M.Sc. 3rd Semester Examination, 2011

BIOMEDICAL LABORATORY SCIENCE AND MANAGEMENT

PAPER—BLM-302(Unit-19

(Theoretical)

Full Marks : 40

Time : 2 hours

Answer **all** questions

The figures in the right-hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

Illustrate the answers wherever necessary

UNIT – 19

MODULE – I

(*Fundamental Clinical Biochemistry*)

1. Answer any *five* of the following : 1 × 5

   (*a*) What is the full name of PCR ?

(*b*) What is the use of agarose in electrophor

(*c*) Write the names of enzymes of liver functio

(*d*) Write the use of flame photometry.

(*e*) Write the names of any two enzymes use diagnosis of cardiac diseases.

(*f*) Write the full form of FPLC.

(*g*) Write any one major difference betv colorimetry and photometry.

(*h*) Write the full form of HPLC.

2. How do you prepare serum for biochem analysis ? How do you prepare protein free filt for biochemical analysis ?

Or

(*a*) State the working principle of vis spectrophotometer.

(*b*) Write the working procedure of pa chromatography briefly.

(*c*) When you use double dimension paper chromatography ? 2 + 5 + 1

3. (*a*) What do you mean by column dead space ?

(*b*) How do you determine Rf value ?

(*c*) Show the schematic diagram of different components of GC. 1 + 2 + 4

Or

(*a*) How you diagnose the genetical disease like sickle cell anaemia through PCR product followed by restriction endonuclease treatment ?

(*b*) Write the light sources in visible and UV spectrophotometer. 5 + 2

MODULE – II

(*Advanced Clinical Biochemistry*)

4. Answer any *five* questions : 1 × 5

(*a*) Which fraction of lipid is cardioprotective ?

(*b*) Write the name of isoenzyme of CPK.

(*c*) Write down the isoenzymes of LDH.

(*d*) Write down full name of GTT.

(*e*) Write the full form of GFR.

(*f*) When acid phosphatase level will be in in blood ?

(*g*) What is microdiffusion technique ?

(*h*) Write the any one test for pancreatic fi test.

5. Write the principle of glucose estimati enzymetic method. Write the method of g estimation with calculation.

Or

Write down the principle of uri estimation in blood. Describe how yo estimate uric acid in blood with calculation.

6. Write down the principle of SGPT estimation SGPT level will be increased in blood. Wi clinical significance of CPK in serum.

Or

(*a*) Write the principle of screening of heavy metal toxicity in biological sample.

(*b*) State the diagnosis of methanol toxicity through the analysis of biological sample. 4 + 3

(*g*) How many nuclei are there in a cyst of Giarc intestinalis ?

(*h*) Draw a diagram of *Balantidium coli.*

2. (*a*) What is the infective form of *Plasmodium viv* in humans that is transmitted by mosquitoes

(*b*) Which organ do they first attack ? Describe th process of confirmative diagnosis abou specific parasite by PCR product followed b hybridization technique. 1 + 1

Or

(*a*) What is the habitat of *Entamoeba histolytica*

(*b*) What are the stages in its life cycle ?

(*c*) Draw diagram of each stage. 1 + 2

3. (*a*) Who is the definitive hostor *Wuchereri bancrofti* ?

(*b*) How the infection takes place ?

(*c*) What investigations would you conduct ? 1 + 1

Or

(*a*) What is the largest round worm of the G.I. tract ?

(*b*) How the infection occurs ?

(*c*) What emplications may arise from this round worm infection ? 1 + 3 + 3

MODULE – II

(*Clinical Mycology*)

4. Answer any *five* of the following : 1 × 5

(*a*) Name the causal organism of mycotic mycetoma.

(*b*) Name two dimorphic fungi.

(*c*) Name two useful media for the culture of pathogenic fungi.

(*d*) Name the organism that causes white piedra.

(*e*) Name two fungi specific stain.

(*f*) Name the commonest solid media used for fungal culture.

Balantidium

(*g*) Define dimorphic fungi.

(*h*) Draw the spore structure of *Trichophyton* sp.

5. Give one most obvious morphological, cultural or other character that would allow one to clearly distinguish between the following pathogens. Assume you are growing them in culture : 2 × 4

(*a*) Aspergillus spp. and Rhizopus spp

(*b*) Candida albicans and Cryptococcus neoformans.

(*c*) *Histoplasma capsulatum* and *Blastomyces, dermatitidis.*

(*d*) *Candida albicams* and *Saccharomyces cerevisial.* yeast

Or

(*a*) Describe how hairs pluncked from a patients head can be used to help identify the etiological agent of tinea capitis.

(*b*) What is *Pneumocystis* pneumonia (PCP) ? Who is most at risk for this opportunistic infection ? What problem does it cause in patients that succumb to this disease.
4 + (1 + 1 + 2)

6. (*a*) What is the primary entry point into the body for true pathogenic fungi ? In what respect do mycoses caused by true pathogenic fungi differ from mycoses caused by fungi associated with opportunistic infections ?

(*b*) What are the general consequences of mycotic infections in human host ? (1 + 2) + 4

Or

(*a*) "Thermal dimorphism is a phenomenon that occurs in many true pathogenic fungi". Justify the statement. Give three examples of fungi that exibit this property.

(*b*) From one AIDS patient CSF has been collected suspecting cryptococcal meningitis – how will you process further to confirm the diagnosis.
(2 + 2) + 3
