

Second Semester Examination-2018**M.Sc. NUTRITION & DIETETICS**

Paper Code: NUD-203

Full Marks : 40

Time: 2 Hours

Write the answer for each unit in separate sheet**Unit-17****(Food Microbiology)****Answer question no.1 & any three from the rest****1. Answer any five questions of the following 1×5=5**

- a) Thermophiles grows optimally at the temperature range of
i) 8 to 45°C ii) 25 to 30°C iii) 0 to 20°C iv) 50 to 60°C
- b) Type of yeast used for alcoholic fermentation is –
i) *Saccharomyces cerevisiae*
ii) *Streptococcus thermophilus*
iii) *Acetobacter acceti*
iv) *Clostridium botulinum*
- c) Common food poisoning microbes are –
i) *Clostridium* and *Salmonella*
ii) *Clostridium* and *E.coli*
iii) *E.coli* and *Salmonella*
iv) *Clostridium* and *streptococcus*
- d) Aflatoxin is produced by
i) *Aspergillus Sp.*
ii) *Salmonella Sp.*
iii) *Fusarium Sp.*
iv) *Streptococci Sp.*
- e) The target micro-organism in canning is-
i) *Clostridium botulinum*
ii) *Streptococcus thermophilus*
iii) PA 3679
iv) *Lactobacillus bulgaricus*
- f) In spore forming bacteria maximum resistance occurs at P^H of
i) 4 ii) 5 iii) 6 iv) 7
- g) Which of the following is called cafetene germ?
i) *Escherichia coli* ii) *Clostridium perfringens*
iii) *Bacillus subtilis* iv) *Vibrio cholerae*

(Turn Over)

2. a) What do you mean by autotrophs and chemolithotrophs? **2+3=5**
- b) How p^H and oxidation-reduction potential (Eh) can affect the bacterial growth and survivability?
3. a) Write the name of any four micro-organisms causing food spoilage.
- b) Write down the basic difference between gram positive and gram negative organism.
- c) What do you mean by active water (a_w)? **2+2+1=5**
4. a) What do you mean by differential media with a suitable example?
- b) How will you get a single colony from a mixed bacterial culture with reference to any one technique? **2+3=5**
5. a) State the nutritional importance of fermented food with special reference to gut physiology.
- b) Write down the spoilage of flesh foods with mentioning spoilage causing micro-organism. **3+2=5**
6. a) Define growth rate and generation time.
- b) Briefly discuss about the bacterial growth cycle with a suitable diagram. **2+3=5**
7. a) What are probiotics? Explain with example.
- b) Discuss their role in dairy products. **3+2=5**

Unit- 18**(Nutritional Anthropology)****Use separate answer script for each unit****Answer question no.1 & any three from the rest****1. Answer any five questions from the following:****1×5=5**

- a) In case of morbid obesity, BMI is
 i) ≥ 35 ii) > 35
 iii) ≥ 40 iv) >40
- b) According to IAP & ICMR classification, normal weight for age is
 i) $>80\%$ ii) $>90\%$
 iii) $>100\%$ iv) $>110\%$
- c) Infant meter is used for measuring
 i) Weight ii) Height
 iii) Length iv) Skinfold thickness
- d) In case of men, android obesity is indicated when waist-hip ratio is
 i) >9 ii) >9.5 iii) >1 iv) None of these
- e) Her Pender caliper is used to measure
 i) Waist circumference ii) MUAC
 iii) Head circumference iv) Skin fold thickness.
- f) Normal weight for height is
 i) 90%-100% ii) 90%-110%
 iii) 100%-120% iv) 90%-120%
- g) A vertical skinfold just below the lower border of the scapula is the skin fold site of
 i) Suprailliac ii) Supra scapular
 iii) Subscapular iv) None of these.
- h) In case of male cut-off value of PBF is
 i) $\leq 20\%$ ii) $\leq 25\%$
 iii) $\leq 30\%$ iv) $\leq 35\%$
2. a) What do you mean by anthropometry? 1+(2+2)=5
 b) Write the advantages and disadvantages of anthropometric measurement for assessing nutritional status.
3. a) What is weight for age? 2+2+1=5
 b) Classify weight for age according to Gomez.
 c) Write the cut-off value of weight for height to indicate PEM
4. a) Describe the process of measuring skin fold thickness. 2+1+2=5
 b) Write the landmark of biceps to measure skinfold thickness.
 c) Mention the limitations of BMI for assessing nutritional status.

5. a) How can you determine the body density, percentage of Body fat and LBW of a female, having age 26 yrs., body Wt. 60 kg, Iliac skinfold is 21 mm and arm skinfold is 17 mm.

$$\text{Formal body density} = 1.0764 - (0.00081 \times \text{iliac skinfold}) - (0.00088 \times \text{arm skinfold})$$

$$\text{Percentage of body fat} = \left(\frac{4.570}{1.0444} - 4.142 \right) \times 100 \quad \mathbf{4+1=5}$$

- b) Write the names of obesity type of male and female.

6. a) Mention the steps involved in determining BMR by using anthropometric parameters **3+2=5**
 b) What do you mean by lean body mass?
