

ENTRANCE EXAMINATIONS – 2020

(Ph.D. Admissions - January 2021 Session)

Ph.D.(Cognitive Science)

4-99

Marks: 70

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 has 35 and Part - II has 35 objective type questions of one mark each.

c. Part I is to be answered by all candidates. There are two sets of questions for part II corresponding to the two specialities: Neuroscience and Cognitive Science. **Answer ONLY ONE of the sets corresponding to your speciality of interest.** Please note that Part I is mandatory. The option is only in Part II.

d. The speciality name and code is mentioned in the beginning of each set in part II. Mark the booklet code for the stream in the OMR sheet. Booklet code A for 'Cognitive Science'. Booklet code B for 'Neuroscience'. Please answer questions corresponding to only one of the specialities.

e. There is no negative marking.

f. Answers are to be marked on the OMR answer sheet following the instructions provided there upon.

g. Hand over the OMR answer sheet at the end of the examination to the Invigilator.

h. 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**Mandatory for all candidates**

1. What is the opposite of Exodus?

- A. Influx
- B. Homecoming
- C. Return
- D. Restore

2. Which sentence best expresses the following in passive voice?

They greet me cheerfully every morning

- A. Every morning I was greeted cheerfully
- B. I am greeted cheerfully by them every morning
- C. I am being greeted cheerfully by them every morning
- D. Cheerful greeting is done by them every morning to me

3. Esha is twelve years old. For three years, she has been asking her parents for a dog. Her parents have told her that they believe a dog would not be happy in an apartment, but they have given her permission to have a bird. Esha has not yet decided what kind of bird she would like to have.

Find the statement that must be true according to the given information.

- A. Esha's parents like birds better than they like dogs.
- B. Esha does not like birds
- C. Esha and her parents live in an apartment

- D. Esha and her parents would like to move
4. What is the meaning of the idiom "to drive home"?
- A. To find one's origins
 - B. To emphasise
 - C. To return home
 - D. back to original position
5. Select the pair of words that have the same relationship as:
- Pain:Sedative
- A. comfort:stimulant
 - B. grief:consolation
 - C. trance:narcotic
 - D. ache:extraction
6. Find the correctly spelt word
- A. beaurocracy
 - B. rendezvuos
 - C. manoeuvre
 - D. pronounciation
7. If A is the brother of B; B is the sister of C; and C is the father of D, how D is related to A?
- A. nephew
 - B. sister
 - C. brother
 - D. son

8. Two bus tickets from city A to B and three tickets from city A to C cost Rs. 77 but three tickets from city A to B and two tickets from city A to C cost Rs. 73. What are the fares for cities B and C from A ?
- A. Rs. 4, Rs. 23
 - B. Rs. 13, Rs. 17
 - C. Rs. 15, Rs. 14
 - D. Rs. 17, Rs. 13
9. If South-East becomes North, North-East becomes West and so on. What will West become?
- A. North-East
 - B. North-West
 - C. South-East
 - D. South-West

Directions: Read the passage and answer questions 10-15.

It is impossible to approach the question of overpopulation apolitically, because, not surprisingly, demographic patterns are dissimilar around the world, and questions of religion, culture, government, and degree of industrial development affect these patterns. In industrialized nations, birthrates are, for the most part, lower than death rates. But in Asia and Africa, many countries have annual growth rates of 2.5 to 3.5 per cent. The ability of most of these rapidly increasing populations to find food, water, shelter, and warmth is diminished as the population increases; people are forced to try to grow food and raise livestock on marginal land, which only exacerbates problems of erosion and deforestation. Concerns about air and water pollution are ignored in the scramble for food and fuel, with the result that as the population grows, the land is less able to sustain those already living on it. Pressure on already depleted natural resources could result in fundamental changes to local or even global ecosystems, changes that may be permanent. In order to keep environmental damage from escalating to the point at which it is irreversible, industrialized nations should at least offer support to undeveloped countries in the form of education about sanitation and family planning, and ideally should begin work on the long-range goal of worldwide population stability.

10. The primary purpose of this passage is to
- A. point out that a potentially disastrous mistake was made when world leaders failed to take political responsibility for the problems of overpopulation
 - B. argue that technology could be developed to counteract much of the environmental damage that has already taken place
 - C. assert that overpopulation causes environmental damage, and suggest that industrialized nations take an active role in alleviating such damage
 - D. analyze the ways in which overpopulation affects the environment, and recommend international legislation that would force nations to take action.
11. With which of the following statements would the author most likely agree?
- A. no country's citizens should be allowed unlimited reproductive freedom
 - B. problems of overpopulation might be solved if society were properly managed, but the idea of a properly managed society is politically naïve
 - C. some of the problems associated with overpopulation may produce effects that are irreversible
 - D. industrialized nations should share some of their agricultural abundance with developing nations
12. The author mentions which of the following as a factor influencing a country's demographic patterns?
- A. the level of agricultural production
 - B. the degree to which the climate has changed over time
 - C. high rates of over-consumption
 - D. the quality of its natural resources

13. Which of the following is NOT an example of a kind of environmental degradation mentioned specifically by the author?
- A. a livestock owner overgrazes his land, allowing the soil to be adversely affected by wind and rain
 - B. an old factory does not comply with federal regulations on noise pollution , thereby diminishing the quality of life for those near the factory
 - C. on the outskirts of a small town, people scavenging for firewood cut down one of the few remaining stands of trees in the area.
 - D. when a city expands beyond its sewer lines, outlying residents dispose of waste in a nearby stream
14. The author points out that in industrialized nations
- A. population remains stable and unchanged
 - B. population tends to increase
 - C. population tends to decrease
 - D. population trends tend to remain unpredictable
15. According to the author in undeveloped nations
- A. population remains stable and unchanged
 - B. population tends to increase
 - C. population tends to decrease
 - D. population trends tend to remain unpredictable
16. In statistics quite often one can assume the data to be normally distributed because?
- A. Law of large numbers

- B. Because of Binomial theorem
- C. Gaussian distribution underlies the physics of systems
- D. Because we use normal people as subjects most of the time
17. Six persons are playing a game around a table. Jack is facing Roja who is to the left of Manoj and to the right of Venkat. Manoj is to the left of Lakshmi. Rakesh is to the left of Venkat. If Lakshmi exchanges her seat with Rakesh and Venkat exchanges with Roja, who will be sitting to the left of Lakshmi?
- A. Manoj
- B. Rakesh
- C. Roja
- D. Jack
18. How many solutions may the equation $(x+2)^3 = 6x^2 - 4$ have?
- A. One
- B. Two
- C. Three
- D. Four
19. The total number of students in a school is 4800, out of which 60% are girls. What is the total number of boys in this school?
- A. 1920
- B. 1980
- C. 1910
- D. 1930

20. If $C = 3$ and $BASIS = 50$, then what will be the code for COVER?

A. 36

B. 63

C. 65

D. 56

21. What number should come next in this given series: 1000, 200, 40, —?

A. 8

B. 10

C. 15

D. 20

22. If 453945 stands for DECIDE, then decode 8978.

A. BHEE

B. HIGH

C. GHEE

D. CDEH

23. If 123 stands for 987, then 234 stands for:

A. 876

B. 875

C. 768

D. 886

24. If $2 = 5$, $4 = 18$, $6 = 39$, then how 10 will be coded?

A. 45

- B. 81
- C. 100
- D. 105

25. Sukumar walked 40 meters towards North, took a left turn and walked 20 meters. He again took a left turn and walked 40 meters. How far and in which direction is he from the starting point?

- A. 20 meters West
- B. 30 meters East
- C. 40 meters North
- D. 50 meters South

26. A fruit seller had some oranges. He sells 40% of oranges and still has 420 oranges. Originally, he had:

- A. 588 oranges
- B. 600 oranges
- C. 672 oranges
- D. 700 oranges

27. 25% of 25% of a quantity is x% of the quantity where x is:

- A. 6.25%
- B. 12.5%
- C. 25 %
- D. 50%

28. 66 cubic centimetres of gold is drawn into a wire 1 mm in diameter. The length of the wire in metres will be:

- A. 84
- B. 168
- C. 336
- D. 90

29. Two cards are drawn, one after the other but without replacement, from a standard deck of 52 cards. What is the probability that both cards are hearts?

- A. 0.06
- B. 0.5
- C. 0.6
- D. 1

30. You are interested in how smoking affects brain oxygen level in humans, and you have designed one experiment for studying this effect. The brain oxygen level will be your:

- A. Independent variable
- B. Dependent variable
- C. Linear variable
- D. Exponential variable

31. Which one of the following is an example of "post-hoc test"?

- A. Student's t-test
- B. Least Significant Difference test
- C. Chi-square test
- D. Regression analysis

32. Pick up the correct answer after reading the following statement and conclusions:

Statement: Ronnie is the only son of Sam and Maria.

Conclusions:

- I. Sam and Maria have one son.
- II. Ronnie has one sister.

- A. Only conclusion I is valid.
- B. Only conclusion II is valid.
- C. Either conclusion I or II is valid.
- D. Neither conclusion I nor II is valid.

Read the following passage carefully and answer the following three questions (Ques. No. 33-35)

There is some controversy about the percentage of population below the poverty line in India. The criteria for the poverty line are based on a person's nutritional requirements in terms of calories. It is assumed that the minimum nutritional requirement per person per day in rural areas is 2400 calories, where as it is 2200 calories in urban areas. If the household is unable to bear the expenditure for this level of nutrition, it is categorized as below the poverty line. There is also a view that along with calories the amount of protein intake be treated as a criterion as it is related to the physical energy, mental alertness and resistance to infections.

33. Many Indians who are below the poverty line get necessary amount of proteins. Choose:
- A. If the inference is definitely true
 - B. If the inference is probably true
 - C. If the data are inadequate
 - D. If the inference is probably false

34. People well above the poverty line are less likely to suffer from infections. Choose:

- A. If the inference is definitely true
- B. If the inference is probably true
- C. If the data are inadequate
- D. If the inference is probably false

35. In other countries, there is no controversy about defining the poverty line. Choose:

- A. If the inference is definitely true
- B. If the inference is probably true
- C. If the data are inadequate
- D. If the inference is probably false

PART - II

Speciality: Cognitive Science (Mark the Booklet code A in OMR sheet)

**PLEASE ANSWER THIS SECTION ONLY IF YOU WISH TO APPLY FOR
PHD COGNITIVE SCIENCE**

36. Which of the following hypotheses/models connects bilingualism, linguistic context and executive control?

- A. Adaptive control hypothesis (Green & Abutalebi, 2013)
- B. Scaffolding theory (Park & Reuter-Lorenz, 2009)
- C. Dual mechanisms of control (Braver, 2012)
- D. Revised Hierarchical Model (Kroll and Stewart, 1994)

37. Folk, Remington and Johnson (1992) pioneered a paradigm - called the contingent capture paradigm - to examine top-down control on attention orienting. Which of the following findings is consistent with the original predictions of contingent-capture hypothesis?
- A. Cueing effects for onset-cues with onset-targets, but not for colour-singleton cues with colour -singleton targets
 - B. Cueing effects for colour-singleton cues with colour -singleton targets, but not for onset cues with onset targets
 - C. Cueing effects for onset-cues with onset-targets, but not for onset cues with colour -singleton targets
 - D. Cueing effects for neither onset-cues with onset-targets nor for colour-singleton cues with colour -singleton targets
38. Which of the following philosophers of mind was a proponent of the mind-brain identity theory?
- A. Thomas Nagel
 - B. Rene Descartes
 - C. Donald Davidson
 - D. JJ Smart
39. A study looking at the correlation between second language (L2) proficiency and executive control as measured through stroop effect finds a positive correlation of 0.9. What does this indicate?
- A. As L2 proficiency increases, stroop effect decreases, executive control ability decreases
 - B. As L2 proficiency increases, stroop effect decreases, executive control ability increases
 - C. As L2 proficiency increases, stroop effect increases, executive control ability increases
 - D. As L2 proficiency increases, stroop effect increases, executive control ability decreases
40. The dorsal stream in visual processing ...
- A. Projects to parts of the brain primarily involved in face recognition

- B. Projects to parts of the brain involved in line and edge detection
- C. Projects to regions of the brain that appear to be involved in the analysis of information involved in the position and movement of objects
- D. Projects to regions of the brain that appear to be involved in pattern discrimination and object recognition

41. Which of the following theories/models proposed that attentional selection necessarily involves planning an eye movement to the to-be-attended location?

- A. Biased competition model
- B. spotlight model
- C. dual-stream model of visual processing
- D. pre-motor theory

42. A single white disc appears at one of the two empty placeholders beside a fixation cross. The participant is asked to make an eye movement to the location opposite to the single white disc. What type of task is this?

- A. Localisation
- B. Anti-saccade
- C. Discrimination
- D. Search

43. Distractor suppression in a visual search task is quantified by:

- A. Slower RT in the presence of an irrelevant singleton
- B. Faster RT in the presence of an irrelevant singleton
- C. no responses on trials with irrelevant singleton
- D. distractors are never suppressed in visual search

44. In a task, participant A is asked to press LEFT shift key when they see a blue circle and press RIGHT shift key when they see a red circle. Responses are faster when the blue circle appears on the left/the red circle appears on the right compared to when the blue circle appears on the right/red circle appears on the left. This is because:

- A. responding to blue circles is easier than responding to red circles
- B. Blue colour is more easily associated with the left direction than red
- C. the colour of the circles activate specific responses
- D. the locations of the circles activate spatially compatible responses

45. Superior colliculus plays a key role in which of the following processes?

- A. Eye movement control
- B. Emotion regulation
- C. working memory encoding
- D. speech production

46. According to the signal suppression hypothesis (Sawaki and Luck, 2010), the ERP component Pd signifies what?

- A. suppression of irrelevant distracters
- B. suppression of negative emotions
- C. suppression of irrelevant language
- D. suppression of memory

47. Which one of the following is the phonological onset cohort of rose in English?

- A. red
- B. rope

C. hose

D. jasmine

48. According to Chalmers the 'hard' problem for consciousness is:

A. Understanding which regions of the brain are associated with consciousness

B. Understanding how information is shared between modular neural and cognitive systems

C. Understanding the interactions between different cognitive systems

D. Understanding how neural or cognitive processes give rise to phenomenal conscious experience

49. A patient with a brain injury is having trouble understanding spoken words and sentences. She often says things that follow normal sentence structure but don't have any real meaning. What is she most likely experiencing?

A. Global aphasia

B. Wernicke's aphasia

C. Anomic aphasia

D. Broca's aphasia

50. Which of the following is a major feature of Chomsky's nativist theory of language acquisition?

A. Infants can distinguish all the sounds of the world's languages at birth.

B. Children learn words by associating sounds with contexts.

C. Innate mechanisms guide the selection of rules for learning any language.

D. There is a critical period for learning language in early childhood.

51. What is the average time taken to initiate a saccade in humans?

- A. About 0.02 s
- B. About 0.2 s
- C. Greater than 0.5 s
- D. Greater than 1 s

52. Global features are processed faster than local features in an object. This global precedence effect is mostly seen in which paradigm?

- A. Posner cueing
- B. Visual search
- C. Navon
- D. RSVP

53. In the classic additional singleton paradigm introduced by Jan Theeuwes in 1992, participants had to search for a green diamond. Sometimes, a red circle was presented. Participants were slower finding the target in the presence of the red circle. What does this finding indicate:

- A. top-down control based on task goals
- B. Bottom-up capture by the red circle
- C. Bottom-up capture by the green target
- D. probability-learning of target location

54. At what stage does filtering occur in early selection models of attention?

- A. Before perceptual processing
- B. After semantic processing

- C. Before semantic processing
- D. At every stage

55. How many levels does the perceptual awareness scale (PAS) proposed by Ramsøy and Overgaard (2004) to measure subjective awareness of unconscious stimuli have?

- A. 2
- B. 3
- C. 4
- D. 7

56. Which of the following aspects of introspective psychology did behaviourism object to?

- A. Introspective psychology claimed to be studying behaviour
- B. Introspective psychology claimed to be studying "inner" psychological states
- C. Introspective psychology claimed to be studying brain states
- D. Introspective psychology placed great emphasis on evidence and data

57. Which of the following paradigms uses the concept of binocular rivalry to present unconscious stimuli?

- A. backward masking
- B. forward masking
- C. continuous flash suppression
- D. object substitution masking

58. Which of the following frameworks suggested that even complex behaviour like language can be studied as a series of conditioned responses?

- A. Identity theories

- B. Behaviourism
- C. Functionalism
- D. Dualism

59. A participant is administered a task A while concurrently performing task B (this is the experimental condition). Task B requires the same cognitive resources as task A. A control condition is administered with only task A. Which of the following would you expect on task A in the experimental condition compared to the control condition?

- A. Impaired performance
- B. Equivalent performance
- C. Improved performance
- D. No difference

60. Property dualism closely resembles which of the following positions in philosophy of mind:

- A. Reductive physicalism
- B. Non-reductive physicalism
- C. Behaviorism
- D. Functionalism

61. According to Biederman's Recognition-by-components model of object recognition (Biederman, 1987), every object can be segmented into a set of basic sub-objects called as:

- A. objectons
- B. recons
- C. gluons
- D. compons

62. On a stop-signal task, a shorter SSRT implies:

- A. greater inhibitory control
- B. lesser inhibitory control
- C. SSD does not measure inhibitory control
- D. loss of inhibitory control

63. Saccades are grouped into three categories depending on their latencies: Latency < 80 ms; 80 ms < Latency < 130 ms; Latency > 130 ms. What are these population of saccades called as:

- A. regular, express, anticipatory
- B. express, anticipatory, regular
- C. anticipatory, express, regular
- D. anticipatory, regular, express

64. In rapid serial visual presentation two targets T1 and T2 are presented within a stream of stimuli. Accuracy in detecting T2 is impaired due to attentional blink. Curiously, AB is not observed when:

- A. T2 is a letter
- B. T1 is a letter
- C. T2 immediately follows T1
- D. Participants don't blink during T2

65. Who proposed the Chinese room argument in opposition to strong AI (Artificial Intelligence)?

- A. David Chalmers
- B. Daniel Dennett
- C. Hilary Putnam

D. John Searle

66. What is the face inversion effect?

- A. inability to distinguish between upright and inverted faces
- B. recognising inverted male faces is easier than recognising inverted female faces
- C. it is the disorder in which people's faces appear inverted
- D. recognising inverted faces compared to upright faces is much more difficult than doing the same for non-facial objects.

67. What were the three levels of analyses proposed by Marr (1982)?

- A. visual, auditory, tactile
- B. Computational, algorithmic, implementational
- C. neuroscientific, behavioural, cognitive
- D. economic, cultural, moral

68. What is the key difference between calculating the percentage of accurate responses vs. calculating d' using signal detection theory?

- A. Accuracy takes into consideration response bias, but d' does not.
- B. d' takes into consideration response bias, but accuracy does not.
- C. There is no difference
- D. Accuracy is calculated for discrimination tasks and d' for detection tasks

69. Participants are presented with four printed words and a spoken word referring to one of the printed words. It is typically seen that eye movements are biased towards the spoken word referent. What is the name of this paradigm?

- A. gaze cueing
- B. Visual world paradigm
- C. Oculomotor cueing
- D. pro- and anti-saccade

70. The electrical activity in the motor cortex just before the initiation of a voluntary movement is commonly called as:

- A. Movement potential
- B. Onset potential
- C. Initiation potential
- D. Readiness potential

PART - II

Speciality: Neuroscience (Mark the Booklet code B in OMR sheet)

**PLEASE ANSWER THIS SECTION ONLY IF YOU WISH TO APPLY FOR
PHD NEUROSCIENCE**

36. Hindbrain consists of the:

- A. Pons
- B. Cerebellum
- C. Medulla oblongata
- D. All of these

37. Which one of the following is an excitatory neurotransmitter?

- A. Glutamate

- B. Glycine
- C. GABA
- D. All of these

38. Which of the following is NOT a tool to study the human cognition?

- A. PET
- B. fMRI
- C. Electrophysiology
- D. X-rays

39. The symptoms of hyperkinesia, akinesia and bradykinesia are generally associated with:

- A. Parkinson's Disease
- B. Alzheimer's Disease
- C. Huntington's Disease
- D. Sleep disorders

40. Which of the following hormone is also known as N-acetyl-5-methoxytryptamine?

- A. Renin
- B. Melatonin
- C. Insulin
- D. Gastrin

41. Reconstruction of the daughter nuclei during mitosis occurs in

- A. Anaphase

- B. Telophase
- C. Prophase
- D. Metaphase

42. Which of the following are known as termination codons?

- A. UAG, AUG, AAU
- B. TAA, ATG, ACA
- C. CAG, GTT, UGA
- D. UAG, UAA, UGA

43. The synapse between the cell body and a dendrite is known as:

- A. Axosomatic
- B. Somatodendritic
- C. Dendrodendritic
- D. Axo-axonic

44. Northern blot hybridizations enables one to

- A. Detect specific RNAs
- B. Measure the activity of certain enzymes
- C. Analyze the protein of interest
- D. Modify the genomic sequence

45. Ribosome sizes are expressed by their rates of sedimentation during centrifugation as:

- A. rpm

B. rcg

C. S

D. g

46. The experiment by Meselson and Stahl demonstrated the:

A. DNA as the genetic material of living beings

B. RNA as the transcript product of DNA

C. Different forms of DNA

D. Semi-conservative replication of DNA

47. The Hardy–Weinberg equilibrium in a population can NOT be changed by:

A. Natural selection

B. Mutation

C. Founder effect

D. Outbreeding

48. The first step of a RT-PCR protocol involves:

A. The denaturation of double stranded DNA

B. Annealing of the forward and reverse primers

C. The conversion of RNA template into cDNA

D. Calculation of ΔC_t values

49. Convex lenses is used to correct

A. Hypermetropia

- B. Presbyopia
- C. Myopia
- D. Emmetropia

50. Most of the dry weight of the plants comes from

- A. Carbon dioxide in the air
- B. Sunlight
- C. Nutrients in the soil
- D. None of the above

51. In most neurons the synaptic vesicle release is mediated by Calcium entry through

- A. Ligand gated channels
- B. Voltage gated channels
- C. Neurotransmitter gated channels
- D. Sodium gated channel

52. A scientist discovers a fossil of a primate that is now extinct. Which of the following is true

- A. That primate is an ancestor of humans
- B. That primate cannot be an ancestor of humans
- C. That primate can be an ancestor of humans
- D. That primate is an ancestor of all non-human primates

53. An aqueous solution turns red litmus paper blue. What could be the pH of the solution?

- A. 4

B. 7

C. 8

D. 16

54. Bilipid membrane in a cell acts as a

A. Capacitor

B. Resistance

C. Inductor

D. Rectifier

55. Place cells are found in

A. Cerebellum

B. Cortex

C. Hippocampus

D. Pallium

56. Optogenetics is a technique by which we can

A. Activate or inactivate genes by using light

B. Modify DNA by light

C. Activate or inactivate cells by light

D. Modify genes by light

57. A popular model system that is used in neuroscience which has the least number of neurons and those neurons are identified is

- A. *Caenorhabditis elegans*
- B. *Drosophila melanogaster*
- C. *Apis dorsata*
- D. *Lymnaea stagnalis*

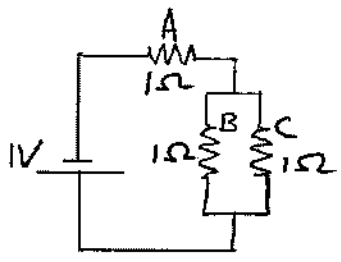
58. Fluorescent dyes are used in neuroscience because

- A. They are easy to attach to cell organelles
- B. They can be excited by lasers
- C. They produce bright colors while imaging
- D. They help avoid reflected light

59. Nissl bodies are

- A. Chromatin granules
- B. Part of mitochondria
- C. Rough endoplasmic reticulum
- D. Part of endosomes

60. What is the amount of current flowing through the resistor A?



- A. 0.33 A
- B. 0.5 A
- C. 0.67 A
- D. 1A

61. High frequency ultrasound is better than low frequency ultrasound for imaging when

- A. Deeper tissue and want better resolution
- B. Deeper tissue but low resolution is OK.
- C. Shallow tissue but do not want better resolution
- D. Shallow tissue and want better resolution

62. Jumping genes were first discovered in

- A. Maize
- B. Locust
- C. Drosophila
- D. Arabidopsis

63. Which of the following is the simplest amino acid?

- A. Tyrosine
- B. Phenylalanine

C. Glycine

D. Histidine

64. Pumping of molecules across the cell membrane is carried out by:

A. Lipid

B. Carbohydrate

C. Phosphorus

D. Protein

65. Across plasma membrane, when ions or solutes are moved against a concentration gradient using energy, the process is called:

A. Diffusion

B. Passive transport

C. Active transport

D. Regulated diffusion

66. Which of the following is called the powerhouse of a cell?

A. Endoplasmic reticulum

B. Mitochondria

C. Ribosome

D. Lysosome

67. Action potential results from:

A. Activation of sodium-potassium pump

B. Activation of glucose transporter

C. Opening of voltage-gated sodium channel

D. Opening of trehalose transporter

68. Mutations which do not cause functional change in the protein are known as:

A. Forward mutations

- B. Backward mutations
- C. Frameshift mutations
- D. Silent mutations

69. Action potentials are conducted more rapidly in:

- A. Small diameter axons than large diameter axons
- B. Large diameter axons than small diameter axons
- C. Unmyelinated axons than myelinated axons
- D. Shorter axons than lengthy axons

70. Thiamine deficiency leads to:

- A. Scurvy
- B. Beriberi
- C. Night blindness
- D. Pellagra

University of Hyderabad
Entrance Examinations - 2021

School/Department/Centre: Centre for Neural and Cognitive Sciences, School of Medical Sciences
Course/Subject: PHD Cognitive Science

Q. No.	Answer	Q. No.	Answer	Q. No.	Answer	Q. No.	Answer	Q. No.	Answer
Part I	Gener- al			50	C	Part II	Neuro- science		
1	A	26	D	51	B	36	D	61	D
2	B	27	A	52	C	37	A	62	A
3	C	28	A	53	B	38	D	63	C
4	B	29	A	54	C	39	A	64	D
5	B	30	B	55	C	40	B	65	C
6	C	31	B	56	B	41	B	66	B
7	A	32	A	57	C	42	D	67	C
8	B	33	D	58	B	43	B	68	D
9	C	34	A	59	A	44	A	69	B
10	C	35	C	60	B	45	C	70	B
11	C	Part II	Cognitive Science	61	C	46	D		
12	A	36	A	62	A	47	D		
13	B	37	C	63	C	48	C		
14	C	38	D	64	C	49	A		
15	B	39	D	65	D	50	A		
16	A	40	C	66	D	51	B		
17	D	41	D	67	B	52	C		
18	C	42	B	68	B	53	C		
19	A	43	B	69	B	54	A		

Q. No.	Answer	Q. No.	Answer	Q. No.	Answer	Q. No.	Answer	Answer
20	B	44	D	70	D	55	C	
21	A	45	A			56	C	
22	B	46	A			57	A	
23	A	47	B			58	D	
24	D	48	D			59	C	
25	A	49	C			60	C	

Signature: