Assignment 10

The due date for submitting this assignment has passed. Due on 2019-04-10, 23:59 IST.
As per our records you have not submitted this assignment.

1) Match the mycotoxins in grain {A, B, C, D} given in column I with the toxigenic fungi (i, ii, iii, iv) in the column II.

<table>
<thead>
<tr>
<th>Column I</th>
<th>Column II</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Aflatoxins</td>
<td>(i) Fusarium proliferatum</td>
</tr>
<tr>
<td>B. Ochratoxin A</td>
<td>(ii) Aspergillus flavus</td>
</tr>
<tr>
<td>C. Fumonisins</td>
<td>(iii) P. verrucosum</td>
</tr>
<tr>
<td>D. Citreoviridin</td>
<td>(iv) Eupenicillium ochrosalmonenum</td>
</tr>
</tbody>
</table>

a. A- (ii), B- (iii) C- (i) D- (iv)
b. A- (iii), B- (ii) C- (i) D- (iv)
c. A- (iii), B- (i) C- (iv) D- (ii)
d. A- (ii), B- (iv) C- (iii) D- (i)

No, the answer is incorrect.
Score: 0
Accepted Answers:
- a.
Which among the following depicts the mechanism of the action of ozone in disinfestation?

a. Unstable third oxygen combine with organic & inorganic molecules to destroy them through oxidation.

b. Neurons of insects are destroyed when they inhale ozone.

c. Stable third oxygen combine with organic & inorganic molecules to destroy through oxidation.

d. Both stable third oxygen can combine with organic & inorganic molecules destroy them through oxidation and neurons of insects are destroyed when inhale ozone.

No, the answer is incorrect.
Score: 0
Accepted Answers:
a.

3) A silo of 8 m dia and 20 m height is loaded with food grains of density 800 kg m$^{-3}$. If the coefficient of friction and pressure ratio be 0.4 each, then what will be the lateral pressure (kN m$^{-2}$) when the silo is filled up to 3/4th height?

a. 54.72

b. 31.92

c. 27.42

d. 47.92

No, the answer is incorrect.
Score: 0
Accepted Answers:
c.

4) In hyperspectral imaging equipment, ................... records intensities of individual pixels for one wavelength in the data collection range.

a. Light source

b. Tunable filters

c. Imaging charge couple device (CCD)

d. Imaging optics

No, the answer is incorrect.
Score: 0
Accepted Answers:
a.
5) In storage bin the horizontal pressures exerted by material on the walls cannot be calculated using ......................... 
   a. Janssen’s theory
   b. Airy’s theory
   c. Coulomb’s theory
   d. Karl-Fisher theory

No, the answer is incorrect.
Score: 0
Accepted Answers: 

d.

6) .................. method of ozone generation produces a hazardous fissionable material.
   a. Corona discharge
   b. Electrolytic
   c. Photochemical
   d. Radiochemical

No, the answer is incorrect.
Score: 0
Accepted Answers: 

d.
A 50 m high silo is fully loaded with 500 tonnes of grain. The true and bulk densities of the grain are 1500 and 450 kg/m³, respectively. Calculate the diameter of the silo (m) and void fraction of grain in the silo.

a. 6.32 and 0.9
b. 5.31 and 0.7
c. 7.53 and 0.8
d. 6.72 and 0.6

No, the answer is incorrect.
Score: 0
Accepted Answers:
d.

8)
Which of among the following statement is false with respect to hypercube in HSI imaging technology?

a. Shows the volume of data returned by imaging instrument.
b. Illustrates how data from imaging instruments get reinforced.
c. It does not provide spectral signature for every pixel.
d. It is a closed, compact, convex figure whose one skeleton consists of groups of opposite parallel line segments aligned in each of the space's dimensions.

No, the answer is incorrect.
Score: 0
Accepted Answers:
c.

9)
The wavelength range of Fourier transform near infrared spectroscopy (FT NIR) is ...........

a. 780 – 2500
b. 580 – 1500
c. 980 – 3500
d. 1080 – 4500

No, the answer is incorrect.
10) Which of the following statement is true with respect to grain storage?

   a. Heat from external sources penetrates into the grain bulk at a very faster rate.
   b. Heat generated by microbes affect grain to a larger extent than the temperature fluctuations.
   c. The presence of dockage is inductive for the development of insect pests.
   d. High bulk density means the grain is infested or infected.

No, the answer is incorrect.

11) The diameter of a circular silo is 2 m and its height is 6 m. It was filled with grain whose bulk true densities are 900 and 1200 kg/m$^3$ respectively. What will be the additional volume requin the bulk density is increased to 850 kg/m$^3$?

   a. 1.10
   b. 1.43
   c. 1.64
   d. 1.75

No, the answer is incorrect.

12) Which of the following is the correct sequence of steps in e-nose analysis?

   a. Classification, Feature extraction, Pre-processing, Decision making
   b. Pre-processing, Feature extraction, Classification, Decision making
   c. Pre-processing, Classification, Decision making, Feature extraction
   d. Feature extraction, Pre-processing, Decision making, Classification,
No, the answer is incorrect.
Score: 0
Accepted Answers:

13) Which of the following is the correct sequence of steps in measurement of spectrum in FTIR analysis?

   a. Quantification, Identification, Conformity
   b. Conformity, Identification, Quantification
   c. Identification, Conformity, Quantification
   d. Quantification, Conformity, Identification,


No, the answer is incorrect.
Score: 0
Accepted Answers:

14) Which among the following is not an acoustic method of insect detection?

   a. Accelerometers
   b. MOSFET
   c. Piezoelectric sensors
   d. Ultrasonic transducers


No, the answer is incorrect.
Score: 0
Accepted Answers:

15) Which among the following is not a grain quality measuring methods?

   a. Near infra-red (NIR) system
   b. Barometric sensor
   c. Electronic nose
   d. Acoustic method

No, the answer is incorrect.
Score: 0
16) The dimensions of triangular pile of grain of bulk density 600 kg/m$^3$ are: length 7.6 m, width 2.1 m. Calculate the weight of grain in kg.

a. 20108.5
b. 13041.9
c. 22034.6
d. 22503.6

No, the answer is incorrect.
Score: 0

17) Which among the following is a chemometric regression analysis applied for HSI analysis?

a. Artificial neural network (ANN)
b. Convolutional neural network (CNN)
c. Support vector machine (SVM)
d. Principal component analysis (PCA)

No, the answer is incorrect.
Score: 0

18) One tonne of grain stored in a bin is cooled by aeration with ambient air at 20 °C at a volume flow rate of 0.11 m$^3$/min tonne. The specific volume of air at 20 °C is 0.8695 m$^3$ kg$^{-1}$. The specific heat of grain and air are 1.67 and 1.0 kJ kg$^{-1}$ K$^{-1}$, respectively. Calculate the time required cooling the grain in the bin.

a. 520.8
b. 420.8
c. 320.8
d. 220.8
19. ............... is the natural method of ozone production.
   a. Corona discharge method
   b. Electrolytic method
   c. Photochemical method
   d. Radiochemical method
   c. 

No, the answer is incorrect.
Score: 0
Accepted Answers:
   d.

20) Match the types of structures for storage of grains (A, B, C, D) given in column I with their examples (i, ii, iii, iv) in the column II.

<table>
<thead>
<tr>
<th>Column I</th>
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<tbody>
<tr>
<td>A. Traditional storage structures</td>
<td>(i) Bunker storage</td>
</tr>
<tr>
<td>B. Improved storage structures</td>
<td>(ii) Shallow bin</td>
</tr>
<tr>
<td>C. Modern storage structures</td>
<td>(iii) Bag type storage</td>
</tr>
<tr>
<td>D. Farm Silos</td>
<td>(iv) Tower silo</td>
</tr>
</tbody>
</table>

   a. A-(ii), B-(i) C-(iii) D-(iv)
   b. A-(ii), B-(i) C-(iii) D-(iv)
   c. A-(iii), B-(i) C-(ii) D-(iv)
   d. A-(iii), B-(i) C-(ii) D-(iv)

No, the answer is incorrect.
Score: 0
Accepted Answers:
c.