



ARKAJAIN
University
Jharkhand

END SEM EXAMINATION
School of Health and Allied Science

Branch	Optometry	Program	B. Optometry
Subject Name	Research Methodology & Biostatistics	Semester	V
		Year	Odd Nov/Dec 2023
Time: 3 Hour Max. Marks : 70	<ul style="list-style-type: none"> Start writing from 2nd page onwards; don't write on the 1st Page Backside Answer all Questions of Section A (Compulsory) Answer Any Four out of Six of Section B Answer Any Two out of Four of Section C Possession of Mobile Phones or any kind of Written Material, Arguments with the Invigilator or Discussing with Co-Student will come under <u>Unfair Means</u> and will <u>Result in the Cancellation of the Papers.</u> 		

Section A (Each question Carry 01 Marks from Q1-i to xii) – 12 Marks		Marks	COs
Q. N1	QUESTIONS		
i	Which of the following is not major of motility (prevalence rate) a) Net reproduction c) Crude death rate b) standardized rate d) each specific death rate	01	CO2
ii	The correction coefficient always lies between a) 0 and infinity c) 0 and 1 b) infinity and infinity d) *1 and 1	01	CO1
iii	Mortality is related to. a) Death c) Birth b) migration d) none of the above	01	CO1
iv	When the participants are not revealed in the study a) Confidential c) Ethics b) anonymity d) discretion	01	CO2
v	IRB full form. a) Institution review board c) Institution rating board b) Internal review board d) none of the above	01	CO1
vi	Hypothesis are of how many types a) 2 types c) 3 types b) 1 type d) 0 types	01	CO3
vii	Ethics in the research are important because a) Promote the aim of research c) Both b) promote the researcher d) None of the above	01	CO1
viii	Manipulating research material during research. a) Falsification c) Bifurcation b) Modification d) None of the above	01	CO2

ix	Compilation of data is called a) Data deletion b) Data analysis c) Data replication d) None of the above	01	CO1
x	Which of the following can be the source of primary data collection in research a) Survey b) Experiment c) Both d) None	01	CO2
xi	The T in PICOT criteria of research stands for a) Time b) Treatment c) Turbulence d) None	01	CO1
xii	Research is a) Searching again and again b) Finding solution to any problem c) Working in a scientific way to search for truth of any problem d) None of the above	01	CO3

Section B (Answer any FOUR out of SIX) - 28 Marks
(Each question 07 Marks)

Q. No.	QUESTIONS	Marks	COs
2	Explain the process of literature review.	07	CO4
3	What is a case presentation? Explain with an example.	07	CO4
4	What are the disadvantages of non-probability sampling?	07	CO1
5	Explain the importance of Informed consent in research process.	07	CO2
6	What are the criteria for a good research?	07	CO3
7	Differentiate between case control and cohort study.	07	CO2

Section C (Answer any Two out of Four) - 30 Marks-
(Each question Carry 15 Marks)

Q.No.	QUESTIONS	Marks	COs
8	What is sampling? Explain the various sampling techniques. What is sample size and the formula used for calculating sample?	15	CO3
9	What are the various types of epidemiological studies?	15	CO1

10	Explain 1) Retrospective study with an example 2) Prospective study with an example	15	CO2
11	Explain the consequences of manipulation of data and falsified research outcomes.	15	CO2



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Branch	B. Optometry	Program	Optometry
Subject Name	Low vision care	Semester	V
		Year	Odd Nov/Dec 2023
Time: 3 Hour Max. Marks : 50	<ul style="list-style-type: none">Start writing from 2nd page onwards; don't Write on the 1st Page BacksideAnswer all Questions of Section A (Compulsory)Answer Any Four out of Six of Section BAnswer Any Three out of Five of Section CPossession of <u>Mobile Phones</u> or any kind of <u>Written Material, Arguments</u> with the <u>Invigilator</u> or <u>Discussing with Co-Student</u> will come under <u>Unfair Means</u> and will <u>Result</u> in the <u>Cancellation of the Papers.</u>		

Section A (Each question Carry 01 Marks from Q1-i to Q1-x) – 10 Marks			
Q. N1	QUESTIONS	Marks	COs
i	The most common cause of treatable blindness is a) AMD b) Rod cone dystrophy c) Refractive error d) Glaucoma	01	CO1
ii	BAT is a test for. a) Glare b) Visual acuity c) Contrast sensitivity d) Color vision	01	CO1
iii	_____ gives the true judgement of ability of an individual to perform activities of daily living a) Contrast sensitivity b) Distance Visual acuity c) Color perception d) Near Visual acuity	01	CO2
iv	Eli Peli prism is helpful in rehabilitating patients with _____ a) Central visual field loss b) Hemianopia c) Peripheral visual field loss d) Non strabismic Binocular Visual Disorder	01	CO1
v	HRR is a type of _____ color vision test a) pseudoisochromatic plates b) matching c) plotting d) none of these	01	CO1
vi	ADL stands for? a) Articles of daily living b) Activities of daily living c) Assisted diurnal limitations d) None of the following	01	CO1
vii	In an RP patient, where he is restricted to remain indoors it is a _____	01	CO2

viii	a) Impairment c) Disability Developmental age identifies an individual's a) Motor function c) Embryology	b) Disorder d) Handicap Sensory function Cognitive skills	01	CO1
ix	JND stands for a) Just noticeable differences b) Justifiable notifying disturbance c) Just noticed dioptre d) Just Noticed Disturbance		01	CO2
x	_____ is an example of relative size magnification. a) CCTV c) Large print book	b) Hand magnifier d) OCR	01	CO1

Section B (Answer any FOUR out of SIX) – 20 Marks
(Each question 5 Marks)

Q. No.	QUESTIONS	Marks	COs
2	What is contrast sensitivity? How is CS evaluated and recorded? Mention the importance of CS.	05	CO1
3	Spectacle magnifiers- Structure, diagram, optics, advantages and disadvantage.	05	CO1
4	Write a note on Achromatopsia. How can a patient with Achromatopsia patient be rehabilitated.	05	CO3
5	Describe the types of magnification. Define RSM, RDM and LVM.	05	CO4
6	Write a short note on filters. Write in brief about a condition wherein filters are helpful.	05	CO1
7	Write the advantages and disadvantages of hand held magnifier and stand magnifier.	05	CO2

Section C (Answer any TWO out of FOUR) – 20 Marks-
(Each question Carry 10 Marks)

Q.No.	QUESTIONS	Marks	COs
8	Case Study : A 12-year-old male with infantile nystagmus presented to the low vision paediatric clinic for initial evaluation. He reported difficulty with different tasks at school secondary to his visual impairment. Manage the case.	10	CO4
9	Define rehabilitation. How will you rehabilitate a person for 'orientation and mobility" in case of Low Vision.	10	CO3

10	Case Study: An 11 y/o class 5th student XYZ has OU congenital optic atrophy. His chief complaints are difficulty in keeping up with School work and participation in sports. OD vision is 20/400 and OS vision is HM+. As a low vision expert, what will you advise and prescribe the student and how will you rehabilitate this child?	10	CO4
11	Case study: Manage a case of 40 y/o female oculo-cutaneous Albinism patient, working at bakery shop.	10	CO5



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Branch	Optometry	Program	B. Optometry
Subject Name	Binocular Vision I	Semester	V
		Year	Odd Nov/Dec-2023

Time: 3 Hour
Max. Marks : 50

- Start writing from 2nd page onwards; don't write on the 1st Page Backside
- Answer all Questions of Section A (Compulsory)
- Answer Any Four out of Six of Section B
- Answer Any Three out of Five of Section C
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Q. N1	QUESTIONS	Marks	COs
i	TNO random dot is a test for a) Fusion b) Stereopsis c) Convergence d) Ocular Motility	01	Co2
ii	In grades of binocular vision; grade 2 is: a) Fusion b) Stereopsis c) Simultaneous macular perception d) Convergence	01	Co1
iii	Muscle pair involved in laevolevation a) Right SR and left IO b) Right SR and left SR c) Right IO and left IO d) Right IO and left SR	01	Co3
iv	Distance between Superior rectus insertion and limbus a) 5.5mm b) 6.0mm c) 7.0mm d) 7.7mm	01	Co4
v	Which of the following best defines the "Saccade" a) Voluntary slow eye movements b) Paralytic squint c) Abrupt, involuntary slow eye movements d) Abrupt, involuntary rapid eye movements	01	Co5
vi	The difference between the dioptric power needed to focus at near point and far point is called? a) Range of accommodation b) Anomalies of accommodation c) Amplitude of accommodation d) None of these	01	Co3

vii	The nearest point the eye maintain clear focus is called a) Near point of convergence b) Near point of accommodation c) Near point of fixation d) Near point of fusion	01	Co4
viii	Distance between near point of convergence and far point of convergence is known as a) Amplitude of convergence b) Range of convergence c) Proximal convergence d) Voluntary convergence	01	Co2
ix	Crowding phenomena is characteristics of a) Amblyopia b) 30 Δ exotropia c) Paralytic Squint d) All of these	01	Co5
x	Red-green glasses are used in all of the following except a) Hess screen b) Diplopia chart c) After image test d) Worth 4 dot test	01	Co1

Section B (Answer any FOUR out of SIX) – 20 Marks
(Each question 5 Marks)

Q. No.	QUESTIONS	Marks	COs
2	Explain Horopter and Pannum's area	05	CO1
3	Explain types of occlusion therapy of amblyopia	05	CO5
4	Worth 4 dot test, Prism bar cover test.	05	CO3
5	Explain Synergist, Antagonist and Yoke muscles	05	CO2
6	Explain Abnormal Retinal Correspondence.	05	CO2
7	Explain types of convergence	05	CO4

Section C (Answer any TWO out of FOUR) – 20 Marks-
(Each question Carry 10 Marks)

Q. No.	QUESTIONS	Marks	COs
8	Binocular single vision – Definition, development, grades.	10	CO2
9	Anatomy of extra ocular muscle	10	CO1
10	A 17-year-old student did well in all her exams but did poorly when she had to take long timed exams, as she complained of	10	CO5

11	headache. Her VA revealed 20/20 at distance, Give the differential diagnosis for all the possible cases.	10	CO4
	A patient has accommodative excess write in details the battery of tests that need to be conducted.		



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Branch	Optometry	Program	B. Optometry
Subject Name	Geriatric Optometry & Pediatric Optometry	Semester	V
		Year	Odd Nov/Dec 2023
Time: 3 Hour Max. Marks : 50	<ul style="list-style-type: none"> Start writing from 2nd page onwards; don't Write on the 1st Page Backside Answer all Questions of Section A (Compulsory) Answer Any Four out of Six of Section B Answer Any Three out of Five of Section C Possession of <u>Mobile Phones</u> or any kind of <u>Written Material, Arguments with the Invigilator or Discussing with Co-Student</u> will come under <u>Unfair Means</u> and will <u>Result</u> in the <u>Cancellation of the Papers.</u> 		

Section A (Each question Carry 01 Marks from Q1-i to Q1-x) – 10 Marks		Marks	COs
Q. N1	QUESTIONS		
i	Lens develops from a) Ectoderm b) Mesoderm c) Endoderm d) None of the above	01	CO1
ii	Average corneal curvature at birth is a) 47.00D b) 49.00D c) 43D d) 40D	01	CO2
iii	Bruckner's reflex test is used to screen a) Strabismus b) Nystagmus c) Retinal problems d) None of the above	01	CO5
iv	Broad H is used to test a) Intraocular pressure b) Ocular motility c) Visual fields d) both b and c	01	CO3
v	Treatment for amblyopia is a) Occlusion therapy b) Synaptophore c) Bangerter foil	01	CO4

	d) All of the above				
vi	Vogt's striae is found in a) Corneal edema b) Keratoconus c) Congenital Glaucoma d) Aging corne	01			CO5
vii	Old photographs are to asked in a) Squint patients b) Ptosis c) None of the above d) Both squint and ptosis	01			CO1
viii	Alternate cover test is useful in diagnosing a) Latent Nystagmus b) Latent Strabismus c) Intermittent divergent squint d) All the above.	01			CO2
ix	Visual acuity reaches adult acuity in children by the age of a) 7 years b) 9 years c) 5 years d) 3 years	01			CO3
x	Near vision is recorded at a distance of a) 10 cm b) 25 cm c) 33 cm d) 50 cm	01			CO1

Section B (Answer any FOUR out of SIX) – 20 Marks
(Each question 5 Marks)

Q.No.	QUESTIONS	Marks	COs
2	Explain the paediatric contact lens option available	05	CO4
3	History taking of paediatric patient	05	CO1
4	Low vision causes and management in geriatric population	05	CO5
5	Spectacle dispensing for children	05	CO3
6	Discuss retinopathy of prematurity	05	CO5

7	Explain the development of eye and vision	05	CO1
Section C (Answer any TWO out of FOUR) – 20 Marks- (Each question Carry 10 Marks)			
Q.No.	QUESTIONS	Marks	COs
8	Explain in detail about Geriatric optometry workup.	10	CO2
9	Write detailed notes on measurement of visual acuity in Infants	10	CO1
10	Explain in detail about low vision workup in elderly	10	CO3
11	Write detailed notes on low vision assessment in children.	10	CO4



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Branch	Optometry	Program	B. Optometry
Subject Name	Contact Lens I	Semester	V
		Year	Odd Nov/Dec 2023
Time: 3 Hour Max. Marks : 50	<ul style="list-style-type: none">• Start writing from 2nd page onwards; don't Write on the 1st Page Backside• Answer all Questions of Section A (Compulsory)• Answer Any Four out of Six of Section B• Answer Any Three out of Five of Section C• Possession of <u>Mobile Phones</u> or any kind of <u>Written Material, Arguments with the Invigilator or Discussing with Co-Student</u> will come under <u>Unfair Means</u> and will <u>Result in the Cancellation of the Papers.</u>		


Q. N1	QUESTIONS	Marks	COs
i	A flat fitting lens is characterized by all except a) Excessive movement b) little or no movement c) High or low riding horizontally displaced lens d) none of these.	01	CO4
ii	The Ideal Contact Lens Is a) Optically transparent b) Has Stable Dimension c) Has Good wettability d) all of these	01	CO1
iii	Normal tear film break up time a) 10 seconds b) 45 seconds c) <10 seconds d) 15-45 secondss	01	CO2
iv	The base curve required for a patient with K1= 7.8mm & K2= 7.5mm is- a) 8.8mm b) 8.5mm c) 7.5mm d) 8.6mm	01	CO5
v	Dk value of a material is defined as. a) Oxygen permeability b) Oxygen transmissibility	01	CO3

7	What is GPC? What causes GPC?	05	CO4
Section C (Answer any TWO out of FOUR) - 20 Marks- (Each question Carry 10 Marks)			
Q. No.	QUESTIONS	Marks	COs
8	Describe briefly 3 methods of tear assessment	10	CO2
9	Write a long detailed answer for the history and development of contact lenses.	10	CO3
10	Write about insertion and removal technique of soft contact lens	10	CO4
11	Discuss the importance of corneal topography, keratometry and slit lamp for contact lens fitting.	10	CO5

vi	c) Oxygen flux d) Oxygen probability All are true about silicon hydrogel contact lenses except a) Low water content b) high modulus of elasticity c) Lower lipid deposit d) High Dk	01	CO2
vii	What is the desired amount of post blink movement that an RGP lens should display? a) 0.00mm-0.50mm b) 0.25mm-0.75mm c) 1.00mm-2.00mm d) 2.50mm-3.50mm	01	CO3
viii	Water content of HEMA lenses is a) 55% b) 38% c) 50% d) 6%	01	CO4
ix	Which material is Backbone of all Rigid Contact Lenses a) PMMA b) HEMA c) MMA d) Butyl Styrene	01	CO2
x	None of the following cases are suitable for CL except a) Dry eyes b) Tobacco c) High refractive error d) On medication	01	CO1

Section B (Answer any FOUR out of SIX) - 20 Marks
(Each question 5 Marks)

Q. No.	QUESTIONS	Marks	COs
2	Explain Elasticity, Tensile Strength and Rigidity of contact lens	05	CO1
3	Discuss the optical advantage and disadvantage of contact lens over spectacle	05	CO3
4	Discuss any 2 conditions where Soft contact lenses are contraindicated.	05	CO5
5	If you prescribe soft contact lens to patient, what are the precaution you will advise?	05	CO4
6	Describe the role of tear film and tear lens in contact lens wear.	05	CO3

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Branch	Optometry	Program	B. Optometry
Subject Name	Systemic Disease	Semester	V
		Year	Odd Nov/Dec 2023
<ul style="list-style-type: none"> • Start writing from 2nd page onwards; don't write on the 1st Page Backside • Answer all Questions of Section A (Compulsory) • Answer Any Four out of Six of Section B • Answer Any Two out of Four of Section C • Possession of Mobile Phones or any kind of Written Material, Arguments with the Invigilator or Discussing with Co-Student will come under Unfair Means and will Result in the Cancellation of the Papers. 			
Time: 3 Hour Max. Marks : 70			

Section A (Each question Carry 01 Marks from Q1-i to xii - 12 Marks)		Q.N1	QUESTIONS	Marks	COs
i	Abnormal growth of blood vessels is called _____.		a) Neovascularization b) Neovascularization c) Natovascularizing d) Striaberation	01	CO1
ii	Central retinal artery is a branch of _____.		a) Carotid artery b) Ophthalmic artery c) Chorio-capillaries d) Supero temporal artery	01	CO3
iii	Risk factor for Diabetic retinopathy include both i) _____ and ii) _____.		a) Duration of diabetes & Hyperlipidaemia b) Severity of diabetes and cancer c) Stroke and cancer d) Hypertension and hyperglycemia	01	CO2
iv	Amaurosis fugax requires _____ approach		a) Cardio vascular b) Cerebro vascular c) Ophthalmic d) All of the above	01	CO5
v	Migraines may cause _____.		a) Nausea and blurring of vision b) transient ocular ischemia c) Encephalitis d) None of the above	01	CO4
vi	Kaposi sarcoma is a classic sign associated with _____.		a) Leprosy b) HIV AIDS c) Congestive heart conditions d) Tb	01	CO2
vii	Xerosis means _____.		a) Hypotrophy b) Ectasia c) Desiccation d) Haemorrhaging	01	CO1

Section C (Answer any TWO out of FOUR) - 30Marks
(Each question 15 Marks)

Q.No.	QUESTIONS	Marks	COs
8	A 12-year-old boy with a 2-month history of reduced visual acuity was referred to a yellow spot on the conjunctiva with corneal and conjunctival xerosis. Explain the diagnosis and cause. Explain the stages of the diagnosis mentioned previously. Write in brief the management offered to Vitamin A deficiency pediatric age group.	15	CO3
9	A 49 y/o female with butterfly skin rash with previous skin and rheumatological consultations visits the eye care facility. What is the most common diagnosis for the patient? Explain the ocular manifestation of the same.	15	CO5
10	A 57 y/o male driver visits clinic with the complaint of decreased visual acuity and decreased field of view. History reveals, patient has been on insulin for previous 11 years and multiple PRP. Discuss the case and management.	15	CO4
11	A 71 y/o with complaint of profound weakness in limbs and eye visits the clinic and is progressively feeling lethargic as the day goes by. Complaints of severe asthenopia specifically eye strain and fatigue.	15	CO2

viii	Which of the following will not be a treatment method for CMV infestation? a) Ganciclovir b) Acyclovir c) Foscarnet d) Avastin	01	CO2
ix	CMV stands for ____ a) Cytomegalo virus b) Cerebro Micro Virus c) Cytoplasmic maculae virus d) none	01	CO3
x	The best immediate treatment for a chemical splash to the eye is..... a) Neutralization of the chemical with an alkali b) Cold compresses c) Ocular lubricants d) copious irrigation with water	01	CO4
xi	The P in PDR stands for _____. a) Preventive b) Penetrative c) Proliferative d) Pellucid	01	CO5
xii	New blood vessels start formic due to _____. a) Necrosis b) Degeneration c) Ischemia d) Hypertrophy	01	CO1

Section B (Answer any FOUR out of SIX) - 28 Marks
(Each question 7 Marks)

Q.No.	QUESTIONS	Marks	COs
2	Describe the pathogenesis and ocular manifestations of Hansen's disease	07	CO4
3	What are the different kinds of Vitamins? Briefly explain the diseases caused due to deficiency of them.	07	CO1
4	Very briefly explain the conditions and their ocular manifestations- a) SLE b) Rheumatoid Arthritis c) Scleroderma. What is common among all these diseases?	07	CO2
5	A patient, 40 y/o female with xanthelesma appears in the clinic. What tests and probable pathologies are possible?	07	CO5
6	Explain- Rh factor, ANA test, CBC. Briefly describe two ocular conditions where these tests might be required.	07	CO3
7	Write a short note on two syndromes that have ocular impact as well.	07	CO3