalic acid at 110^0C form
(A) Formic acid
(B) CO_2 and CO
(C) allyl alcohol
(D) Glycol

63. Element with atomic number 92, if emits one α and one β particle then daughter nuclei configuration will be
(A) $[X_e]4t^25d^16s^2$
(B) $[R_n]4t^25d^16s^2$
(C) $[R_n]5t^26d^27s^2$
(D) $[R_n]5t^26d^17s^2$

64. Which of the following is a bronsted base?
(i) NH_3
(ii) CH_3NH_2
(iii) HCO_3^-
(iv) SO_4^{2-}
(A) (i), (ii), (iii), (iv)
(B) (i), (ii)
(C) (i), (ii), (iii)
(D) (i), (iii), (iv)

65. Correct order of size is
(A) Fe ≈ Co ≈ Ni
(B) Ni < Pd ≈ Pt
(C) Se< Y < La
(D) All of these

66. Most ionic compound is
(A) $MgCl_2$
(B) RbCl
(C) $AlCl_3$
(D) $SnCl_4$

67. In which species carbon oxygen bond is weakest?
(A) CO_3^{-2}
(B) CO_2
(C) CO
(D) CH3COO$^-$

68. Aerosol is a colloid of
(A) gas in solid
(B) Liquid in gas
(C) gas in liquid
(D) solid in solid

69. When acetic acid reacts with ketene, product formed is
(A) Ethyl acetate
(B) Ace to acetic ester
(C) Acetic anhydride
(D) No. Rx^n

70. Which molecule have central atom with 20% s-character hybridized orbital
(A) CH_4
(B) PF_5
(C) BCl_3
(D) XeO_3

71. In the reaction $xBrO_3^- + yCr_3^+ + zH_2O \rightarrow Br_2 + CrO_4^{2-} + H^+$ the coefficients x, y and z are
(A) 6, 10, 11
(B) 6, 10, 20
(C) 6, 8, 22
(D) 6, 10, 22

72. Ether is prepared by
(A) Williamson's Synthesis
(B) Wurt'z reaction
(C) Friedel-Craft reaction
(D) Hofmann-bromide reaction

73. The reaction of HBr with ethylene is an example of
(A) Substitution reaction
(B) Condensation reaction
(C) Polymerization
(D) Addition reaction

74. Highest (+7) oxidation state is shown by
(A) Co
(B) Cr
(C) V
(D) Mn

75. When a neutral atom is converted into cation, there is
(A) A decrease in the atomic number
(B) An increase in the atomic number
(C) A decrease in size
(D) An increase in size

76. Which of the following occur without the help of brain ?
(A) Cranial reflex
(B) Spinal reflex
(C) Efferrent reflex
(D) Afferent reflex

77. Girding is not possible in monocot stem because?
(A) Vascular bundles are bicollateral
(B) Vascular bundles are closed
(C) Vascular bundles are scattered
(D) Both (A) and (C)

78. In a trihybrid cross what is the ratio of offspring in F_2 generation having three dominant and three recessive trait
(A) 9 : 1
(B) 1 : 1
(C) 27 : 1
(D) 3 : 1

79. Mr and Mrs Jones are carrier of sickle cell anemia disease. What is their chance of having a child with the sickle cell trait
(A) 50%
(B) 0%
(C) 25%
(D) 100%

80. Which of the following is not an atavistic structure?
(A) Dense body hairs
(B) Enlarged canines
(C) Presence of sixth finger
(D) Presence of tail in some babies

81. Ubishbody is present in
(A) only amoeboid tapetum
(B) only secretory tapetum
(C) Both amoeboid and secretory tapetum
(D) sporogenous tissue

82. After immunoflorescence technique done on stomach section, Antibodies found on parietal cells are marker for
(A) Thyrotoxicosis (B) pernicious Anemia
(C) Iron deficiency Anaemia (D) Thalassemia

83. In brown algae asexual spores are
(A) Pear shaped and have two unequal flagella
(B) Pear shaped and have two unequal cilia
(C) Oval shaped and have two unequal flagella
(D) Comma-shaped and biflagellate

84. Donor semen is introduced into uterus through
(A) Intrauterine transfer (IUT)
(B) Intrauterine insemination (IUI)
(C) Gamete intrafallopian transfer (GIFT)
(D) Intracytoplasmic sperm injection (ICSI)

85. In pea plant which of the following character is controlled by pleiotropic gene
(A) High and flower colour (B) Seed shape and size of starch grain
(C) Seed colour and pod colour (D) Flower colour and seed shape

86. Which of the following is helpful in control of ozone depletion ?
(A) Kyoto protocol (B) Montreal protocol
(C) Earth summit (D) World summit

87. Among the following which statement is correct regarding "Hisardale"?
(A) It is a breed of cow developed in Punjab
(B) It is a breed of sheep developed in Haryana
(C) It is a breed of sheep developed in Punjab
(D) It is a breed of cow developed in Haryana

88. Which of the following is symbiotic nitrogen fixer?
(A) Azolla (B) Glomus
(C) Azotobacter (D) Frankia

89. Which of the following is reducing carbohydrate?
(A) Sucrose (B) Trehalose
(C) Glucose (D) Insulin

90. The water prevention and control of pollution act apply in India
(A) 1972 (B)1986
(C) 1981 (D) 1974

91. Under production of hormones by the adrenal cortex causes
(A) Addison's disease
(B) Mysthenia gravis
(C) Cann's disease
(D) Cushing's diseases

92. Which of the following peptide chain is not present in mature insulin ?
(A) A-peptide
(B) B- peptide
(C) C- peptide
(D) A & B peptide

93. In coconut which port of fruit is fibrous?
(A) Endocarp
(B) Epicarp
(C) Mesocarp
(D) Endosperm

94. In cilrus, woody, straight and pointed thorn is the modification of which part of the plant?
(A) Axillary bud
(B) Apical bud
(C) Stipuls
(D) Leaf apex

95. Haplontic type of life cycle is seen in which plant
(A) Maize plant
(B) Polysiponia
(C) Moss
(D) Chlamydomonas

96. In cycus small specialised roots called coralloid roots are associated with which N_2 fixating bacteria?
(A) Rhizobium
(B) Cyanobacteria
(C) Nitrosomonas
(D) Nitrobacter

97. In the following which example is not of Bryophyta ?
(A) Polytrichum
(B) Salvinia
(C) Funaria
(D) Sphagnum

98. Among the following Scientists who discovered a new infection agent that was smaller than virus called viroids?
(A) M.W. Beijerinek
(B) D.J. Ivanowsky
(C) Pastear
(D) T.O. Diener

99. Muliathi is the medicine belongs to which family of the plants?
(A)Papilionoidac
(B) Salanaeae
(C) Crucifare
(D) Liliaceae

100. Which of the following plant tissue is dead and without protoplasts?
(A) Chlorenchyma
(B) Collenchyma
(C) Selerenchyma
(D) Parenchyma