

Entrance Examinations – 2021
Ph.D. Cognitive Science

Duration : 2 hours

Max. Marks : 70

Hall Ticket No.

INSTRUCTIONS FOR THE CANDIDATE

1. Write your Hall Ticket No. in the OMR Answer Sheet given to you. Also, write your Hall Ticket No. in the space provided above.
2. This Question paper consists of two parts : **Part – A** and **Part – B** with 35 Questions in each **Part**. OMR Answer sheet will be provided separately.
3. **Part – A** (Question no. 1-35) is to be answered by all candidates. There are two sets of questions for **Part-B** (Question no. 36-70) corresponding to the two streams. Answer only one set corresponding to the stream of your interest i.e. Cognitive Science or Neuroscience.
4. Candidates must indicate Booklet Code for **Part-B** in the **OMR** Answer Sheet as mentioned below :

Booklet Code 'A'	Cognitive Science stream
Booklet Code 'B'	Neuroscience stream

5. **Part – A** is mandatory and the option is only in **Part-B**.
6. Each question carries **One mark** and there is **no negative marking**.
7. Answers are to be marked on the OMR Answer Sheet following the instructions provided thereon.
8. Please handover the **OMR Answer Sheet** at the end of the examination to the Invigilator. You may take the Question Paper after the examinations is over.
9. No additional sheet will be provided. Rough work can be done in the Question paper itself.
10. Candidate should write and darken the correct Booklet Code for PART-B as mentioned above in the OMR Answer Sheet, without which the OMR will not be evaluated. The candidates defaulting in marking the Booklet Code for PART-B in the OMR answer sheet shall not have any claim on their examination and University shall not be held responsible and University reserves the right for not evaluating the OMR answer sheet.

PART – A**Mandatory for all candidates**

1. The nursing shortage in this country is a fake one, caused by the concentration of nurses in the geographical regions with the highest paid and most generous fringe benefits for nurses. In addition, the Indian Nursing Association has artificially worsened the shortage by encouraging nursing colleges to keep enrolments low in order to boost nurses' salaries to even higher levels.

All of the following statements, if true, would tend to weaken the argument above except:

- A. Although nurses are paid less in state A than in state B, there are 35% more nurses in state A than in state B.
- B. Nationwide, the salaries of nurses have risen at a slower rate than inflation over the last ten years.
- C. The number of students who earned degrees in nursing last year was almost double the number six years ago.
- D. Those areas of the country with the highest pay for nurses also have correspondingly higher living costs.
2. A bee takes 10 minutes to go to a flowerbed and come back to the hive. Bee dances in the hive to convey the distance from the hive to the flowerbed to other bees at a scale of 1 cm/km. What will be the length of the this bee's dance on returning, if the bee flies at a constant speed of 36km/hr?
- A. 6 cm
- B. 1.8 cm
- C. 3.6 cm
- D. 3 cm

3. Solve for x

$$9x = 3(12/x + 2)$$

- A. -2, 3
- B. -4, 1

- C. 2, 3
- D. 4, 1

4. Arrange to make a meaningful sentence in English:

- P in explaining the immense amount of variation
- Q the paramount importance of these considerations
- R which pigeons have undergone,
- S will likewise be obvious when we treat of selection

- A. QRPS
- B. QPRS
- C. RQSP
- D. PSRQ

5. In error-bar plots, the error bars are of the length corresponding to standard error of mean, because

- A. Standard deviation of the data is to be represented
- B. Central limit theorem
- C. The original data is normally distributed
- D. The data is limited in number.

6. If a unimodal distribution is right skewed, typically

- A. Mode will be to the larger than the median
- B. Mean and median have no relationship with each other
- C. The median will be larger than mean
- D. The mean will be larger than median.

7. abetting : thwarting is like
- A. facilitating : mentoring
 - B. prejudicial : uncolored
 - C. distributing : preventing
 - D. enfeebling : plodding
8. If we see a large difference in the means of measurements from two groups in our experiment, then we can say
- A. We can likely cluster the data points without knowing the groups they came from
 - B. We likely cannot cluster the data points without knowing the groups they came from
 - C. Their distributions are likely different
 - D. We cannot say anything about the similarity of their distribution.
9. Coefficient of determination (R^2) ranges from
- A. -1 to +1
 - B. 0 to -1
 - C. 0 to +1
 - D. 0 to 100
10. Which of the following is NOT a measure of dispersion?
- A. Variance
 - B. Standard deviation
 - C. Coefficient of variation
 - D. Regression
11. Rajat walked 20 m towards north. Then he turned right and walks 30 m. Then he turns right and walks 35 m. Then he turns left and walks 15 m. Finally, he turns left and walks 15 m. In which direction and how many metres is he from the starting position?
- A. 15 m west
 - B. 30 m east
 - C. 30 m west
 - D. 45 m east

12. What is the one-word substitute for "An extremely old person that behaves like a fool"?
- A. Imbecility
 - B. Senility
 - C. Dotage
 - D. Unconscious
13. Look at this series: 7, 10, 8, 11, 9, 12, What number should come next?
- A. 7
 - B. 12
 - C. 10
 - D. 13

The following passage refers to questions 14 through 16

Dolphins are regarded as the friendliest creatures in the sea and stories of them helping drowning sailors have been common since Roman times. The more we learn about dolphins, the more we realize that their society is more complex than people previously imagined. They look after other dolphins when they are ill, care for pregnant mothers and protect the weakest in the community, as we do. Some scientists have suggested that dolphins have a language, but it is much more probable that they communicate with each other without needing words. Could any of these mammals be more intelligent than man? Certainly, the most common argument in favour of man's superiority over them that we can kill them more easily than they can kill us is the least satisfactory. On the contrary, the more we discover about these remarkable creatures, the less we appear superior when we destroy them.

14. It is clear from the passage that dolphins
- A. don't want to be with us as much as we want to be with them
 - B. are proven to be less intelligent than once thought
 - C. have a reputation for being friendly to humans
 - D. are the most powerful creatures that live in the oceans
15. The fact that the writer of the passage thinks that we can kill dolphins more easily than they can kill us

- A. means that they are better adapted to their environment than we are
- B. shows that dolphins have a very sophisticated form of communication
- C. proves that dolphins are not the most intelligent species at sea
- D. does not mean that we are superior to them

16. One can infer from the reading that

- A. dolphins are quite abundant in some areas of the world
- B. communication is the most fascinating aspect of the dolphins
- C. dolphins have skills that no other living creatures have such as the ability
- D. dolphins have some social traits that are similar to those of humans

17. Following question consists of a statement, followed by two arguments numbered I and II. You have to decide which of the arguments is a 'strong' argument and which is a 'weak' argument.

Statement: Should India encourage exports when most things are insufficient for internal use itself?

Arguments:

- I. Yes. We must earn foreign exchange to pay for our imports.
- II. No. Even selective encouragement would lead to shortages.

Select:

- A. If only argument I is strong
- B. If only argument II is strong
- C. If neither I nor II is strong
- D. If both I and II are strong.

18. A class of girls stands in a single line. One girl is nineteenth in order from both the ends. How many girls are there in the class?

- A. 27
- B. 37
- C. 38
- D. 39

19. Rajiv is 7 ranks ahead of Sumit in a class of 39. If Sumit's rank is seventeenth from the last, what is Rajiv's rank from the start?

- A. 14th

- B. 15th
- C. 16th
- D. 17th

20. Find the word that best describes the relation as the first pair of words

Cricket : Bat :: Hockey : _?

- A. Field
- B. Stick
- C. Player
- D. Ground

21. Find the word that best describes the relation as the first pair of words

Rupee : India :: Yen : _?

- A. Turkey
- B. Bangladesh
- C. Japan
- D. Australia

22. In the following letter series, some of the letters are missing which are given in that order as one of the alternatives below it. Choose the correct alternative.

ba__cb__b__bab__

- A. acbb
- B. bacc
- C. bcaa
- D. cabb

23. In the following letter series, some of the letters are missing which are given in that order as one of the alternatives below it. Choose the correct alternative.

__aa__ba__bb__ab__aab

- A. aaabb
- B. babab
- C. bbaab

D. bbaa

24. Choose out the odd one.

- A. Giraffe
- B. Cow
- C. Zebra
- D. Hyena

25. Choose out the odd one.

- A. Greece
- B. Korea
- C. Spain
- D. Italy

26. Sukanya walks 14 metres towards West, then turns to her right and walks 14 metres, and then turns towards left and walks 10 metres. She again takes a left turn and walks 14 metres. What is the shortest distance (in metres) between her starting point and the present position?

- A. 24
- B. 10
- C. 28
- D. 38

27. Biman walks a distance of 3 km towards North, then turns to his left and walks for 2 km. He again turns left and walks for 3 km. At this point, he turns to his left and walks for 3 km. How many kilometres is he from the starting point?

- A. 5 km
- B. 2 km
- C. 1 km
- D. 3 km

28. Choose the most appropriate pair to fill in the blanks in the same order

Apart from his _____ towards music, Ray was also an _____ author.

- A. versatility, result
 - B. perfection, master
 - C. inclination, accomplished
 - D. success, product
29. Find the wrong number in the series:
1, 2, 6, 15, 31, 56, 91
- A. 31
 - B. 15
 - C. 36
 - D. 91
30. 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
31. In a row of boys, If A who is 10th from the left and B who is 9th from the right interchange their positions, A becomes 15th from the left. How many boys are there in the row ?
- A. 23
 - B. 31
 - C. 27
 - D. 28
32. In a family, there are six members A, B, C, D, E and F. A and B are a married couple, A being the male member. D is the only son of C, who is the brother of A. E is the sister of D. B is the daughter-in-law of F, whose husband has died. How is E related to C ?
- A. Sister
 - B. Daughter
 - C. Mother
 - D. Cousin

33. 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
34. Rakshit walked 20 m towards north. Then he turned right and walks 30 m. Then he turns right and walks 35 m. Then he turns left and walks 15 m. Finally he turns left and walks 15 m. In which direction and how many metres is he from the starting position?
- A. 15 m west
 - B. 30 m east
 - C. 30 m west
 - D. 45 m east
35. Lethargic : Vital :: Trite : ?
- A. Innovative
 - B. Lazy
 - C. Slug
 - D. Energetic

PART – B

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

36. Which philosophical viewpoint does Cartesian dualism refer to:
- A. All substances are physical in nature
 - B. All substances are mental in nature
 - C. There are two distinct kinds of substances: physical and mental
 - D. Mental events are reducible to the physical events
37. The subjective sensation of a stimulus is proportional to the logarithm of its intensity. What is this law called?
- A. Stevens law
 - B. Fitts law
 - C. Weber-Fechner law
 - D. Hick's law
38. Which of the following people are credited with spearheading the development of experimental psychology?
- A. Daniel Dennett and Thomas Nagel
 - B. William James and Wilhelm Wundt
 - C. Edmund Husserl and Immanuel Kant
 - D. Paul and Patricia Churchland
39. Which of the following is a major criticism of behaviourism?
- A. It does not allow for empirical observations

- B. It is restricted to studies on animals
 - C. It does not take into account subjective states of an individual
 - D. Behaviour is not externally verifiable by an independent observer
40. The school of psychology that emphasises that the “whole is greater than the sum of its parts” and that emphasizes the tendency to integrate separate stimuli into meaningful patterns is:
- A. Gestalt psychology
 - B. Behaviourism
 - C. Structuralism
 - D. Functionalism
41. Who proposed that attention acts a “glue” that binds basic visual features together leading to recognition?
- A. Michael Posner
 - B. Anne Treisman
 - C. Colin Cherry
 - D. Donald Hebb
42. Responses to a target in a visual search can be made faster through statistical learning. What does this mean?
- A. Responses to a target are faster if it is preceded by a number cue
 - B. Responses to a target are faster if the target is a number
 - C. Responses to a target are faster if it appears in the same location often
 - D. Responses to a target are faster if it is surrounded by number distractors
43. Biederman’s recognition-by-components model proposed that every object can be segmented into a set of basic sub-objects called as:
- A. gluons
 - B. geons
 - C. objectons

- D. deons
44. David Marr proposed three levels of analyses of information-processing. What are those levels?
- A. logical, analytical, metaphysical
 - B. philosophical, empirical, rational
 - C. computational, algorithmic, implementational
 - D. behavioural, motoric, mental
45. The approach to studying the mind formalised in the early days of cognitive revolution was inspired from which existing technology?
- A. Radio
 - B. Television
 - C. Computer
 - D. Camera
46. According to Broadbent's filter theory of attention, incoming information was filtered at which stage of processing?
- A. After the extraction of semantic properties
 - B. After the extraction of physical properties
 - C. Before the extraction of physical properties
 - D. Filter is applied on incoming information only in some individuals
47. A study looking at correlation between second language (L2) proficiency and executive control as measured through flanker effect finds a positive correlation of 0.9. What does this indicate?
- A. As L2 proficiency increases, flanker effect decreases, executive control ability decreases
 - B. As L2 proficiency increases, flanker effect decreases, executive control ability increases
 - C. As L2 proficiency increases, flanker effect increases, executive control ability

increases

D. As L2 proficiency increases, flanker effect increases, executive control ability decreases

48. In the Posner cueing paradigm, inhibition of return is marked by:

- A. RT on cue-valid trials < RT on cue-invalid trials
- B. RT on cue-valid trials > RT on cue-invalid trials
- C. no the stimulus-onset-asynchrony between cue and target onset
- D. cues followed by colour targets

49. What is the global precedence effect commonly observed using the Navon paradigm?

- A. Global features interfere with local processing, but local features do not interfere with global processing
- B. Local features interfere with global processing, but global features do not interfere with local processing
- C. Global and local features are completely independent
- D. Global and local features are processed similarly

50. Finding a red circle among green circles is easier than finding a green circle among green squares. Why?

- A. Because of colour saliency of the red circle when it is among green circles
- B. Red colour captures more attention than green colour
- C. Circles capture more attention than squares
- D. Most people like red colour more than green

51. Edward Tolman proposed that maze behaviour of rats can not be merely explained using stimulus-response associations which was the dominant behaviouristic approach. What concept did Tolman invoke to explain such phenomena?

- A. Mind-body associations
- B. Cognitive maps
- C. functionalism

- D. reinforcement learning
52. Which of the following philosophers of mind is associated with identity theories of the mind?
- A. Thomas Nagel
 - B. Alva Noe
 - C. Donald Davidson
 - D. JJ Smart
53. Who proposed the contingent-capture hypothesis using a modified version of the spatial cueing paradigm to examine top-down control on attention orienting?
- A. Folk, Remington and Johnston
 - B. Bayelier and Neville
 - C. Broadbent and Driver
 - D. Theeuwes
54. Who first proposed the Chinese room argument in opposition to strong AI (Artificial Intelligence)?
- A. John Searle
 - B. Daniel Dennett
 - C. Paul Churchland
 - D. David Chalmers
55. Yarus recorded eye movement of observers while viewing natural objects. Which one of the following were among his conclusions?
- A. People don't make saccades while viewing natural objects
 - B. Instructions do not play any role in eye movement pattern
 - C. Instructions play a big role in eye movement pattern
 - D. People's mood determines eye movement pattern

56. Peripheral cues used in studies of exogenous attention are said to capture attention reflexively when:
- A. they are not predictive of the target location
 - B. they are of a unique colour
 - C. they trigger eye movements towards their location
 - D. they are presented for a very short duration
57. What is the key difference between short-term memory (STM) and working memory (WM)?
- A. STM is mainly concerned with storage, WM is for manipulation of information
 - B. STM has less storage than WM
 - C. Retrieving from STM is faster than WM
 - D. People have higher STM capacity than WM capacity
58. The n-back task is typically used to test which aspect of cognitive functioning?
- A. Attentional orienting
 - B. Conflict resolution
 - C. Working memory
 - D. Anticipatory control
59. Green and Abutalebi (2013) proposed the adaptive control hypothesis which is about:
- A. Bilingualism, context and control
 - B. Emotion, executive control and psychological disorders
 - C. Twins adopted by different set of parents
 - D. Inhibitory control in children
60. Superior colliculus plays a key role in which of the following processes?
- A. Emotion regulation
 - B. Eye movement control
 - C. working memory encoding

D. speech production

61. Load theory of selective attention was proposed by Lavie as a resolution for which of the following debates?

- A. Feature-based vs. spatial attention
- B. Endogenous vs. Exogenous attention
- C. Conscious vs. unconscious attention
- D. Early vs. Late selection

62. Which of the following characterises "qualia"?

- A. It is only generated by specific objects
- B. It is unverifiable by external observers
- C. It can be objectively measured
- D. It can not be reported by the individual experiencing it

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

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

64. The technique of continuous flash suppression (CFS) used which of the following concepts to present information that the participants do not become aware of:

- A. Figure-ground illusion
- B. Binocular rivalry
- C. Mirror-neuron theory
- D. Lateral inhibition

65. Semantic memory is a type of:

- A. Non-declarative memory

- B. Declarative memory
- C. Working memory
- D. Short-term memory

66. Executive functions are considered to contain three main components: Inhibition, Shifting and Updating. Who proposed this model?

- A. Miyake and colleagues
- B. Braver and colleagues
- C. Cohen and colleagues
- D. Nakayama and colleagues

67. 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

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

69. 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

70. Which of the following is one of the main principles of pre-motor theory?

- A. Attention is only deployed on objects that are acted upon
- B. Motor responses generate a specific neural signal in the brain
- C. Attentional selection necessarily involves planning an eye movement to the to-be-attended location
- D. Actions are always preceded by an eye movement to the object being acted on

PART – B

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

36. Reversal potential related to a channel is determined by

- A. the concentration gradient of the ions conducted by the channel
- B. the voltage sensor for gating the channel
- C. capacitance of the membrane
- D. the density of voltage gated channels

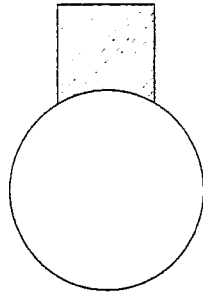
37. Fluorescent dyes are used in microscopy primarily because

- A. Different colored dyes can differentiate different structures
- B. Reflected light can be avoided
- C. It is easy to attach fluorescent dyes to different types of cells and organelles.
- D. Fluorescent dyes do not fade with time

38. If we start observing a car from Gachibowli that is 5km from Lingampally and was traveling at 30km/hr, how long will it take to reach Mehdipattinam that is 20km away from Lingampally.

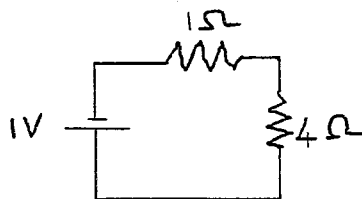
- A. 40 mnts
- B. 1hr
- C. 30 mnts
- D. 50 mnts

39. If in the figure, the straight edges of a square on which the disc is overlaid are of 1 unit length, and the radius of the disk is also of 1 unit length, what is the size of the hatched area?



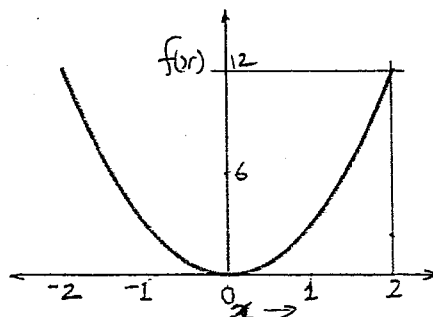
- A. $1 - \left(\frac{\pi}{6} + \frac{1}{2} \sqrt{\frac{3}{4}} \right)$
- B. $1 - \left(\frac{\pi}{6} - \frac{1}{2} \sqrt{\frac{3}{4}} \right)$
- C. $1 - \left(\frac{\pi}{6} - \sqrt{\frac{3}{4}} \right)$
- D. $1 - \left(\frac{\pi}{6} + \sqrt{\frac{3}{4}} \right)$

40. Which is the resistance that will have to endure maximum amount of heat, and the heat energy generation will be at the rate of



- A. 4Ω, 0.16W
- B. 4Ω, 0.32W
- C. 1Ω, 0.16W
- D. 1Ω, 0.8W

41. If the function $y=f(x)$ shown in the figure is a parabola, where will the line $y=2x$ intercept it other than at 0?



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

42. Which is the function $f(x)$ that satisfies $\frac{df(x)}{dx} = f(x)$.

- A. $\cos(x)$
- B. $\sin(x)$
- C. e^x
- D. $\ln(x)$

43. Which one of the following is the tool for study of cognitive neuroscience?

- A. fMRI
- B. ERP
- C. TMS
- D. All of these

44. The Krebs cycle occurs in

- A. Matrix
- B. Stroma
- C. Cytoplasm
- D. Nucleus

45. Which one of the following is a type of glial cell?

- A. Astrocytes
- B. Oligodendrocytes
- C. Microglia
- D. All of these

46. Nicotine is a direct agonist of
- A. GABA receptors
 - B. Acetylcholine receptors
 - C. Glycine receptors
 - D. Serotonin receptors
47. Anterograde transport of molecules in a neuron occurs from
- A. Soma to synapse
 - B. Axonal terminals to dendrites
 - C. Soma to dendrites
 - D. Axon to Soma
48. Neuronal membrane possess
- A. Capacitance
 - B. Resistance
 - C. Both
 - D. None of these
49. The release of neurotransmitters from the pre-synaptic membrane is regulated by
- A. Voltage-dependent sodium channels
 - B. Voltage-dependent calcium channels
 - C. Ligand-gated ion channels
 - D. All of these
50. Find the number of electrons transferred in the equation $\text{Cu(g)} + 2\text{Ag}^+(\text{aq}) \rightarrow \text{Cu}^{2+}(\text{aq}) + 2\text{Ag(s)}$.
- A. 4
 - B. 3
 - C. 2
 - D. 1
51. Which animal has the largest brain?
- A. African elephant
 - B. Modern human
 - C. Sperm whale
 - D. White dolphin
52. Graves' disease is associated with:

- A. Insufficiency of thyroid hormones.
 - B. Excess of thyroid hormones.
 - C. Insufficiency of corticosteroids.
 - D. Excess of growth hormones.
53. Which one of the following is responsible for the ejection of milk from mammary glands in mammals?
- A. Oxytocin.
 - B. Thyroxin.
 - C. Serotonin.
 - D. Melatonin.
54. Which one of the following functions is *not* served by the plasma proteins?
- A. Blood clotting.
 - B. Hormone binding and transport.
 - C. Oxygen transport.
 - D. Buffering capacity of blood.
55. An extraordinary ability that elephants possess is:
- A. Emission and detection of ultra high frequency sounds.
 - B. Emission and detection of ultra low frequency sounds.
 - C. Detection of changes in earth's magnetic field.
 - D. Possession of ultraviolet vision.
56. A neuroscientist stimulates a nerve fibre in the middle of an axon and records the propagation of the nerve impulse. Which one of the following observations is correct?
- A. Nerve impulse is travelling only in a direction towards cell body.
 - B. Nerve impulse is travelling only in a direction towards teleodendrons.
 - C. Nerve impulses are travelling in both the directions opposite to each other.
 - D. Nerve impulse is not moving in either direction.
57. The concept of recon was proposed by Seymour Benzer by studying recombination between:
- A. Lysis mutants of bacteriophage T4.
 - B. White eye mutants of *Drosophila melanogaster*.
 - C. Biochemical mutants of *Neurospora crassa*.
 - D. Auxotrophic mutants of *Escherichia coli*.
58. A *cis-trans* complementation test is carried out to identify:

- A. If two genes interact with one another.
- B. If two mutations are allelic in nature.
- C. The number of genes influencing a phenotype.
- D. To understand the dominance/recessive relationships between alleles.

59. Which of the following ion channels are involved in the generation of nerve impulse?

- A. Voltage-gated sodium channel.
- B. Voltage-gated cadmium channel.
- C. Voltage-gated manganese channel.
- D. Ligand-gated cadmium channel.

60. ELISA test uses:

- A. A substance that emits ultrasound.
- B. A substrate that produces electrical energy.
- C. A substrate which gets converted into a coloured product.
- D. A radiolabelled secondary antibody.

61. Most enzymes are:

- A. Protein in nature.
- B. Carbohydrate in nature.
- C. Lipid in nature.
- D. Fatty acid in nature.

62. If numerical aperture of a microscope decreases by half, then its resolution will

- A. Decrease by half
- B. Remain unchanged
- C. Increase by half
- D. Increase twice

63. What is x if $y = (2-3x)/4$?

- A. $x = (2-4y)/3$
- B. $x = (4y-2)/3$
- C. $x = (1/2-2y)/3$
- D. $x = 3/(2-4y)$

64. What is $\cos^2(x) - \sin^2(x)$?

- A. $\cos(2x)$
B. 1
C. $\sin(2x)$
D. $1-\sin(2x)$
65. If you are standing on a frictionless surface and you want to get out you can
A. Jump backward
B. Throw a stone
C. Glide forward
D. Lie down and roll
66. Kilowatt-hr is the unit of
A. Radiation intensity
B. Power
C. Current
D. Energy
67. Wavelength of electromagnetic wave of frequency 30Mhz is
A. 15m
B. 10m
C. 20m
D. 60m
68. Which of the following vitamins is a water-soluble vitamin?
A. Vitamin A.
B. Vitamin D.
C. Vitamin E.
D. Vitamin C.
69. Which one of the following is called the "suicidal bag" of the cell?
A. Cytoplasm.
B. Lysosome.
C. Mitochondria.
D. Endoplasmic reticulum.
70. Who is known as the "father of Genetics"?
A. Thomas Hunt Morgan.
B. James D. Watson.
C. Gregor Johann Mendel.
D. William Bateson.

University of Hyderabad
Entrance Examinations - 2021

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

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

Signature: