SUBJECT- BIOLOGY

Checklist for requirement of Biology Practicals as per Practical exam						
Sr No	Name of experiments	Required Chemicals	Requirement apparatus	Fresh samples	Yes	No
	A. EXPERIMENTS TO BE PERFORMED					
1	Study of Potato Osmoscope	concentrated Sugar solution	Peelers 5, Knife, Bowl 10, pins ,beakers	Potato (1 medium size for two students)		
2	Study of Plasmolysis in epidermal peels	conc sugar solution, distilled water	coverslips, watchglass, microscopes	*Tradescantia* leaves 1 medium size leaf can be shared by 4/5 students)		
3	Study of Structure and distribution of stomata	Glycerine	Compound microscope, glass slide, coverslip, watchglass, blade	Betel leaf and Grass or Maize leaf		
4	Study of pollen germination on slide	Sugar solution or sucrose crystals	Compound microscope, glass slide / cavity slide, coverslip, watchglass, blade	*Catharanthus* (periwinkle) / *Helianthus* (Sunflower) / *Hibiscus* (Shoe flower)		
5	Study of soil sample from different localities / sites with respect to their texture and pH and correlate plants found thereof.	Distilled water	Digger, polythene bags, lense, sieves, clean glass jar, measuring cylinder, pH paper, funnel, filter paper, plastic tray, mortar & pestle	3 types of soil samples		
6	Study of suspended particulate matter in air at the two widely different sites, in your area	Glycerine	Ear buds, glass slides, microscope, cover slips	Leaves from two sites (2 leaves per student)		
7	Study of water samples collected from different waterbodies for their pH, clarity and presence of living organisms (microscopic / planktonic	Distilled water	pH paper / universal indicator, 1 ltr beakers, cardboard box, torch / lamp / bulb	Water samples / pond water samples,		

8	Study of population density and frequency of different plant populations by quadret method		Meter scale, springs, nails, paper pencil etc.			
9	Isolation of DNA from given sample	NaCl, isopropyl alcohol chilled, liquid soap	Test tubes, beakers, glass stirring rods, strainer / filter paper, funnel, zip lock bags	Fleshy fruit like banana / grapes / papaya / *zizyphus*		
10	Dissect and display floral whorls. Dissect anther and take T.S. or V.S. of overy to show pollen grains and locules of overy		Forecep, razor blade, glass slide, needles, cover slips, dissecting microscope, paper	*Hibiscus* or *Brassica* flower (1 flower per student)		
11	To detect presence of starch added as an adultrant to the milk		Test tubes, pipettes, 1% iodine solution	Raw Milk samples, (minimum 3)of same source cow/Buffalo		
12	To study various syndromes and their Karyotypes in Human being		charts, photographs of various Karyotypes			
	B. DEMONSTRATION EXPERIMENTS					
13	Comparative study of rates of Transpiration in the upper and lower surfaces of leaf, using Four leaf experiment	Vaseline/Petroleum jelly	Two stands/thread	leaves of Calotropis/Mango/Banyan/Peepal		
14	Separation of Plant photosynthetic pigments by paper chromatography	Petroleum ether/acetone/$MgCl_2$	pestle and mortar, capillary tube, muslin cloth,Whatsmans filter paper no 1, chromatography chamber	Fresh sample of spinach leaves		
15	Study of Imbibition using dried raisins/seeds	water	beaker	dry seeds/ raisins		
16	Study of Flowers adapted to pollination by different pollinating agencies(Wind and Insects)		Forceps,hand lens,slide	Flowers of maize, *Salvia, Oscimum, Brassica* etc		

17	Study of V.S of anatropous ovule through a permanent slide/relevant chart		Chart/slide			
18	Study of T.S.Testis.T.S. of ovary, and V.S of blastula, through permanent slides		permanent slides /charts			
19	Study of meiosis in onion flower bud with the help of permanent slides		permanent slides /charts			
20	Study of plants found in xerophytic and aquatic conditions/habitats.And comment on theitr adaptations		Calotropis, Acacia arabica,Opuntia,Hydrilla, Typha photographs/charts	*Calotropis, Acacia arabica,Opuntia,Hydrilla, Typha,Fresh samples*		
21	Demonstration of Hybridization technique		Photographs showing three steps of Emasculation,bagging and Tagging.	Display of three steps on real Hibiscus or any other flowering plant.		
22	To study pedigree charts of genetic traits such as rolling of tongue, widows peak, blood groups, and colour blindness		Prepared pedigree charts of genetic traits			
23	Study of morphological adaptations of animals, found in xeric and aquatic conditions or habitats		photographs or models of camel, Kangaroo rat, Dolphin, Rohu(*Labeo rohita*).Specimen of Labeo rohita			

24	ti identify common disease causing organisms like *Plasmodium,Entamoeba,Ascaris,* and Ringworm with the help of permanenmt slides and or specimens.Comment on symptoms of diseases that they cause.		permanenmt slides of Plasmodium,Entamoeba,Ring worm or specimens of *Ascaris*			
25	Study of structure or parts of human eye, ear and brain with the help of models or charts		eye, ear and brain models or charts			
26	Observe the prepared slide of blood smear to identify different types of blood cells.		prepared slide of blood smear			

हमी पत्र

मी, श्री./श्रीम. .....
प्राचार्य, कनिष्ठ महाविदयालय.....
असे हमी पत्र लिहून देतो/देते की माझ्या कनिष्ठ महाविदयालयाची प्रात्यक्षिक विषयासाठीची प्रयोगशाळा ही मंडळ कार्यालयाने प्रसिध्द केलेल्या उपकरणांच्या यादीप्रमाणे सर्व उपकरणांनी तसेच भौतिक सुविधांनी सुसज्ज आहे. अथवा पडताळणी समितीने प्रयोगशाळेची पडताळणी केल्यास त्यावेळी सदर उपकरणे उपलब्ध नसल्यास होणा–या कारवाईस मी स्वःत जबाबदार असेल.

दिनांक–
स्थळ–

प्राचार्यांची स्वाक्षरी व शिक्का