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| ***Salahaddin University***  ***College of Science***  ***Biology Department*** | ***Immunology examination***  ***Time: One hour*** | ***Fourth class students***  ناو (وةك ناسنامة): |

**Q1/ Answer with True or False (correct the false one) if not corrected there is no mark (15 marks)**

**1-** The classical pathway differs from other pathways because it's Ag dependent.

**2-** C2b which is a kinin cleaved by plasma to yield prokinin.

**3-** During chronic inflammation neutrophil undergoes a process of endomeiosis that form giant cell.

**4-** When histamine binds to its receptor on parietal cell, increase level of cyclic AMP and release gastric acid.

**5-** The hinge region is rich with properdin that gives flexibility to the Ab.

**6-** Fc portion is so called because it was easily crystalized.

**7-** All the components of the secretory IgA are produced by the same gene except the sugar component.

**8-** Depending on the amount in the serum from high to low, Ab arranged like this, IgG, IgA, IgM, IgE, IgD

**9-** The function of C4 binding protein is to aid binding of C4b to the surface of an Ag.

**10-** C4a acts as anaphylotoxin.

**Q2/ Choose the correct answer (30 marks)**

1- The first blood vessel dilation depends on

2- Has an extra domain CH4 **( )**

3- Released by basophil and mast cell **( )**

4- Cause production of Fab **( )**

5- Can fix complement **( )**

6- Receptor found on surface of B cell **( )**

7- Regulate C5b67 **( )**

8- Similar to C1s but in another pathway **( )**

9- Receptor on Neutrophil **( )**

10- Ab has a kappa on one arm and lambda on the other. **( )**

11- Molecule forms pore in the membrane of Ag. **( )**

**(DAF, MBL, MASP1, MASP2, Papain, Histamine, pepsin, IgA, chymotrypsin, IgG, IgM, IgE, protein S, IgD, vetronictine, C3, C5, none of them, C9, C1 INH, Factor H, Factor I, C54b67, activated complement proteins).**

**Q3/ Describe the mechanism of ADCC in parasitic infection (15 marks)**

**Q4/ Choose the correct answer(s) (7 marks)**

1- The first blood vessel dilation depends on

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7- Regulate C5b67

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**(DAF, MBL, MASP1, MASP2, Papain, Histamine, pepsin, IgA, chymotrypsin, IgG, IgM, IgE, protein S, IgD, vitronectin, C3, C5, none of them, C9, C1 INH, Factor H, Factor I, C54b67, activated complement proteins).**

**Q5/** What happens when MHC I bind with CD8+ celland when MHC II binds with CD4+ cells? Discuss and draw figures **(8 marks)**

**Q6/** Write about T cell activation and eosinophilic inflammation **(10 marks)**

**Q7/** Draw a diagram showing the relation between macrophage, T cell and NK cell regarding their cytokines **(10 marks)**

**Q8/** Draw a diagram of lymph node and indicate all parts on it **(5 marks)**

**Q9/** Draw a diagram of Ag presentation and processing of a pathogen that lives inside the cell **(5 marks)**

**Q10/** Describe the activation loop of C3 in the alternative pathway **(5 marks)**