

## ENTRANCE EXAMINATION, JUNE 2017 QUESTION PAPER BOOKLET

M.Sc.(Neural and Cognitive Science)

Marks: 100

Time: 2.00 hrs.

Hall Ticket No. \_\_\_\_\_

1. Write your Hall Ticket Number in the OMR Answer Sheet given to you. Also write the Hall Ticket Number in the space provided above.
2. Read carefully the following instructions:
  - a. This Question paper has Two Sections: Part- I and Part- II .
  - b. Part I is to be answered by all candidates. There are two sets of questions for part II corresponding to the two streams. **Answer one and only the set corresponding to your stream of interest.**
  - c. The stream name and code is mentioned in the beginning of each set. **Mark the booklet code for the stream in the OMR sheet. Booklet code A for 'Neuroscience' stream. Booklet code B for 'Cognitive Science' stream.**
  - d. Part - I has 40 and Part - II has 60 objective type questions of one mark each.
  - e. **There is negative marking for all the questions in parts I and II. Each wrong answer carries -0.33 mark.**
  - f. Answers are to be marked on the OMR answer sheet following the instructions provided there upon.
  - g. Calculators are permitted. Logarithmic tables are not allowed.
  - h. Hand over the OMR answer sheet at the end of the examination to the Invigilator.
  - i. No additional sheets will be provided. Rough work can be done in the question paper itself / space provided at the end of the booklet.

## PART I

1. Choose the alternative closest in meaning to the given word.

Virtuoso:

- A. skilled performer
- B. amateur
- C. good person
- D. professional

2. Select the pair that best expresses the relationship similar to that expressed in the original pair.

Nuance: Subtle

- A. Pun: Sarcastic
- B. Fib: Honest
- C. Inquiry: Discreet
- D. Hint: Indirect

3. Choose the correct alternative to complete the meaning of the given sentence

Her written statements failed to be consistent \_\_\_\_\_ what she had said earlier

- A. on
- B. with
- C. in
- D. to

4. Which one of the following alternatives is spelt correctly?

- A. extacy
- B. ecstasy
- C. ecstacy
- D. extasy

5. Writing on the wall.

- A. graffiti
- B. obvious truth
- C. foreboding
- D. prediction

6. The average age of a father and his only son is 25% more than the average age of that boy and his mother. When that boy was born, his mother was 30 years old and his father was 40 years old. Find the present age of father.
- A. 55  
B. 48  
C. 65  
D. 45
7. In how many ways the letter 'SOLVING' can be rearranged to make 7 letter words such that none of the letters repeat?
- A. 49  
B. 5040  
C. 77  
D. None of the above
8. What is the missing letter in this series?  
b e h k n ? t
- A. q  
B. r  
C. s  
D. u
9. The average age of a group of 5 students was 10. The average age increased by 4 years when 2 new students joined the group. What is the average age of the two new students who joined the group?
- A. 15  
B. 20  
C. 22  
D. 24
10. There are twenty four students in a certain class. For every nine girls there are three boys. How many girls and how many boys are there in the class?
- A. 19 and 5  
B. 18 and 6  
C. 15 and 9  
D. 14 and 10

11. Pointing to a man in a photograph. Asha said. "His mother's only daughter is my mother."  
How is Asha related to that man ?

- A. Nephew
- B. Sister
- C. Wife
- D. Niece

12. Arrange the words given below in a meaningful sequence.

1. Poverty 2. Population 3. Death 4. Unemployment 5. Disease

- A. 2, 3, 4, 5, 1
- B. 3, 4, 2, 5, 1
- C. 2, 4, 1, 5, 3
- D. 1, 2, 3, 4, 5

13. If FRIEND is coded as HUMJTK, how is CANDLE written in that code ?

- A. EDRIRL
- B. DCQHQB
- C. ESJFME
- D. d. FSJEMK

14. One morning after sunrise, Suresh was standing facing a pole. The shadow of the pole fell exactly to his right. To which direction was he facing?

- A. East
- B. West
- C. South
- D. Data are inadequate

15. Statements: All men are vertebrates. Some mammals are vertebrates.

Conclusions:

- 1. All men are mammals.
  - 2. All mammals are men.
  - 3. Some vertebrates are mammals.
  - 4. All vertebrates are men.
- A. Only (4) Follows the Right Conclusion
  - B. Only (2)
  - C. Only (3)
  - D. Only (1)

16. Statements: All the locks are keys. All the keys are bats. Some watches are bats.

Conclusions:

1. Some bats are locks.
2. Some watches are keys.
3. All the keys are locks.

- A. Only (1) and (2)
- B. Only (1)
- C. Only (2)
- D. Only (1) and (3)

17. The largest number which divides 30, 78 and 102 to leave the same remainder in each case is

- A. 24
- B. 20
- C. 8
- D. 16

18. The average age of Maria, Vinita and Bindu is 24 years. If their ages are in the ratio of 5:6:7, find the age of the youngest girl.

- A. 20
- B. 30
- C. 18
- D. 24

19. A cylinder of 22 cm diameter and 10 cm height was used to fill water. How much water can be filled in this cylinder?

- A. 2.2 L
- B. 10.5 L
- C. 3.8 L
- D. 1.48 L

20. If BRISTLE : BRUSH, then

- A. arm : leg
- B. stage : curtain
- C. recline : chair
- D. key : piano

21. Antonym of “disparage” is:

- A. Please
- B. Denigrate
- C. Praise
- D. Belittle

Read the following information carefully and then answer the questions given below it (Questions 22 -26).

Following are the conditions for allotment of flats built by Town Council in the newly developed area of Hyderabad city. The applicant must:

- A. produce domicile certificate of the State
- B. be employed or self-employed in Hyderabad for minimum of 5 years
- C. be ready to pay the entire amount in 5 years period
- D. not be owner or co-owner (if spouse is owner) of a residential accommodation in the city limit of Hyderabad
- E. not be less than 35 years of age as on 31st Dec 2016.

In case of applicant who satisfies all other criteria except:

- I. at A above, be referred to President of Town Council
- II. at B above, but is ready to produce ration card of last five years should be referred to Chairman of House Allotment Committee.
- III. At C above, but is a freedom fighter or an ex-serviceman or first relation i.e., son/daughter/husband/wife of freedom fighter/ex-serviceman should be referred to Vice-Chairman of House Allotment Committee who can give concession per payment upto 15 years in such cases.

The last date for receipt of application was 31st Dec, 2016. Conditions set out in terms of age or duration of stay is to be fulfilled as on 31st Dec, 2016. Based on these criteria and information provided below, decide the course of action in each case. You are not to assume anything extra. If the data provided is not adequate to decide the given course of action, your answer will be 'data inadequate'. The cases are given to you as on 1st Jan, 2017.

22. RC Bhargav is a son of an industrialist and from other state who has set his factory in 2010 and has a domicile certificate of the state. He is ready to pay the entire amount in 4 years if required. He does not own a house in Hyderabad city limits but his wife owns a flat in Hyderabad. His date of birth is 11<sup>th</sup> Nov 1980.
- A. Do not allot flat
  - B. Refer to the Chairman
  - C. Refer to the President
  - D. Allot flat
23. Mrs. Gouri Dutta, aged 45 years, is wife of an ex-serviceman. She has been staying in rented house in Hyderabad for last 10 years. She is having certificate of domicile of the State. She is not employed anywhere. She is ready to pay the entire amount in 10 years.
- A. Do not allot flat
  - B. Refer to the Chairman
  - C. Refer to the President
  - D. Allot flat
24. Ms. Rima Mohanty is daughter of a renowned freedom fighter from another state. She is domiciled in the state and employed in the Town Council of Hyderabad for last 6 years. She can pay the entire amount in 5 years. She has completed 34 years on 10<sup>th</sup> Dec, 2014. She does not own a house in Hyderabad.
- A. Do not allot flat
  - B. Refer to the Chairman
  - C. Refer to the President
  - D. Allot flat
25. Maganlal is a 38 years' old senior clerk in a local builder's office in Hyderabad. He has put in service of 13 years but still does not own a house. He has produced domicile certificate and is ready to pay the entire amount in 8 years. He is nephew of freedom fighter Jaganlal who stays in a nearby village.
- A. Do not allot flat
  - B. Refer to the Chairman
  - C. Data inadequate
  - D. Allot flat

26. Mrs. Divya Lahiri, a domicile of the state and a married woman of 36 years, has been running a beauty parlour in the city since 4th March 2012. Her husband is employed in a nearby city but both of them do not own a house in Hyderabad. She can pay the entire amount in 5 years.

- A. Do not allot flat
- B. Refer to the Chairman
- C. Data inadequate
- D. Allot flat

A family consists of seven members P, Q, R, S, T, U, V. There are three married couples. Q is an engineer and father of T. U is grandfather of T and is a contractor. R is daughter-in-law of S who is a nurse by occupation. V is T's uncle who is a professor. There is one student, one home maker, and one doctor in the family. The student is unmarried and R is the sister-in-law of Q.

27. Who is R's husband?

- A. V
- B. Q
- C. T
- D. R

28. Who is T's aunt?

- A. S
- B. P
- C. U
- D. None of the above

29. What is the profession of P?

- A. Home maker
- B. Nurse
- C. Doctor
- D. either (A) or (C)

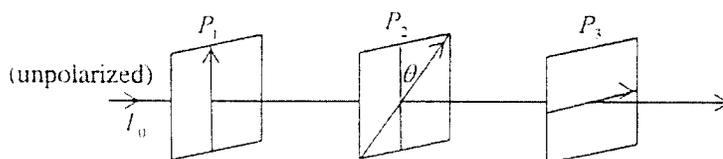
30. Which of the following are married couples?
- A. PV; QR, US
  - B. VT, PQ, US;
  - C. PQ, RV, US;
  - D. None of the above
31. Which of the following is definitely a group of female members?
- A. PRST
  - B. PRT
  - C. PRS
  - D. None of the above
32. A box of twenty pens has an average cost of Rs. 22 per pen. There are eleven red pens having an average cost equal to the average cost of the pens in the box. There are seven blue pens having an average cost of Rs. 20 per pen. What is the average cost of the two green pens?
- A. Rs. 29
  - B. Rs. 25
  - C. Rs. 21
  - D. None of the above
33. A rectangular sheet of length 10 cm is rolled into a cylinder. The breadth of the sheet is 5cm. What is the curved surface area of such a cylinder?
- A.  $\pi \times 10 \times 5 \text{ cm}^2$
  - B.  $\pi \times 100 \text{ cm}^2$
  - C.  $\pi \times 25 \text{ cm}^2$
  - D. None of the above
34. If BOMBAY is written as MYMYMY, how will TAMILNADU be written in that code?
- A. TIATIATIA
  - B. IATIATIAT
  - C. MNUMNUMNU
  - D. None of the above

35. Find the remainder when  $1201 \times 1203 \times 1205 \times 1207$  is divided by 6.
- A. 3
  - B. 4
  - C. 1
  - D. 5
36.  $\frac{4}{5}$  of a number exceeds its  $\frac{2}{3}$  by 8. The number is
- A. 30
  - B. 60
  - C. 90
  - D. None of these
37. A three digit non-zero number 'abc' in base 5, when converted to base 7, becomes 'cba'. Which of the following is necessarily true?
- A. a must be 2
  - B. c must be 2
  - C. b must be 0
  - D. None
38. If the radius of a sphere is doubled, then its volume is increased by :
- A. 100%
  - B. 200%
  - C. 700%
  - D. 800%
39. A family has two children. What is the probability that both children are girls given that one of the children is a girl?
- A.  $\frac{1}{4}$
  - B.  $\frac{1}{3}$
  - C.  $\frac{2}{3}$
  - D.  $\frac{1}{2}$
40. The HCF of two numbers is 12 and their difference is also 12. The numbers are
- A. 66, 78
  - B. 94, 106
  - C. 70, 82
  - D. 84, 96

## PART II

Stream: Neuroscience (Mark the Booklet code A in OMR sheet. If you are attempting Cognitive Science, proceed further down to that section)

41. Consider three polarizer's P<sub>1</sub>, P<sub>2</sub> and P<sub>3</sub> placed along an axis as shown in the figure.

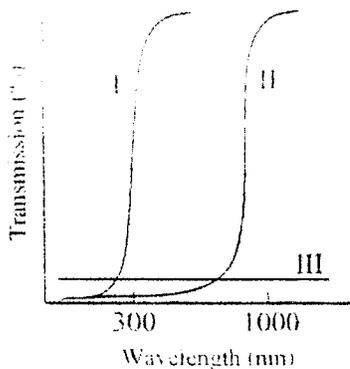


- A. 0  
 B.  $I_0/2$   
 C.  $I_0 \sin^2(2\theta)/8$   
 D.  $I_0 \cos^2(\theta)/4$
42. Four equal point charges are kept fixed at the four vertices of a square. How many neutral points (i.e. points where the electric field vanishes) will be found inside the square?
- A. 1  
 B. None  
 C. 4  
 D. Many
43. If we did not have atmosphere
- A. Day time sky would be perceived as white because of strong sunlight  
 B. Day time sky would be perceived as yellow because of lack of scattering  
 C. Day time sky would be perceived as dark because of lack of scattering  
 D. Day time sky would be perceived as deep blue because of reflection from sea
44. Some bats are able to echo locate using ultrasound emitted by them. Time to return echo and frequency of echo are used to detect the following features of the target respectively.
- A. Distance and size  
 B. Distance and velocity  
 C. Velocity and size  
 D. Velocity and distance
45. A concave lens produces virtual image and yet we are able to see objects on the other side while looking through the concave lens because
- A. Retina is concave  
 B. Virtual image can fall on the retina because of special property of rods and cones.  
 C. The cornea and lens of the eye have power  
 D. It is an illusion and the image does not fall on the retina

46. A sinusoid,  $10\sin(100\pi t)$  is passed through a linear system. Which of the following cannot be an output of that system?

- A.  $10\sin(100\pi t + \pi)$
- B.  $20\sin(100\pi t)$
- C.  $10\sin(200\pi t)$
- D.  $10\cos(100\pi t)$

47. The experimentally measured transmission spectra of metal, insulator and semiconductor thin films are shown in the figure. It can be inferred that I, II and III correspond, respectively, to



- A. insulator, semiconductor and metal
- B. semiconductor, metal and insulator
- C. metal, semiconductor and insulator
- D. insulator, metal and semiconductor

48. If velocity of an object moving on a plane is given by  $v = 2y+2$  where  $y$  is constrained as  $y = x^2 - 2x$ , what will be the value of  $x$ , when the object has zero velocity?

- A. 2
- B. 1
- C. -1
- D. -2

49. If  $\mathbf{e} = [1 \ -2 \ 3]$  and  $\mathbf{v} = [4 \ 2 \ 0]$  are directions of an electric field and velocity of an electron, respectively, at a location, what is the angle between them in degrees?

- A. 180
- B. 0
- C. 90
- D. 45

50. If  $x=1+j$  and  $y=2+j$ , where  $j$  denotes root of  $-1$ , that is imaginary, what is  $xy$ ?
- A.  $2+3j+j^2$
  - B.  $3+2j+j^2$
  - C.  $1+3j$
  - D.  $3+1j$
51. If the position of the particle at time is described by coordinates  $(\sin(\omega t), \cos(\omega t))$  for some non-zero  $\omega$ , what is the shape of the trajectory?
- A. Straight line
  - B. Parabola
  - C. Circle
  - D. Point
52. A tuning fork has a resonant frequency of 330Hz. On a planet where the density of atmosphere is less it is used to excite a column of air in a tube? A microphone is used to record the sound. What will be the frequency when it is played back on earth using the same recording system? (velocity of sound on earth = 330m/sec, velocity of sound on the planet = 660m/sec)
- A. 660Hz
  - B. 330Hz
  - C. 165Hz
  - D. None of the above
53. Which is a function whose differential is itself?
- A.  $\tan(x)$
  - B.  $x$
  - C.  $\sin(x)$
  - D.  $e^x$
54. What is the value of  $g(f(4))$ ?
- i.  $f(x) = \sqrt{x+2}$
  - ii.  $g(x) = 4x+1$
- A. A 104
  - B. 17
  - C. 14
  - D. 25

55. A capacitor  $C$  has a voltage  $V$  across it. Then the capacitor  $C$  is connected to a capacitor  $C/2$  in parallel. What is the voltage across them?
- A.  $2V/3$  Volts
  - B.  $3V/2$  Voltss
  - C.  $V/2$  Volts
  - D.  $V/3$  Volts
56. In the resting state a neuron is at a negative potential with respect to the outside. When stimulated this membrane becomes permeable to  $K^+$ . Potassium ion flows out because of
- A. Electrical potential gradient
  - B. Drift
  - C. Diffusion and electrical potential gradient
  - D. Diffusion
57. An voltmeter measures 1V across two resistances in parallel. One of the resistances is 3 times the other. The combined current through the resistances is 4mA. What is the current through the higher resistance?
- A.  $1/4$  mA
  - B.  $3/4$  mA
  - C. 3 mA
  - D. 1mA
58. If  $y = x^4 - 2x + 3$ , then  $d^2y/dx^2$  at  $x=2$  is
- A. 64
  - B. 56
  - C. 48
  - D. 24
59. Which of the following mammalian cells do not have a nucleus?
- A. Red blood cells
  - B. While blood cells
  - C. Lymphocytes
  - D. Bone marrow cells
60. The gap between two neurons is called a
- A. dendrite
  - B. synapse
  - C. axon
  - D. impulse

61. Sodium ions are abundant in
- A. extracellular side of the neuronal membrane
  - B. intracellular side of the neuronal membrane
  - C. lysosome of the neuron
  - D. nucleus of the neuron
62. A drug called strychnine blocks the effects of glycine. Strychnine is ..... of the glycine receptor.
- A. agonist
  - B. antagonist
  - C. allosteric activator
  - D. competitive activator
63. What physical property of light is most closely related to the perception of colour?
- A. Wavelength
  - B. Amplitude
  - C. Reflection
  - D. Refraction
64. For visualizing fast electrophysiological response such as action potential in neurons, one needs a
- A. Polygraph
  - B. Cathode ray oscilloscope
  - C. Spectrophotometer
  - D. Confocal microscope
65. In Parkinson's disease, there is a predominant loss of dopaminergic neurons primarily in
- A. cerebellar cortex
  - B. substantia nigra
  - C. cerebral cortex
  - D. locus coeruleus
66. Which retinal cells are primarily responsible for nighttime vision?
- A. Cone cells
  - B. Rod cells
  - C. Pyramidal cells
  - D. Ganglionic cells

67. Of the following structures, state which one is unique to neurons.

- A. Nucleus
- B. Mitochondria
- C. Rough endoplasmic reticulum
- D. Synaptic vesicle

68. A region of the cerebrum called Broca's area is involved in

- A. production of speech
- B. perception of touch
- C. perception of colour
- D. perception of emotion

69. A peptide bond

- A. has a partial double bond character
- B. is made up of sulfur
- C. occurs most commonly in *cis* configuration
- D. is cleaved by agents that denature proteins, such as organic solvents and high concentrations of urea

70. A reporter gene

- A. acts as repressor
- B. allows gene expression to be readily measured
- C. enhances mRNA stability
- D. interacts with RNA polymerase

71. All the hormones of the adrenal cortex is synthesized from

- A. tyrosine
- B. glycoproteins
- C. cholesterol
- D. fats

72. The gallbladder

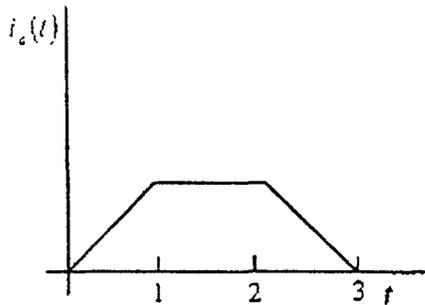
- A. produces bile
- B. is attached to the pancreas
- C. stores and concentrates bile
- D. produces cholecystokinin

73. The most abundant protein in human blood is
- A. transferrin
  - B. albumin
  - C. gamma globulin
  - D. hemoglobin
74. The fovea of the eye
- A. has the lowest light threshold
  - B. is the region of highest visual acuity
  - C. contains only red and green cones
  - D. contains only rods
75. The class of adrenal gland hormones that provide resistance to stress, produce anti-inflammatory effects, and promote normal metabolism to ensure adequate quantities of ATP is
- A. glucocorticoids
  - B. mineralocorticoids
  - C. androgens
  - D. catecholamines
76. Although the Seal and the Penguin both have streamlined, fish-like bodies with a layer of insulating fat, they are not closely related. This similarity results from
- A. homologous evolution
  - B. convergent evolution
  - C. adaptive radiation
  - D. coevolution
77. Most of the carbon dioxide that is transported in blood
- A. is dissolved in the plasma
  - B. is bound to hemoglobin
  - C. is in carbonic acid
  - D. is in bicarbonate ion

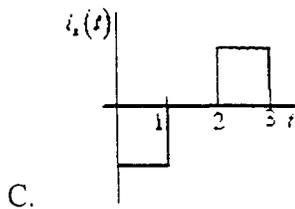
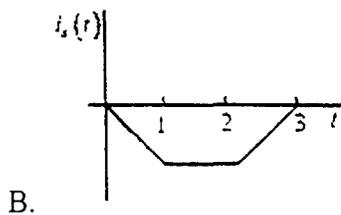
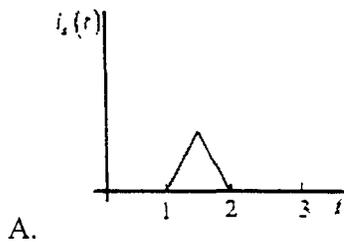
78. What is the force that is primarily responsible for stabilizing the tertiary structure of globular proteins?

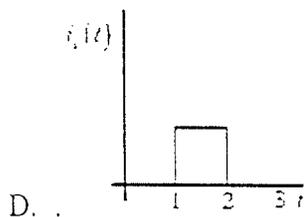
- A. Disulfide bonding
- B. Hydrophobic effect
- C. Hydrogen bonding
- D. Ionic interactions

79. A current  $i_p$  flows through the primary coil of a transformer. The graph of  $i_p(t)$  as a function of time  $t$  is shown in the figure below.



Which of the following graphs represents the current  $i_s(t)$  in the secondary coil?





80. The entropy of a system,  $S$ , is related to the accessible phase space volume  $\Gamma$  by  $S = k_B \ln \Gamma(E, N, V)$  where  $E$ ,  $N$  and  $V$  are the energy, number of particles and volume respectively. From this one can conclude that  $\Gamma$
- does not change during evolution to equilibrium
  - oscillates during evolution to equilibrium
  - is a maximum at equilibrium
  - is a minimum at equilibrium
81. Arthropods belong to
- Chordates
  - Non-chordates
  - Hemi-chordates
  - Proto-chordates
82. The multicellular animal that have no nervous system at all belongs to phylum:
- Porifera
  - Mollusca
  - Echinodermata
  - Rotifera
83. Light rays (visual stimulation) from the environment are focussed upon:
- Retina
  - Fovea
  - Blind spot
  - Optic nerve
84. Which of the following is the extranuclear part of a living cell:
- Chromatin
  - Nucleolus
  - Mitochondria
  - RNA

85. The correct order of Prophase 1 stages during Meiosis cell division is:

- A. Leptotene-Zygotene-Pachytene-Diplotene
- B. Pachytene-Leptotene-Diplotene-Zygotene
- C. Leptotene-Pachytene-Diplotene-Zygotene
- D. Leptotene-Pachytene-Zygotene-Diplotene

86. In biochemistry, an enzyme that removes phosphate groups from targets, is known as:

- A. Phosphatase
- B. Kinase
- C. Phosphorylase
- D. Reductase

87. Nucleus is absent in which of the following blood cells:

- A. Lymphocyte
- B. Monocyte
- C. Erythrocyte
- D. Neutrophils

88. The brain region involved primarily in spatial memory is:

- A. Cerebral cortex
- B. Hippocampus
- C. Amygdala
- D. Cerebellum

89. Which of the following is an aromatic amino acid:

- A. Alanine
- B. Methionine
- C. Glycine
- D. Tryptophan

90. Which of the following is not a genetic material:

- A. DNA
- B. RNA
- C. Protein
- D. None of the above

91. Of the 64 genetic codons, how many codons represent amino acids? [Provided that one represents START codon and three are STOP signals].
- A. 64
  - B. 61
  - C. 60
  - D. 20
92. Most common type of neuron present in your body is:
- A. Multipolar
  - B. Bipolar
  - C. Unipolar
  - D. All are equally distributed
93. Which of the following is an endocrine gland?
- A. Thyroid
  - B. Pituitary
  - C. Testis
  - D. All of the above
94. In a classic case of incomplete dominance of alleles, the genotypic ratio of the  $F_2$  generation is:
- A. 1:2:1
  - B. 1:1
  - C. 3:1
  - D. None of the above
95. Which of the following technique is used to separate biomolecules on the basis of their mass?
- A. Chromatography
  - B. Centrifugation
  - C. Electrophoresis
  - D. All of the above
96. Who is known as the father of "genetics"?
- A. Hugo de Vries
  - B. T. H. Morgan
  - C. Aristotle
  - D. Gregor Mendel

97. Sudden, heritable changes in the genetic material are called
- A. Hybridization
  - B. Translation
  - C. Mutation
  - D. Recombination
98. Best measure of a microscope is given by:
- A. Magnification
  - B. Resolution
  - C. Cost of lenses
  - D. All of the above
99. Which of the following represents Nernst equation? (Here symbols have their usual meaning)
- A.  $pK_a + pK_b = pK_w$
  - B.  $\Delta G^{0'} = -nF\Delta E^{0'}$
  - C.  $-nFE = -nFE^{\circ} + RT \ln Q$
  - D. All of the above are different forms of Nernst equation
100. One kilometre is equal to ..... decimetre
- A. 10
  - B. 100
  - C. 10000
  - D. 1000000

## PART II

Stream : Cognitive Science (Mark the booklet code B in OMR sheet)

41. In eye movement research, a fixation is a
- A. A small jerky movement
  - B. A smooth continuous movement
  - C. Movement to an optimal viewing position
  - D. A more or less stationary period
42. 'Congenital deafness' refers to:
- A. Hearing loss since birth
  - B. Hearing loss due to a neurological disease
  - C. Hearing loss due to an accident
  - D. All of the above
43. Which part of the brain controls eating, drinking, body temperature and provides a link between the brain and the endocrine system?
- A. Amygdala
  - B. Hypothalamus
  - C. Hippocampus
  - D. Parietal lobes
44. \_\_\_\_\_ scan measures brain activity through injecting a radioactive glucose that allows to observe the brain is functioning.
- A. EEG
  - B. TMS
  - C. PET
  - D. CAT

45. When we say that "information is processed in the brain contralaterally" we mean that:
- A. sensory information from one side of the body is initially processed by the opposite cerebral hemisphere
  - B. left-handed people process sensory information in the opposite cerebral hemisphere that right-handed people do
  - C. one hemisphere processes one type of information; the other, another type of information
  - D. sensory information is processed in one hemisphere, and motor information is processed in the other hemisphere
46. Cognitive processing influenced by an individual's expectations and knowledge rather than the available stimuli is called \_\_\_\_\_ processing.
- A. Serial
  - B. Parallel
  - C. Top-down
  - D. Bottom-up
47. In a movie scene, a plate on a table is blue in one shot then red in the next shot. If a viewer fails to notice the error, that is an example of which phenomenon?
- A. Inattentive blindness
  - B. Attentional blindness
  - C. Change blindness
  - D. Attentional blink
48. An EEG records
- A. the number of neurons in the brain.
  - B. electrical impulses from the brain.
  - C. chemical activity in the cranial nerves.
  - D. direct electrical stimulation and activation of the brain.
49. Which of the following is not a neurotransmitter?
- A. acetylcholine
  - B. cyclic AMP
  - C. noradrenaline
  - D. dopamine

50. \_\_\_\_\_ is a disorder in which there is lack of awareness in one visual field due to damage to the contralateral side of the brain.
- A. Visual neglect
  - B. Agnosia
  - C. Blindsight
  - D. Hemi motor neglect
51. \_\_\_\_\_ lobes control vision; \_\_\_\_\_ lobes control audition or hearing.
- A. Occipital;temporal
  - B. Frontal;parietal
  - C. Occipital;frontal
  - D. Occipital;parietal
52. The words “apple” and “ant” are:
- A. phonological cohorts of each other
  - B. semantic competitors of each other
  - C. cross-linguistic competitors of each other
  - D. phonological rhymes of each other
53. What does SOA stand for?
- A. Stimulus onset asynchrony
  - B. Stimulus offset asynchrony
  - C. Stimulus on acquisition
  - D. None of the above
54. Which brain area produces top down signals for top down control?
- A. Pre frontal cortex
  - B. Parietal lobule
  - C. Amygdala
  - D. None of the above
55. Which brain region has been implicated for conflict monitoring in stroop task?
- A. pre-SMA
  - B. ACC
  - C. Hypothalamus
  - D. Insular cortex

56. Which ERP effect is traditionally linked with expectation violation?
- A. N400
  - B. P300
  - C. LRP
  - D. Both a and b.
57. Who proposed the distinction between access and phenomenal consciousness?
- A. Ned Block
  - B. David Chalmers
  - C. Hillary Putnam
  - D. None of the above
58. Which task is widely used to study attentional orienting?
- A. Stroop task
  - B. Double step task
  - C. Stop signal task
  - D. Posner's cueing task
59. The seat of emotion is found in
- A. Limbic system
  - B. Forebrain
  - C. Reticular formation
  - D. Hindbrain
60. The most common cause of severe intellectual and emotional impairment in older individuals is
- A. Parkinson's disease
  - B. Multiple sclerosis
  - C. Alzheimers' disease
  - D. Senile psychosis
61. When an individual has difficulty in speaking, the condition is known as
- A. Wernicke's aphasia
  - B. Broca's aphasia
  - C. deep dyslexia
  - D. Autism

62. Where are Purkinje cells found?
- A. Spinal cord
  - B. Cerebral cortex
  - C. Cerebellar cortex
  - D. All of the above
63. A lesion in right optic tract would cause blindness in
- A. Right eye
  - B. Left eye
  - C. Right visual field
  - D. The temporal (peripheral) visual fields of both the right and left eyes
64. Which feature of brain activity is most strongly related to the local field potential and EEG ?
- A. Action potentials
  - B. Postsynaptic potentials
  - C. Cell bodies
  - D. Gap junctions
65. This multiple choice question is an example of which explicit memory measure:
- A. Cued recall
  - B. Free recall
  - C. Recognition
  - D. Savings
66. Visual sensory memory is also known as:
- A. Echoic memory
  - B. Working memory
  - C. Short-term memory
  - D. Iconic memory
67. \_\_\_\_\_ nervous system, which is part of the peripheral nervous system, controls voluntary bodily movements.
- A. Autonomic
  - B. Efferent
  - C. Sympathetic
  - D. Somatic

68. Because it has external features associated with the concept of dog, a wolf is perceived as a dog. This is an example of:
- A. centration
  - B. Equilibration
  - C. object permanence
  - D. Prototype
69. The school of psychology that emphasizes the “whole is greater than the sum of its parts” and that emphasizes the tendency to integrate separate stimuli into meaningful patterns is the school of
- A. Behaviorism
  - B. Gestalt psychology
  - C. Funtionalism
  - D. Structuralism
70. Foveal vision is limited to
- A. 1-2 degrees
  - B. 4-5 degrees
  - C. 10-12 degrees
  - D. none of the above
71. Which cognitive science discipline is generally thought to be unhelpful in providing an integrated approach to cognition:
- A. psychology
  - B. neuroscience
  - C. computer science
  - D. none of the above
72. Basic speech sounds are called
- A. morphemes
  - B. syllables
  - C. phonemes
  - D. syntax

73. The ability to speak two languages is referred as
- A. bi-languagism
  - B. fluency
  - C. bilingualism
  - D. none of the above
74. The storage capacity of long term memory is described as:
- A. Single item
  - B. About seven items
  - C. About seven volumes
  - D. Limitless
75. WAIS is the abbreviation of:
- A. Weschler Adult Intelligence Scale
  - B. Weiss Adult Intelligence Scale
  - C. Weschler Associated Intelligence Scale
  - D. Weschler Aptitude & Intelligence Scale
76. Impulses from the retina leave the eye via:
- A. lens
  - B. cornea
  - C. optic nerve
  - D. optic chiasm
77. "Cocktail party effect" involves the mechanism of:
- A. Focussed auditory attention
  - B. Divided auditory attention
  - C. Change blindness
  - D. None of the above
78. The brain accounts for 2% of body mass and \_\_\_\_\_% of the body's oxygen consumption.
- A. 2%
  - B. 20%
  - C. 50%
  - D. 80%

79. Although it is much smaller, the cerebellum has as many neurons and nearly as much surface area as the cerebrum. What sorts of disorders might you expect in a patient with cerebellar lesions?
- A. Trouble making coordinated movements like walking or reaching.
  - B. Auditory hallucinations of music or voices.
  - C. Spatial neglect of the contralateral hemisphere.
  - D. Difficulty suppressing socially inappropriate behaviors like swearing or gambling.
80. How is information from the eyes mapped onto visual cortex?
- A. The left eye sends information exclusively to the right hemisphere; the right eye sends information exclusively to the left hemisphere.
  - B. Both eyes send information from the right visual field to the left hemisphere and information from the left visual field to the right hemisphere.
  - C. The left eye sends information from the left visual field to the right hemisphere and from the right visual field to the left hemisphere; while the right eye sends information from the left visual field to the left hemisphere and from the right visual field to the right hemisphere.
  - D. Both eyes send information from the left visual field to the left hemisphere, and information from the right visual field to the right hemisphere.
81. Which of the following is not a commonly held hypothesis explaining our need to sleep?
- A. We sleep in order to restore our body after a hard day.
  - B. We sleep in order to consolidate material that we've learned
  - C. We sleep because our ancestors were at risk for being eaten at night, and sleeping kept us from encounters with predators at night
  - D. We sleep in order to secrete melatonin
82. Carolyn desperately wants to lose weight, but finds it so difficult to resist the temptation of snack foods. Her difficulty in losing weight probably stems from the powerful effects of \_\_\_\_\_.
- A. shaping
  - B. discrimination
  - C. delayed reinforcement
  - D. immediate reinforcement

83. Which symptom would a man with hippocampal damage most likely display:
- A. Poor working memory
  - B. Inability to form new procedural memories
  - C. Impaired memory of events that occurred prior to the damage
  - D. Inability to form new declarative memories
84. Which of the following can be used to determine a causal relationship between brain structure and behaviour?
- A. A brain scan of a schizophrenic man shows that the parts of the brain that process sensory information are significantly larger than in non schizophrenics
  - B. A brain scan of a schizophrenic man shows that the parts of the brain that process sensory information are significantly more active than in non schizophrenics
  - C. Neither a or b
  - D. Both a and b
85. Which of the following is incorrect?
- A. MRI measures brain structure
  - B. fMRI measures changes in blood oxygenation
  - C. EEG measures brain structure
  - D. CT measures brain structure
86. The region of the retina which contains the most cones and provides the most detailed information is the:
- A. iris
  - B. cornea
  - C. fovea
  - D. pupil
87. PET, MRI and CT are all examples of what?
- A. Laboratory experiments
  - B. Neuropsychological patients
  - C. Neuroimaging techniques
  - D. Behavioural genetics

88. What does an fMRI produce?
- A. computational image of the magnetic field surrounding the brain
  - B. A detailed case study of cognitive impairment based on computational models
  - C. A 3D computer generated image of the brain reflecting blood and oxygen flow produced during cerebral activity
  - D. A 2D image produced through radio-frequent waves in the magnetic field
89. CNS refers to which of the following?
- A. The cerebral nervous system consisting of the brain, spinal cord and retinas
  - B. The central nervous system consisting of the brain and spinal cord
  - C. The central nervous system consisting of the brain and motor neurons
  - D. The cerebral nervous system consisting solely of the brain
90. The conduction of a nerve impulse down the axon is called a(n)
- A. ion potential.
  - B. action potential.
  - C. resting discharge.
  - D. synapse.
91. Myopia is the condition of the eyes in which the person cannot
- A. focus on distant objects.
  - B. see very well in dim illumination.
  - C. focus on objects near the eyes.
  - D. see clearly because the lens is pigmented.
92. Heuristics are problem solving strategies which
- A. use a trial and error approach.
  - B. use random search strategies.
  - C. guarantee success in solving a problem.
  - D. reduce the number of alternatives.
93. The tendency for prior learning to inhibit recall of later learning is called
- A. encoding failure.
  - B. repression.
  - C. retroactive interference.
  - D. proactive interference.

94. Transforming incoming information into a usable form is the stage of memory called
- A. retrieval.
  - B. encoding.
  - C. storage.
  - D. organization.
95. Working memory is associated with which of the following?
- A. sensory memory
  - B. short-term memory
  - C. long-term memory
  - D. integrated memory
96. The tendency to fill in gaps in the perception of a figure is called
- A. sensory completion.
  - B. closure.
  - C. figure-ground.
  - D. continuation.
97. Irrational and very specific fears that persist even when there is no real danger to a person are called
- A. anxieties.
  - B. dissociation's.
  - C. phobias
  - D. obsessions.
98. The presentation of an aversive stimulus or the removal of a positive stimulus are both examples of
- A. negative reinforcement.
  - B. punishment.
  - C. positive reinforcement.
  - D. secondary reinforcement.
99. Neurons are made up of dendrites, a soma, and
- A. axons.
  - B. axles.
  - C. atoms.
  - D. axes.

100. Seeing out of the corner of your eye, often important in sports activities and driving, is called
- A. tunnel vision.
  - B. peripheral vision.
  - C. astigmatism.
  - D. feature detection.