Quiz answers

Round one: Histology
1. Vitamin D
2. Spirochaetes
3. Köhler illumination
4. Picric acid
5. Brunner's glands
6. Holzer's method, which stains astrocytic processes and glial fibres. Phil Steart worked in the Cellular Pathology laboratory at Southampton (now retired).
7. Ganglion cells
8. Ki67 and p53

Round two: Biochemistry
1. Aspartate transaminase
2. Coefficient of variation
3. Pancreas
4. Metabolic acidosis
5. CSF (Cerebrospinal fluid)
6. HCG (Human chorionic gonadotropin)
7. Potassium, Calcium, Magnesium and ALP.
8. Chloride
9. 'The Hook effect'
10. Ion-Selective Electrode

Round three: Haematology
1. Lucy Wills
2. SF3B1 mutation
3. AIDS in 1993 due to blood and plasma transfusions
4. Horseshoe crabs - a consequence of using copper-based hemocyanin to transport oxygen
5. Allows the red cells to twist through capillaries easily
6. 2-3 million are produced per second
7. Romanowsky type stains - named after Dmitri Leonidovich Romanowsky 1861-1921
8. Age >65 years, Clinical stage Binet B-C or Rai I-IV, Serum β 2 macroglobulin >3.5ug/ml, IGHV unmutated, TP53 status deletion 17p (FISH) and/or TP53 mutation (sequencing)

Round four: Cellular pathology
1. *(Haematoxylum campechianum).* Campeche in Mexico
2. Melanosomes. Stages I-IV
3. Mrs June Almeida at St. Thomas' Hospital, London
4. CD4 (T Helper) and CD8 (T Cytotoxic)
5. Frederick Mohs the American medic who devised the technique
6. Low molecular weight cytokeratin (MW 8 and 18). Named after Carol Anne Makin at pH 5.2 first published in 1984 J. Clin. Pathol 1984; 37(9); 975-83.

7. GABAergic neurons located in the cerebellum. They are named after their discoverer, Czech anatomist Jan Evangelista Purkyně, who characterized the cells in 1839. The Bielschowsky technique is a silver staining method used in histochemistry for the visualization of nerve fibers, including multipolar interneurons in the cerebellum
8. Categories A-E (5). A= specimens requiring transfer from container to processing cassette only, B= Specimens requiring transfer but with standard sampling, counting, weighing or slicing, C= Simple dissection required sampling needing a low level of diagnostic assessment and or preparation, D= Dissection and sampling required needing a moderate level of assessment, E= Specimens requiring complex dissection and sampling methods

Round five: Cytology
1. Negative
2. Eosin/azure
3. Charcot-Leyden crystals
4. Orphan Annie Nuclei
5. Irregular or disturbed chromatin patterns
6. a. Moulding and d. Salt and pepper chromatin
7. The Milan System
8. a. Histiocytes, b. Lymphocytes, c. Directly sampled endometrial cells and e. Immature squamous metaplasia

Round six: Immunology
1. C3 nephritic factor
2. Myeloma / CD38
3. 28 days
4. IL2RG
5. Primary biliary cirrhosis (PBC)
6. Aquaporin-4 (AQP4) IgG antibodies
7. Omega-5-gliadin
8. Type 1 hypersensitivity

Round seven: Microbiology
1. Oval to ellipsoidal cysts with fibrils and nuclei consistent with *Giardia duodenalis.*
2. Infection with *Pasteurella spp.*
3. *Enterobius vermicularis* infection (threadworm)
4. Infection occurs as the parasite penetrates from faecally contaminated soil into the skin. The parasite then migrates to the lungs and pharynx before being swallowed and burrowing into the intestinal mucosa. Each day thereafter, the parasite releases a few dozen eggs that develop into juveniles, which are passed in the faeces and have eventually have the potential to penetrate the skin of another human
5. Class I or II, but not Class III
6. HIV
7. *Staphylococcus aureus*

8. All empirically-prescribed, systemic antibiotic therapy should be reviewed. Continuation of such empirical therapy should be discouraged, where clinically appropriate