VII) Choose the correct answer: (4 marks)

1)The best definition of gangrene is :

a. Necrosis of tissue caused by ischeamia

b. Gas production in dead tissue

c. Digestion of living tissue by saprophytic bacteria.

d. Necrosis of tissue caused by bacterial toxins.

2)All are oncogenic viruses except:

a. Human papilloma virus.

b. Epstein-Barr virus;

c. Smallpox virus.

d. Hepatitis B virus.

3) All of the following are syphilitic lesions except:

a. Chancre

b. Codyloma lata

c. Condyloma accuminata

d. Gumma

4) **Tuberculoid leprosy is characterized by:**

a. Skin nodules

b. Hypopigmented skin macules

c. Nasal septal perforation.

d. Visceral lesions.

GOOD LUCK

Note : Oral exam after the written exam directly (7/6/2017)

KaferElsheik University *Faculty of Dentistry* *General Pathology*

Pathology Exam for second year students

- Date: 7-6-2017 **Final general pathology Exam** **-Total marks: 60**
-Time Allowed: 3 hour **-Two papers**

Answer the following questions, all questions to be answered:

I) Define the following terms: (12 marks)

1-Catarhal inflammation . 2- Granulation tissue. 3-Infarction 4- septiceamia
5-Apportonistic infections. 6-TNM staging system malignant tumors.

II) Answer the following : (6 marks)

1-Whate are sites of primary tuberculosis ?
2-Differences between Primary and secondary tuberculosis?
3- Mention the complications of Chronic fibrocaseous tuberculosis ?

II) Compare between the following : (6 marks)

1-Cellulitis and abscess.
2-Necrosis and apoptosis.

III) Give examples of : (10 marks)

1)One example for each of type I and type IV hypersensitivity reactions.
2) One example of enzymatic necrosis and fat necrosis.
3) Two examples of pathological hyperplasia.
4) Two examples of paraneoplastic syndroms and the causative tumor of each syndrome.
5) Five benign mesenchymal tumors.

IV) Enumerate: (12 marks)

1) Sites of extraintestinal amobiasis.
2) Only four Locally malignant tumors.
3) Primary and secondary tuberculosis .

V) Describe morphology (Gross and Microscopic) of malignant tumors and enumerate causes of death in malignancy. (6 marks).

VI) Asses the following statements (True or False): (4 marks)

1-Metaplasia means transformation of differentiated tissue to another differentiated one.

2- Fracture long bones is one of the common causes of air embolism

3- Amyloidosis is essentially intracellular protein deposition.

4- Hyperchromasia is one of the characters of dysplasia.

امتحانات يونيو ٢٠١٦
الفرقة الثانية

Kafrelsheikh Universiy	جامعة كفرالشيخ
Faculty of Dentistry	كلية طب الأسنان
Dental Biomaterials Department	قسم خواص المواد الحيوية لطب الاسنان
Date:5/6/2016	التاريخ: 5-6- 2016
Time Allowed: Three hou	الزمن: ثلاث ساعات

Complete the following: **10 marks**

1. During heating of investment material, as the temperature rises to about 105°C, calcium sulfate dihydrate starts..... when the investment mass is still heated to the proper temperature for casting the metal, ... calcium sulfate will be formed.
2. Increased water/powder ratio of investment material will .....setting time and .....thermal expansion.
3. Crystalline structure of hardened gold alloys is.....,while softened alloy has .....crystalline structure.
4. In solid-solution alloys, cored structures have ..... strength and ..... corrosion resistance than homogenous ones.
5. Base metal alloys are alloys which do not contain..... or.....or.....but they resist corrosion by ..... process.
6. Investment molds for base metal alloys must be capable of .....high casting temperatures and compensate .....
7. The tendency of liquids to reduce their surface to the smallest possible area is called.....
8. Self-curing acrylic resin exhibits ..... porosity and ..... molecular weight if compared with heat cure type.
9. At the same time and temperature,1 gm Mercury (Hg) dissolves.....mg Tin, ...mg Silver, and.....mg Cupper.

10. Amalgam is a visco-elastic material ..... phases represent the viscous portion, while..... phases represent the elastic portion.
11. Dental cements are generally classified according to their setting mechanism into ..... &.....
12. Cements for pulp protection should provide different types of isolation that involve..... &.....&.....
13. The main applications of composites in dentistry are..... &..... &.....
14. During light curing of composites, the intensity of light is ..... proportional to the distance from the light source.
15. The finer the particle size of calcium sulphate hemihydrate will ..... the setting reaction rate. While small quantity of borax could.....
16. The strength of gypsum products depends, primarily, on the amount of ..... in set material, and on the initial ..... ratio of the mix.
17. Impression materials can be classified according to behavior after setting into..... and .....
18. Dimensional stability of rubber base impression materials in a descending manner is ..... &.....&.....&.....
19. The direction of setting reaction in agar impression is from .....to..... while in alginate impression it is from.....to.....
20. The most flexible impression material is.....while, porous stone model may be obtained from.....rubber impression material.

Give reasons: **30 marks**

1- The atoms at the surface of solids possess more energy than do those in the interior?
2- Grain boundaries of alloys differ from their grains proper?
3- The importance of copper in gold alloys?
4- Calcium hydroxide could be utilized in very deep carious lesions?

5- Although the polycarboxylate cements are acidic but, they are not as irritant as zinc phosphate?

6- Presence of zinc in dental amalgam is considered as advantage and disadvantage at the same time?

7- Denture base material must have high hardness and impact strength?

8- Some dentures have granular porosities?

9- Glazing is done to porcelain restorations?

10- Good condensation of porcelain is an important process during porcelain building up?

11- Shrinkage of porcelain during the firing process?

12- Corrosion of dental amalgam must be avoided?

13- UDMA resins are superior to BIS-GMA ones?

14- Development of internal stresses within the compound impression?

15- Sodium phosphate was added to alginate impression?

True or false: **5 marks**

1. Plasticizers usually reduce the strength, hardness, rigidity and glass transition temperature of the resin. ( ).
2. Investment material can be described as a ceramic material that is suitable for forming a mold into which a metal or alloy is cast. ( ).
3. Refractory material percentage in investment materials varies from 20-25%. ( ).
4. Eutectic alloys are brittle, strong, and have low melting rang. ( ).
5. In casting gold alloys, it combined with base metal elements only.( ).
6. Nickel-chromium (Ni / Cr) alloys are commonly used for crown and bridge cast restorations, while cobalt-chromium are used in partial denture framework. ( ).
7. Increasing the amount of glassy phase in dental porcelain, lowers the resistance to crack propagation but increases the translucency. ( ).

8. Nanocomposites are unique as, they combine strength of hybrid composite and the high polishability of microfilled composite. ( ).
9. Dual cured composites are supplied in single paste system. ( ).
10. During mixing of stone, an increasing in water temperature from 0-100 could accelerate setting reaction in all cases. ( ).

III- GIVE SHOT NOTES ON TWO ONLY QUESTIONS: 15 marks

1- Step by step class IV composite restoration?
2- Effect of fillers addition on properties of dental composites?
3- Ideal requirements of alloys used in metal-ceramic restorations?
4- Different classifications of dental porcelains?
5- Accuracy of condensation silicon impression?

IV- COMPARE:

1. Addition polymerization **AND** condensation polymerization reactions? **4 marks.**

2. Between Glass ionomers **AND** Zinc-oxide eugenol cements. (composition - setting reaction - biological effect-uses). **6 marks.**

GOOD LUCK

٨/٢٢

الفرقة الثالثة مايو ٢٠١٦ د/ امانى حلاوة

Kafrelsheikh University
Faculty of Oral and Dental Medicine
Final written exam
Date: 30/6/2016
Time allowed: 3 hour
Total mark: 60

جامعة كفر الشيخ
كلية طب الأسنان
امتحان التحريري
التاريخ: ٢٠١٦/٦/٣٠
مدة الأمتحان: ٣ ساعات
درجات الامتحان : ٦٠ درجة

"مادة : الميكروبيولوجي"

I- Choose the best answer: (20 marks, 0.5 mark/choice)

1) **IgM immunoglobulin is .....**
   a) Univalent.
   b) Bivalent.
   c) Trivalent.
   d) Pentavalent.

2) **..... is responsible for humoral immune responses.**
   a) Dendritic cells.
   b) B-lymphocytes.
   c) Macrophages.
   d) T-lymphocytes.

3) **IgE has a role in.....**
   a) B cell activation.
   b) The primary immune response.
   c) Primary and secondary response.
   d) Allergic responses.

4) **Vibrio cholera is.....**
   a) Filamentous bacteria
   b) Gram positive cocci
   c) small slightly curved rods
   d) Small bacteria that lack of a rigid cell wall.

5) **Borrelia, Treponema are.....**
   a) Filamentous bacteria
   b) Gram positive cocci
   c) intracellular parasites.
   d) Spirochetes

6) **Rickettsiae and Chlamydiae are.....**
   a) Filamentous bacteria
   b) intracellular parasites.
   c) Small bacteria that lack of a rigid cell wall.
   d) Gram positive Bacilli

7) **Diseases Attributable to Invasion by S pyogenes include.....**
   a) Erysipelas
   b) Cellulitis
   c) Puerperal fever:
   d) All of the above

B) Cells involved in acquired immunity
- Antigen presenting cells as Dendritic cells, macrophages, and B-lymphocytes
- B cells (B-lymphocytes)
- T cells (T-lymphocytes).

3) Define enzymes and toxins produced by Strept. Pyogenes?

a) Streptokinase (Fibrinolysin): digests fibrin, allowing the bacteria to escape from blood clots.
b) Deoxyribonucleases: degrade DNA (DNases) and facilitate the spread of streptococci in tissue.
c) Hyaluronidase: it splits hyaluronic acid of connective tissue. Thus aids in spreading infection.
d) Pyrogenic Exotoxins (Erythrogenic Toxin) They act as superantigens & are associated with streptococcal toxic shock syndrome and scarlet fever.
e) Hemolysins: β-hemolytic group A S pyogenes elaborates two hemolysins (streptolysins) that lyse the membranes of erythrocytes and other cell types.

4) Identify the general steps in viral replication cycles?

a) Attachment via interaction of a virion with a specific receptor site on the surface of a cell.
b) Penetration: After binding, the virus particle is taken up inside the cell "penetration or engulfment". This is mediated by receptor-mediated endocytosis, direct penetration of virus particles across the plasma membrane or fusion of the virion envelope with the plasma membrane of the cell.
c) Uncoating: It is the physical separation of the viral nucleic acid from the outer structural components of the virion.
d) Expression of viral genomes and synthesis of viral components: This is the synthetic phase of the viral replicative cycle.
e) Morphogenesis: Newly synthesized viral genomes and capsid polypeptides assemble together to form progeny of virus.
f) Release.

5) Enumerate three DNA-containing viruses and three RNA-containing viruses?

I. DNA-Containing Viruses	II. RNA-Containing Viruses as:
a) Polyoma viruses	a) Picorna viruses
b) Herpes viruses	b) B. Hepeviruses
c) Adenoviruses	c) C. Reoviruses
d) Papilloma viruses	d) D. Flaviviruses
e) Hepadnaviruses	e) E. Coronaviruses
	f) F. Retroviruses

VI- Long answered questions: (10 marks, 5 mark/question)

1- Write on the virulence factors of cariogenic bacteria, confirm your answer with an example?

8) Streptococcal Toxic Shock Syndrome and Scarlet Fever are caused by.....

a) Streptokinase (Fibrinolysin).
b) B. Deoxyribonucleases.
c) C. Hyaluronidase.
d) D. Pyrogenic Exotoxins (Erythrogenic Toxin)

9) A 60-year-old-man has a 5-month history of progressive weakness and a weight loss with intermittent fever, chills, and a chronic cough productive of yellow sputum, occasionally streaked with blood. A sputum specimen is obtained, and numerous acid-fast bacteria are seen on the smear. Culture of the sputum is positive for Mycobacterium tuberculosis. **Which treatment regimen is most appropriate for initial therapy?**

a) Isoniazid and rifampin
b) Sulfamethoxazole–trimethoprim and streptomycin
c) Isoniazid, rifampin, pyrazinamide, and ethambutol
d) Isoniazid, cycloserine, and ciprofloxacin

10) .....Spore-Forming, aerobic G+ve Bacilli

a) Bacillus species
b) Clostridium Species
c) Actinomycetes
d) mycobacteria

11) .....Spore-Forming, anaerobic G+ve Bacilli

a) Bacillus species
b) Clostridium Species
c) Pneumococci.
d) Corynebacterium

12) ..... can cause food poisoning.

a) B. cereus
b) Corynebacterium
c) Actinomycetes
d) Pneumococci.

13) Acyclovir and lamivudine are examples for.....

a) Reverse Transcriptase Inhibitors
b) Protease Inhibitors
c) Nucleoside and Nucleotide Analogs
d) Gyrase inhibitors

14) ..... is reverse transcriptase inhibitor used in treatment of viral infection.

a) ribavirin
b) Cidofovir.
c) Nevirapine
d) ritonavir

3) Acinetobacter species are ..... **(aerobic gram-negative bacteria) or coccobacilli or cocci (diplococcici)**
4) **(Aflatoxin)** are carcinogenic toxins produced by *Aspergillus flavus*.
5) Infectious hepatitis is caused by **(HAV)**
6) Serum hepatitis results from **(HBV and/ or HDV).**
7) Non-A, non-B hepatitis is caused by **(HEV and/ or HCV)**
8) The mass of entangled hyphae during growth is called ..... **(a mycelium).**
9) Biological functions of complement include:
   a) **Cell lysis through insertion of MAC into cell membrane.**
   b) **Opsonization**
   c) **Inflammatory functions.**

IV- match the following: (5 marks, 1 mark/match)

1-	Retroviruses	**a.**	include rotaviruses which cause gastroenteritis.
2-	Reoviruses of humans	**b.**	are single-stranded, positive-sense RNA as HEV
3-	coronaviruses	**c.**	include enteroviruses and hepatitis A virus.
4-	Hepeviruses	**d.**	include human immunodeficiency viruses
5-	Picorna viruses	**e.**	cause severe acute respiratory syndrome (SARS).

1→ d , 2→ a , 3→ e , 4→ b , 5→c

V- Short answered questions: (15 marks, 3 mark/question)

1) Mention the ways of gene transfer?
- within individual cell (transposition)
- between cells through:
  - Transformation: involves release of DNA into environment by cell lysis followed by its direct uptake by the recipient cell.
  - Transduction: involves transfer of DNA from donor to recipient by bacteriophage.
  - Conjugation: involves plasmid mediated transfer by direct wall to wall contact.

2) List cells involved in innate and adaptive immune response?

A) Cells involved in innate immunity
- Phagocytic cells as Macrophages, polymorphonuclear leukocytes (neutrophils).
- Inflammatory cells as Mast cells, Eosinophiles and Basophiles
- Natural Killer Cells (NK cells).

15) **.....is a large peptide that blocks the virus and cellular membrane fusion step involved in entry of HIV-1 into cells.**
   a) indinavir
   b) ritonavir
   c) Fuzeon
   d) Acycloguanosine

16) **Syphilis is caused by.....**
   a) Mycobacteria
   b) H. pylori
   c) Treponema Pallidum
   d) Pseudomonas

17) **H. pylori is a major risk factor for .....**
   a) gastric cancer.
   b) hepatic cancer.
   c) nephritis.
   d) urinary cancer.

18) **The genome of Herpes viruses is .....**
   a) linear, double-stranded DNA.
   b) cilcular, single-stranded DNA.
   c) Positive sense, single-stranded RNA
   d) negative sense, single-stranded RNA

19) **Hepadnaviruses cause .....**
   a) warts and are causative agents of genital cancers in humans
   b) acute and chronic hepatitis
   c) Merkel cell skin carcinomas
   d) progressive multifocal leukoencephalopathy

20) **Human papillomaviruses are responsible for.....**
   a) warts and are causative agents of genital cancers in humans
   b) acute and chronic hepatitis
   c) Merkel cell skin carcinomas
   d) Progressive multifocal leukoencephalopathy

21) **Infectious mononucleosis is caused by.....**
   a) Varicella zoster virus,
   b) Cytomegalovirus (CMV)
   c) Epstein-Barr virus (EBV)
   d) Herpes viruses 8

38) **HIV binds to .....receptor on cells of the immune system.**
a) CD4
b) CD8
c) CD21
d) CD3

39) **..... Is an example of RNA-containing viruses.**
a) Herpes viruses
b) Hepadnaviruses
c) Papilloma viruses
d) Hepeviruses

40) **Epstein-Barr virus recognizes ..... receptor on B cells.**
a) CD3
b) CD8
c) CD21
d) CD19

II- True or false: (5 marks, 0.5 mark/sentence)

1) Genetic variation in bacteria takes place by mutation and/ or gene transfer. (√)
2) The cardinal signs of acute inflammation are redness, heat and swelling. (x)
3) Quellung Reaction is used to identify pneumococci. (√)
4) Amantadine specifically inhibit influenza A viruses by blocking viral uncoating. (√)
5) Saquinavir was the first protease inhibitor to be approved for treatment of HIV infection. (√)
6) H pylori are oxidase positive and catalase positive. (√)
7) P aeruginosa grows is oxidase negative and does not ferment carbohydrates. (x)
8) Shingles is a reactivation of an earlier varicella infection. (√)
9) Dermatophytes are inoculated onto Sabouraud's agar. (√)
10) Some species of fungi are dimorphic. (√)

III- Complete the following: (5 marks, 0.5 mark/space filling)

1) Treatment of H. pylori is ..... **(Triple therapy with metronidazole, bismuth subsalicylate and amoxicillin for 14 days.**
2) P aeruginosa infection is treated by ..... **(Broad spectrum penicillin with aminoglycoside as tobramycin).**

22) Presence of multinucleated giant cells indicates the presence of.....

a) HSV-1
b) HSV-2
c) varicella-zoster virus
d) all of the above.

23) ..... is the common cause of post-transfusion hepatitis

a) HAV
b) HBV
c) HCV
d) HEV

24) ..... is responsible for enterically-transmitted hepatitis.

a) HAV
b) HBV
c) HCV
d) HEV

25) ..... causes fulminant hepatitis in pregnant women.

a) HAV
b) HBV
c) HCV
d) HEV

26) Fungal infections are called .....

a) Mycology
b) Mycoses
c) Infectious mononucleosis
d) Oral thrush

27) Dermatophytosis means.....

a) cutaneous mycoses
b) Subcutaneous mycoses
c) systemic mycoses
d) all of the above

28) Candidal invasion of the nails and around the nail plate causes.....

a) Intertriginous infection
b) Tinea Capitis
c) Onychomycosis
d) Dermatophytosis

29) amphotericin B is .....

a) Fungicidal
b) fungistatic

30) ..... is homo-fermentative bacteria.

a) Lactobacillus acidophilus.
b) S. mutans,
c) S. sobrinus
d) Lactobacillus fermentum

31) ..... is Hetero-fermentative bacteria.

a) Lactobacillus acidophilus.
b) S. mutans,
c) S. sobrinus
d) Lactobacillus fermentum

32) ..... is more cariogenic than .....

a) S. mutans, S. sobrinus
b) S. sobrinus, S. mutans
c) S. pyogen, S. sobrinus
d) L. brevis, S. sobrinus.

33) Periodontitis means.....

a) inflammation of alveolar bone
b) gingival inflammation
c) inflammation of the supporting tissues of the teeth.
d) All of the above

34) Subgingival plaque have a dense zone of mostly .....

a) Gram-negative bacteria
b) Gram-positive bacteria

35) ..... is a major virulence factor of S pyogenes.

a) M Protein
b) T Substance
c) H antigen
d) All of the above

36) Envelope of HBV contains.....

a) HBcAg
b) HBsAg
c) HBsAg and lipid.
d) HBeAg

37) HBV vaccinated person has antibodies against.....

a) HBcAg
b) HBsAg
c) HBeAg
d) All of the above

Microbiology

1. Acid production (acidogenicity)

- Lower the pH < 5.5, drives dissolution of calcium phosphate of the tooth enamel.
- Inhibit the growth of beneficial bacteria.
- Further lower the pH, promote progression of the carious lesion

2. Acid tolerance (aciduricity)

- Cariogenic bacteria can thrive under acidic conditions.
- This results in dominance of the plaque by cariogenic bacteria

3. Glucan formation

- Glucan mediated biofilms are more resistant to mechanical removal
- Bacteria in these biofilms are more resistant to antimicrobial treatments
- Allows the cariogenic bacteria to stick onto the teeth and form a biofilm

Streptococcus mutans

- S. mutans is able to metabolize a number of sugars and glycosides (such as glucose, fructose, sucrose, lactose, galactose, ...etc) producing high amounts of acid.
- They possess acid tolerance.
- They metabolize sucrose to synthesize insoluble extracellular polysaccharides, which enhance their adherence to the tooth surface and encourage biofilm formation.
- S. mutans produces also mutacins (bacteriocins), what is important factor in the colonization and establishment of S. mutans in the dental biofilm.
- They have adhesins as wall-associated protein A (WapA), S. mutans LraI operon (SloC) and glucan-binding proteins A and C

2- Write on stages of plaque-associated gingivitis?

1) STAGE 1: The Initial Lesion (not visible clinically)

- Develops within 4 days of plaque accumulation.
- Micro-flora consists mostly of Gram-positive cocci (Streptococcus spp.).
- Histologically, there is an acute inflammator y reaction.
- The lesion is characterized by increased flow of GCF, migration of PMN leukocytes into the gingival sulcus from the local vasculature.

2) STAGE 2: The Early Lesion

- Appears after approximately 7 days of plaque accumulation, detectable clinically as gingivitis.
- Lower oxygen tension and the plaque flora shifts to more Actinomyces spp., spirochaetes and capnophilic organisms.
- Histologically, the gingival infiltrate is dominated by lymphocytes (75%) and macro-phages, few plasma cells.

3) STAGE 3: Established Lesion

- Histologically, there is increase in the size of the inflammatory lesion within the affected gingiva, with a shift to a predominance of plasma cells and B-lymphocytes.
- The junctional and pocket epithelia are heavily infiltrated with neutrophils.
- Plasma cells are found at the periphery of die lesion, while macrophages and lymphocytes are present in the lamina propria of the pocket wall.

Good luck

جامعة كفر الشيخ

كلية طب الأسنان

شئون التعليم والطلاب

Kafrelsheikh University

Faculty of Dentistry

Education & Students Affairs

استمارة غياب

التاريخ : / /

المادة :

الفرقة :

رقم الجلوس	الاســـــم	رقم اللجنة

١-ملاحظ اللجنة

. الاسم :

. التوقيع :

٢-مراقب اللجنة :