Test Booklet No. प्रश्नपत्रिका क्र. Paper-III LIFE SCIENCE				
Signature and Name of Invigilato	r	Seat No.		
1. (Signature) (Name)		(In figures as in Admit Card)		
(Name)		at No	(In words)	
(Name)		OMR Sheet No.		
AUG- 34315		(To be filled by the Candidate)		
Time Allowed : 2½ Hours]		[Maximum Marks : 150		
Number of Pages in this Booklet : 20				this Booklet : 75
Instructions for the Candidates 1. Write your Seat No. and OMR Sheet No. in the space on the top of this page. 2. This paper consists of 75 objective type questions. Ead will carry twomarks. Al/questions of Paper-III will be covering entire syllabus (including all electives, witho 3. At the commencement of examination, the questi will be given to the student. In the first 5 minute requested to open the booklet and compulsorily exatellows: (a) To have access to the Question Booklet, the paper seal on the edge of this cover page. Do a booklet without sticker seal or open book (ii) Tally the number of pages and number of in the booklet with the information primic cover page. Faulty booklets due to missi questions or questions repeated or not order or any other discrepancy shou accepted and correct booklet should be from the invigilator within the period of Afterwards, neither the Question Bookl. (iii) After this verification is over, the OMR Shee should be entered on this Test Booklet. 4. Each question has four alternative responses mark (C) and (D). You have to darken the circle as indicate the correct response against each item. (A) B D	1. ch question ompulsory, at options). on booklet s, you are mine it as ear off the not accept let. questions sed on the ng pages/ in serial Id not be obtained of minutes. et will be The same et Number ed (A), (B),	परिक्षार्थीं नी आपला अ तसेच आपणांस दिलेल सदर प्रश्नपत्रिकेत 75 आहेत. या प्रश्नपत्रिकेत हे या विषयाच्या संपूर्ण परीक्षा सुरू झाल्यावर मिनीटांमध्ये आपण स्व पहाव्यात. () प्रश्नपत्रिका सील नसलेल (ii) पहिल्या पृष्ठ तसेच प्रश्नप पृष्ठे कमी 3 क्रम असलेव सुरुवातीच्या प्रश्नपत्रिका मिळणार नाह विद्यार्थ्यांनी (iii) वरीलप्रमाणे ओ.एम.आर. प्रत्येक प्रश्नासाठी (A)	या उत्तरपत्रिकेचा क्रमां कहुपर्यायी प्रश्न आ तील सर्व प्रश्न सोडवि अभ्यासक्रमावर आध विद्यार्थ्याला प्रश्नपत्रिव दर प्रश्नपत्रिका उघडून उघडण्यासाठी प्रश्नपत्रि तो किंवा सील उघडले 1 किंवा सील उघडले 1 किंवा सील उघडले 1 किंवा सेल उघडले 1 किंवा इतर ज़ुटी उ 1 किंवा इतर ज़ुटी ज ि 1 किंवा उत्तर ज़िला जि 1 किंवा जिल्ला जिल्ला जिल्ला जिल्ला जिल्ला जिल्ला जिल्ला जिल्ला 1 किंवा जिल्ला जिल्ला जा ज 1 किंवा जिल्ला ज 1 किंवा जा ज 1 किंवा जा ज 1 किंवा जा जा ज 1 किंवा जा जा	रोल वरच्या कोप-यात लिहावा. क त्याखाली लिहावा. हेत. प्रत्येक प्रश्नास दोन गुण णे अनिवार्य आहे. सदरचे प्रश्न गरित आहेत. का दिली जाईल. सुरुवातीच्या 5 खालील बाबी अवश्य तपासून कोकेवर लावलेले सील उघडावे. ली प्रश्नपत्रिकेची एकूण पृष्ठे गंची संख्या पडताळून पहावी. असलेली/प्रश्नांचा चूकीचा असलेली/प्रश्नांचा चूकीचा असलेली सदोष प्रश्नपत्रिका बेक्षकाला परत देऊन दुसरी गर्नतर प्रश्नपत्रिका बदलून न मिळणार नाही याची कृपया हिल्यानंतरच प्रश्नपत्रिकेवर
 Your responses to the items are to be indicated in Sheet given inside the Booklet only. If you mark a other than in the circle in the OMR Sheet, it will not be Read instructions given inside carefully. Rough Work is to be done at the end of this bookle If you write your Name, Seat Number, Phone Num any mark on any part of the OMR Sheet, except for allotted for the relevant entries, which may dis identity, or use abusive language or employ any ot means, you will render yourself liable to disqualifi 9. You have to return original OMR Sheet to the invigil end of the examination compulsorily and must not car you outside the Examination Hall. You are, however to carry the Test Booklet and duplicate copy of OMI conclusion of examination. Use only Blue/Black Ball point pen. Use of any calculator or log table, etc., is prohi 12. There is no negative marking for incorrect ans 	t any place evaluated. 5. t. ber or put 6. the space 7. close your 8. her unfair cation. ator at the rry it with 9. R Sheet on 10. bited. 11.	इतर ठिकाणी लिहीलेली आत दिलेल्या सूचना व प्रश्नपत्रिकेच्या शेवटी जर आपण ओ.एम.आ नाव, आसन क्रमांक, केलेली आढळून आल्य अवलंब केल्यास विद्य परीक्षा संपल्यानंतर विद्य	उत्तरे तपासली जांणार न ठाळजीपूर्वक वाचाव्या जोडलेल्या कोन्या पान र. वर नमूद केलेल्या 1 फोन नंबर किंवा ओळ रास अथवा असभ्य भाष् शर्थ्याना मूळ ओ.एम.अ ग्राह्य तथापी, प्रश्नपत्रिक 1बर नेण्यास विद्यार्थ्या फाळ्या वॉल पेनचा च नॉग टेबल वापरण्या	ते. IIवरच कच्चे काम करावे. ठिकाणा व्यतिरीक्त इतर कोठेही ख पटेल अशी कोणतीही खूण मेचा वापर किंवा इतर गैरमागाँचा १ ठरविण्यात येईल. गर. उत्तरपत्रिका पर्यवेक्षकांकडे ठा व ओ.एम.आर. उत्तरपत्रिकेची ना परवानगी आहे. 1 वापर करावा. 1स परवानगी नाही.

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LIFE SCIENCE

Paper III

Time Allowed : 2½ Hours]

[Maximum Marks : 150

Note : This paper contains Seventy Five (75) multiple choice questions. Each question carries Two (2) marks. Attempt All questions.

1.	Biosystematics is concerned with	2. In which of the following
	information on :	Bryophytes, pseudo-elaters are
	(<i>i</i>) evolution and classification of	formed :
	populations	(A) Marchantia
	(<i>ii</i>) genetic variability of	(B) <i>Riccia</i>
	populations <i>iii</i>) breeding behaviour of populations	(C) Sphagnum
		(D) Anthoceros
	(iv) Competition and local	3. The motile male gamete forms in
	adaptations of populations	both
	(A) (<i>i</i>) and (<i>ii</i>) only	(A) Cycas and Ginkgo
	(B) (<i>i</i>) and (<i>iii</i>) only	(B) Ginkgo and Pinus
	(C) (<i>j</i>)	(C) Pinus and Gnetum
	(D) (<i>i</i>), (<i>ii</i>), (<i>iii</i>) and (<i>iv</i>)	(D) Gnetum and Juniperus
		B [P.T.O.

- 4. Cytoplasmic Male Sterility (CMS) is the result of in the mitochondrial genome.
 - (A) hybridization
 - (B) mutation
 - (C) selection
 - (D) recombination
- As per N.I. Vavilov's concept,
 primary centres of origin of crop

plants have great

(A) genetic diversity

(B) phenetic diversity

- (C) ecosystem diversity
- (D) biodiversity

- - (A) 2-phosphoglycolate and3-phosphoglycerate
 - (B) 2-phosphoenol pyruvate and2-phosphoglycolate
 - (C) 3-phosphoglycerate and2-phosphoenol pyruvate
 - (D) 2-phosphoglycolate and2-phosphoglyoxylate
- 7. Which growth regulator helps to reduce the senescence of leaf ?
 - (A) Auxin
 - (B) Cytokinin
 - (C) Gibberellin

(D) Ethylene

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8. Which of the following crops is autotetraploid ?

(A) Potato

- (B) Banana
- (C) Wheat
- (D) Sweet potato
- 9. Effective breeding for disease

resistance is achieved by creating

(A) artificial epidemics

(B) greenhouses

(C) field surveys

(D) hybrids

- 10. Cybrids are obtained by the technique :
 - (A) Micropropagation
 - (B) Protoplast fusion
 - (C) Genetic transformation
 - (D) Pollen culture
 - The nematode body cavity is a pseudocoel because it :
 - (A) is surrounded by a muscle layer and lined by the alimentary canal
 - (B) is filled with pseudocoelomic fluid
 - (C) has very little parenchyma
 - (D) contains large cells called

pseudo-coelomocytes

[P.T.O.

- 12. In which snake the third supralabial scale touches the eye and the nostril ?
 - (A) Russell's viper
 - (B) Cobra
 - (C) Krait
 - (D) Rat-snake
- 13. The structural and functional
 - unit of muscle contraction is
 - the :
 - (A) Myofibril
 - (B) Myosin
 - (C) Sarcomere
 - (D) A and I bands

- 14. Action potential of neurones does not follow :
 - (A) graded potential
 - (B) a threshold of stimulation
 - (C) the all or none law
 - (D) an influx of sodium ions
- 15. Vitellogenesis is facilitated by :
 - (A) Corpus luteum
 - (B) Granulosa
 - (C) Placenta
 - (D) Yolk sac
- 16. In mammals the circadian clock islocated within the :
 - (A) suprachiasmatic nucleus
 - (B) cerebellar cortex
 - (C) basal ganglia
- (D) frontal cortex

- 17. Orienting response of organisms in which an animal turns to face an oncoming current of water is known as :
 - (A) geotaxis
 - (B) hydrotaxis
 - (C) rheotaxis
 - (D) thigmotaxis
- As compared to plain-dwellers, residents of high altitudes are likely to have :
 - (A) increased haemoglobin and increased number of erythrocytes
 - (B) larger RBCs and smallervolume of blood
 - (C) elevated body temperature and high breathing rate
 - (D) reduced haemoglobin and smaller number of erythrocytes

19. The vegetative stage of the malarial

parasite is known as

- (A) trophozoite
- (B) sporozoite
- (C) schizozoite
- (D) merozoite
- 20. The insoluble protein fraction of silk
 - is:
 - (A) elastin
 - (B) fibroin
 - (C) keratin
 - (D) sericin

- 21. Which of the following substances or agent is paving the way to understanding a larger phenomenon of environmental signaling ?
 - (A) Teratogens
 - (B) Carcinogens
 - (C) Mutagens
 - (D) Estrogens
- 22. The initial step in adhesion between leucocytes and endothelial cells that line blood vessels is mediated by a family of transmembrane proteins is called :

A) Selectins

- B) Spectrin
- (C) Ankyrin
- (D) Porins

23. As per IUCN a large area of unmodified or slightly modified land, and/or sea retaining its natural character and influence, without permanent or significant habitation, which is protected and managed so as to preserve its natural condition is called as :

(A) strict nature reserve

- (B) wilderness area
- (C) national park
- (D) natural monument
- 24. The "C-value paradox" of evolution of genomes states that :
 - (A) increase in the number of protein coding genes is proportional to the increase in the genome size
 - (B) increase in the number of protein-coding genes is not proportional to the increase in the genome size
 - (C) the number of genes is greater in higher organisms than the relative increase in the genome size
 - (D) all chromosomes have more or less same number of genes

- 25. The rate of spontaneous depurination in DNA is about 10⁴ purines per day in a mammalian cell. This type of spontaneous mutation is caused by :
 - (A) breaking of the N-glycosidic bond
 - (B) breaking of the phosphodiesterbond
 - (C) breaking of the hydrogen bond
 - (D) deamination of adenine or guanine base
- 26. Polytene chromosome of *Drosophila* is a good experimental system to study :
 - (A) DNA replication
 - (B) DNA recombination
 - (C) Inducible gene expression
 - (D) Chromosomal translocation

- 27. Which of the following types of histone modifications causes epigenetic regulation of eukaryotic chromatin leading to active transcription:
 - (A) H_3 - K_9 -acetylation
 - (B) H₃-K₉-trimethylation
 - (C) H_4 - K_{10} -phosphorylation
 - (D) H₁-phosphorylation
- 28. Water is effective in screening the electrostatic interactions between dissolved ions because it has :
 - (A) a high dielectric constant
 - (B) a high fluidity property
 - (C) a high electrical conductivity
 - (D) a neutral pH value

[P.T.O.

- 29. Food webs based on the concept who eats whom, emphasizing the feeding relationships are called :
 - (A) Energy flow food webs
 - (B) Functional food webs
 - (C) Connectedness webs
 - (D) Source webs
- 30. The pyramid of productivity or energy flow is always :
 - (A) in upright position
 - (B) subject to reversals
 - (C) in inverted position
 - (D) subject to no change
- 31. Rotavirus is a common cause of diarrhoea in children. Which of the following statements best describes rotavirus ?
 - (A) It is an RNA virus
 - (B) Tests for detection of antigen are rarely useful
 - (C) Culture is the routine method of confirming infection
 - (D) It is rarely a nosocomial pathogen

- 32. Pseudomonas aeruginosa is a ubiquitos bacterium. The underlying condition of the patient is a major factor in the virulence of *P. aeruginosa* Which of the following is a major determinant of the pathogenicity of this organism ?
 - (A) Fluorescein
 - (B) Pyocyanin
 - (C) Pyoverdin
 - (D) Exotoxin A
- 33. Analysis of the metabolites produced by an organism fermentation of glucose reveals small amounts of 6-phosphogluconic acid. This fermentation organism is most likely to be :
 - (A) Enterobacter
 - (B) Escherichia
 - (C) Leuconostoc
 - (D) Streptococcus lactis

- 34. How many of the following bacteria are involved in asymbiotic nitrogen fixation ? Azotobacter, Azospirillum, Rhizobium, Agrobacterium, Beijerinkia
 - (A) 1
 - (B) 2
 - (C) 3
 - (D) 4
- 35. The synthesis of 5-hydroxymethyl cytosine (HMC) during replication, which substitute for cytosine (C) is characteristic features of :
 - (A) Phage T₄
 - (B) Phage λ (lambda)
 - (C) Phage ϕ X174
 - (D) Phage M₁₃
- 36. Endogenous antigens are presentedto T-lymphocytes via :
 - (A) MHC class I molecules
 - (B) MHC class II molecules
 - (C) MHC class III molecules
 - (D) Interleukins

- 37. The cells which are key cellular bridge between adaptive and innate immunity are :
 - (A) T cells
 - (B) B cells
 - (C) Dendritic cells
 - (D) Neurons
- 38. When two uncharged atoms are brought very close together, the two nuclei are said to be in van der Waals contact, when the net :
 - (A) attraction is maximum
 - (B) repulsion is maximum
 - (C) attraction is equal to repulsion
 - (D) attraction is minimum
- 39. Sugar pucker conformation of B-form of DNA is :
 - (A) C-2' endo
 - (B) C-3' endo
 - (C) C-2' endo for pyrimidines and C-3' endo for purines
 - (D) C-2' endo for purines and
 - C-3' endo for pyrimidines

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- 40. Mixed reversible inhibition is due to :
 - (A) binding of inhibitor to the active site of enzyme
 - (B) inhibitor binds at separate site, but may bind to either E or Es
 - (C) inhibitor binds to separate site but only to the Es complex
 - (D) inhibitor binds at separate site but only to the E
- 41. In an enzyme-catalyzed reaction, K_m (Michaelis-Menten constant) is a characteristic of an enzyme used for its substrate and is independent of the amount of enzyme used for its experimental determination, but V_{max} (limiting value of the initial rate when all the active sites are occupied) has no absolute value but varies with the :

(A) Time

- (B) K_m/2
- (C) substrate concentration beyond saturation
- (D) amount of enzyme used

- 42. Which of the following pentose is not formed during pentose phosphate pathway ?
 - (A) Ribulose 5-phosphate
 - (B) Ribose 5-phosphate
 - (C) Xylulose 5-phosphate
 - (D) Xylose 5-phosphate
- 43. No net conversion of fatty acids to glucose occurs in mammals because
 - (A) pyruvate dehydrogenasereaction is irreversible
 - (B) of the presence of citrate synthase
 - (C) lack of glycerol kinase
 - (D) lack of acetyl CoA carboxylase

- 44. Which of the following biochemical reaction shows highest standard free energy change ?
 - (A) UDP-glucose + $H_2O \rightarrow UMP$ + glucose 1–phosphate
 - (B) Glucose 1–phosphate \rightarrow

glucose 6-phosphate

- (C) Malate \rightarrow fumarate + H₂O
- (D) Palmitate + $23O_2 \rightarrow 16CO_2$ + $16H_2O$
- 45. Which of the following enzyme reactions is termed as acyl group transfer reaction ?
 - A) Chymotrypsin
 - B) Lysozyme
 - (C) Hexokinase
 - (D) Isomerase

- 46. Which of the following becomes oncogenic when it has a truncation in the N-terminal extracellular domain ?
 - (A) PDGFR
 - (B) EGFR
 - (C) FGFR
 - (D) GMCSFR
- 47. Cryptic splice sites are those :
 - (A) Which are used in some cellsbut not in others
 - (B) Which are always used
 - (C) Which are involved in alternative splicing
 - (D) Which are within exons or introns that resemble consensus splicing signals, but are not true splice sites

- 48. The proteome of a cell is defined as :
 - (A) all the proteins that a cell is capable of synthesizing
 - (B) all the proteins present in a cell over the cells' life time
 - (C) all the proteins present in a cell at a given moment
 - (D) all the proteins that are posttranslationally modified in a cell at a given moment
- 49. Which of the following statements correctly describes the recombination frequency between two genes ?
 - (A) The closer two genes are to each other on a chromosome higher is the frequency of recombination between them
 - (B) The more distant two genes are to each other on a chromosome higher is the frequency of recombination between them
 - (C) If two genes are located on the same chromosome then no recombination events can occur between them
 - (D) If two genes are located on different chromosomes then the frequency of recombination is high between them

- 50. What is the role of the rho protein in termination of transcription ?
 - (A) It is a helicase that actively breaks base pairs between the template and transcript
 - (B) It is a DNA-binding protein that blocks the movement of RNA polymerase down the template
 - (C) It is a subunit of RNA polymerase that binds to RNA hairpins and stalls transcription
 - (D) It is a nuclease that degrades the 3' ends of RNA transcripts
- 51. Lampbrush chromosomes represent :
 - (A) DNA and multiple gene transcripts of various sizes being made
 - (B) replication of DNA
 - (C) amplification of rRNA genes
 - (D) miRNA transcripts of various lengths

- 52. What is a pseudogene ?
 - (A) A gene that is only expressed at certain developmental stages
 - (B) A non-functional gene
 - (C) A gene that contains a mutation but is still functional
 - (D) A sequence of DNA that is slowly evolving to become an active gene
- 53. Which of the following partial diploids can make β galactosidase and grow in a medium with lactose as a sole carbon source ?

(A) $i^{-} z^{+} y^{-} / i^{+} z^{-} y^{-}$ (B) $i^{+} o^{c} z^{+} y^{+} / i^{+} z^{+} y^{+}$ (C) $i^{+} p^{-} z^{+} y^{+} / i^{+} z^{-} y^{-}$

(D) $i^+ z^- y^+ / i^+ z^- y^-$

- - (D) INES
 - (C) Poly A tail

(D) 3' UTR

- 55. The length of DNA present in the nucleosome core particle in a somatic cell is usually :
 - (A) 100 bp
 - (B) 146 bp
 - (C) 200 bp
 - (D) 250 bp
- 56. The phenotypic effects seen in phenylketoneuria (PKU), an inherited disorder are due to :
 - (A) the accumulation of phenylketones in blood
 - (B) the absence of phenylalanine hydroxylase
 - (C) a deficiency of phenylketones in blood
 - (D) a deficiency of phenylketones

- 57. According to Knudson's two hit hypothesis which provides an explanation for predisposition to Retinoblastoma :
 - (A) Mutation in Retinoblastoma gene is recessive
 - (B) Mutation in Retinoblastoma gene is silent
 - (C) Mutation is always associated with translocation
 - (D) It involves an oncogene
- 58. DNA ligase synthesizes
 - (A) hydrogen bonds between bases
 - (B) phosphodiester bond between nucleotides
 - (C) bond between bases and deoxyribose sugars
 - (D) Peptide bonds between amino acids

- 59. Genomic library is :
 - (A) a collection of recombinant molecules with inserts that contain all of the genes of an organism
 - (B) a collection of recombinant molecules with inserts that contain all of an organism's genomic DNA
 - (C) a collection of recombinant molecules with inserts that contain expressed genes of an organism
 - (D) a collection of recombinant molecules with inserts that are sequenced
- 60. Inserting a gene encoding a pathogenic microbe's surface protein into a harmless virus produces a:
 - (A) piggyback vaccines
 - (B) virulent virus
 - (C) active disease causing pathogen
 - (D) pharmaceutical human protein

- 61. Which of the following is a second messenger ?
 - (A) SiRNA
 - (B) miRNA
 - (C) cAMP
 - (D) Na⁺
- 62. Each molecule of Na-K ATPase contains the following combination of subunits :
 - (A) 4α
 - (B) 2α and 2β
 - (C) 1α and 3β
 - (D) 4β
- 63. Microtubule depolymerizing drug such as colchicine, is expected to :
 - (A) inhibit mitosis but allow cytokinesis
 - (B) inhibit cytokinesis
 - (C) allow mitosis beyond metaphase
 - (D) induce formation of multiple contractile rings

- 64. A beaker marked 'X' has 100 ml of water at 80°C while another beaker marked 'Y' has 200 ml water at 20°C. If we mix the two completely in 500 ml beaker and record the temperature immediately, the temperature will be closest to :
 - (A) 20°C
 - (B) 40°C
 - (C) 80°C
 - (D) 50°C
- 65. Which one of the following is an expression for the X-ray diffraction technique used for determination of structures of biomolecules, according to Bragg's law :
 - (A) $2d \cdot \sin Q = n \cdot \lambda$
 - (B) $\sin Q = 2d \cdot n\lambda$
 - (C) 2d. $\lambda = n$. sin Q

(D)
$$\frac{\sin Q}{2d} = n \cdot \lambda$$

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- 66. Electrophoresis of a purified protein in SDS – PAGE in the presence of 2 mercaptoethanol yields two bands of 25 KDa and 35 KDa. However in a gel filtration chromatography the same protein elutes as 60 KDa protein. What conclusion can be drawn from this ?
 - (A) Protein is not purified to homogeneity
 - (B) Protein is a heterodimer
 - (C) Protein is a multimer
 - (D) Two bands observed in SDS-PAGE are due to protein degradation
- 67. Electroencephalogram is a record of electrical activity of the :
 - (A) heart
 - (B) leg muscle
 - (C) liver
 - (D) brain

- 68. An amino acid mixture consisting of phenylalanine, glycine and glutamic acid is to be separated by HPLC. The stationary phase is aqueous and the mobile phase is a solvent of less polarity than water. Choose the proper sequence of elution of amino acids :
 - (A) Phe, Gly, Glut
 - (B) Phe, Glut, Gly
 - (C) Gly, Phe, Glut
 - (D) Glut, Gly, Phe
- 69. Which one of the following is used as a feeder layer for cloning of mouse hybridoma ?
 - (A) HeLa cells
 - (B) NIH3T3 cells
 - (C) MEL cells
 - (D) sp20 cells

- 70. One microgram of a 3kb plasmid DNA will approximately contain how many number of the DNA molecule ?
 - (A) 3×10^9
 - (B) 3×10^{11}
 - (C) 3×10^6
 - (D) 6.023×10^{23}
- 71. Which of the following is *not* a method for constructing the microarrays ?
 - (A) Spotting of DNA fragments directly on the slide
 - (B) Pizoelectric printing
 - (C) Photolithography
 - (D) Crosslinking of DNA on the slides using glutaraldehyde
- 72. Which of the following molecules of same quantity absorb least in uv-visible spectra ?
 - (A) double stranded DNA
 - (B) single stranded DNA
 - (C) deoxyribonucleotides
 - (D) deoxyribonucleosides

- 73. Which of the following immunological techniques do not aggregate soluble antigens as end point ?
 - (A) Double immunodiffusion
 - (B) Immunoblotting
 - (C) ELISA
 - (D) Hemagglutination
- 74. In a z distribution, the z value of 1 represents :
 - (A) Mean
 - (B) Standard deviation
 - (C) Degrees of freedom
 - (D) Relative frequency
- 75. Chances of making a Type I error in statistical inference will be higher when :
 - (A) Sample size is > 30
 - (B) 't distribution is used instead of actual distribution
 - (C) level of significance (α) is lower
 - (D) confidence interval is wider

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ROUGH WORK

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