

# 18 Animal Nutrition ICAR SEPT 2022

Topic:- GEN KNOW COMMON PHD

1) Colour of the tag used on certified seed bags is[Question ID = 16958][Question Description = 101\_221\_GKD\_SEP22\_Q01]

1. Blue [Option ID = 37829]
2. Purple [Option ID = 37830]
3. White [Option ID = 37831]
4. Golden Yellow [Option ID = 37832]

2) Following are the statements regarding the Usar soil -

- A. It is reclaimed by adding lime.
- B. This soil has pH more than seven.
- C. Paddy crop can be grown in this soil.

Choose the *correct* answer from the options given below:

[Question ID = 16959][Question Description = 102\_221\_GKD\_SEP22\_Q02]

1. A and B only [Option ID = 37833]
2. B and C only [Option ID = 37834]
3. C only [Option ID = 37835]
4. A only [Option ID = 37836]

3) When total utility of a commodity increases, marginal utility will be

[Question ID = 16960][Question Description = 103\_221\_GKD\_SEP22\_Q03]

1. Negative but increasing  
[Option ID = 37837]
2. Positive but decreasing  
[Option ID = 37838]
3. Constant  
[Option ID = 37839]
4. Either positive or negative  
[Option ID = 37840]

4) Where is the headquarter of International Fund for Agriculture Development located?

[Question ID = 16961][Question Description = 104\_221\_GKD\_SEP22\_Q04]

1. Vienna, Austria  
[Option ID = 37841]
2. Rome, Italy  
[Option ID = 37842]
3. New York, USA  
[Option ID = 37843]
4. Berlin, Germany  
[Option ID = 37844]

5) Mid-Oceanic Ridges are one of the important divisions of the ocean floor. In this respect, point out the incorrect statement regarding the 'Mid-Oceanic Ridges'. [Question ID = 16962][Question Description = 105\_221\_GKD\_SEP22\_Q05]

1. It is the largest mountain chain on the surface of the earth [Option ID = 37845]
2. It is a series of interconnected chain within the ocean. [Option ID = 37846]
3. It is characterised by a central rift system [Option ID = 37847]
4. The rift system at the crest is the zone of very low volcanic activity. [Option ID = 37848]

6) Consider the following facts about the union territory of India and point out the one which is incorrect in relation to union territory. [Question ID = 16963][Question Description = 106\_221\_GKD\_SEP22\_Q06]

1. These are the areas under the direct control of central government. [Option ID = 37849]
2. Also known as the 'centrally administered territories. [Option ID = 37850]

3. These territories constitute a conspicuous departure from the unitary feature of India. [Option ID = 37851]
4. There is no uniformity in their administrative systems. [Option ID = 37852]

**7) Variety of flora and fauna are found in the different types of forest in India. In this regard, species of trees like teak, *sal shisham*, *sandalwood*, etc. are found in which of the following type of forests in India?**[Question ID = 16964][Question Description = 107\_221\_GKD\_SEP22\_Q07]

1. Tropical evergreen forests [Option ID = 37853]
2. Tropical thorn forests [Option ID = 37854]
3. Tropical deciduous forests [Option ID = 37855]
4. Montane forests [Option ID = 37856]

**8) The Marginal Preference Theory of consumption behaviour was proposed by**

**[Question ID = 16965][Question Description = 108\_221\_GKD\_SEP22\_Q08]**

1. Armstrong  
[Option ID = 37857]
2. J.K.Hicks  
[Option ID = 37858]
3. Neumann  
[Option ID = 37859]
4. Edmund Cannon  
[Option ID = 37860]

**9) Point out the incorrect statements regarding the service sector in India.**[Question ID = 16966][Question Description = 109\_221\_GKD\_SEP22\_Q09]

1. It is the highest contributor to GDP [Option ID = 37861]
2. It requires skilled labour [Option ID = 37862]
3. It is the fastest growing sector [Option ID = 37863]
4. It is restricted to very few sectors. [Option ID = 37864]

**10) Consider the statements regarding the agriculture sector in India and point out the incorrect statement.**[Question ID = 16967][Question Description = 110\_221\_GKD\_SEP22\_Q10]

1. Agriculture sector is the largest employer of workforce [Option ID = 37865]
2. It has contributed to the Gross Value Added (GVA) [Option ID = 37866]
3. Growth in allied sectors is the major drivers of overall growth in the sector. [Option ID = 37867]
4. Minimum Support Price (MSP) policy is used as to promote crop uniformity. [Option ID = 37868]

**11) In case of related goods, the cross elasticity of demand is**[Question ID = 16968][Question Description = 111\_221\_GKD\_SEP22\_Q11]

1. Low [Option ID = 37869]
2. High [Option ID = 37870]
3. Zero [Option ID = 37871]
4. Unity [Option ID = 37872]

**12) With reference to organic farming in India, consider the following statements :**

- A. The National Programme for Organic Production' (NPOP) is operated under the guidelines and directions of the Union Ministry of Rural Development.
- B. The Agricultural and Processed Food Products Export Development Authority' (APEDA) functions as the Secretariat for the implementation of NPOP.
- C. Sikkim has become India's first fully organic state.

Choose the *correct* answer from the options given below:

**[Question ID = 16969][Question Description = 112\_221\_GKD\_SEP22\_Q12]**

1. A and B only  
[Option ID = 37873]
2. B and C only  
[Option ID = 37874]
3. C only  
[Option ID = 37875]
4. A, B and C

[Option ID = 37876]

13) With reference to the circumstances in Indian agriculture, the concept of "Conservation Agriculture" assumes significance. Which of the following falls under the Conservation Agriculture ?

- A. Avoiding the monoculture practices.
- B. Adopting minimum tillage.
- C. Avoiding the cultivation of plantation crops.
- D. Using crop residues to cover soil surface.
- E. Adopting spatial and temporal crop sequencing/ crop rotations.

Choose the *correct* answer from the options given below:

[Question ID = 16970][Question Description = 113\_221\_GKD\_SEP22\_Q13]

- 1. A, C and D only [Option ID = 37877]
- 2. B, C, D and E only [Option ID = 37878]
- 3. B, D and E only [Option ID = 37879]
- 4. A, B, C and E only [Option ID = 37880]

14) Consumers are likely to get a variety of goods in which kind of market competition[Question ID = 16971][Question Description = 114\_221\_GKD\_SEP22\_Q14]

- 1. Monopoly [Option ID = 37881]
- 2. Duopoly [Option ID = 37882]
- 3. Oligopoly [Option ID = 37883]
- 4. Monopolistic [Option ID = 37884]

15) What is the correct chronological order of the following laws enacted for the conservation and protection of environment ?

- A. Environment (Protection) Act.
- B. Water (Prevention & Control of Pollution) Act.
- C. Air (Prevention & Control of pollution) Act.
- D. National Green Tribunal Act.

Choose the *correct* answer from the options given below:

[Question ID = 16972][Question Description = 115\_221\_GKD\_SEP22\_Q15]

- 1. B, C, A, D [Option ID = 37885]
- 2. A, B, C, D [Option ID = 37886]
- 3. C, B, A, D [Option ID = 37887]
- 4. D, C, B, A [Option ID = 37888]

16) The scientific study of soil is[Question ID = 16973][Question Description = 116\_221\_GKD\_SEP22\_Q16]

- 1. Earth Study [Option ID = 37889]
- 2. Soil Science [Option ID = 37890]
- 3. Pedology [Option ID = 37891]
- 4. Soil Chemistry [Option ID = 37892]

17) *Triticum aestivum*, the common bread wheat is -

[Question ID = 16974][Question Description = 117\_221\_GKD\_SEP22\_Q17]

- 1. Tetraploid

[Option ID = 37893]

- 2. Hexaploid

[Option ID = 37894]

- 3. Haploid

[Option ID = 37895]

- 4. Diploid

[Option ID = 37896]

18) Sectoral inflation refers to[Question ID = 16975][Question Description = 118\_221\_GKD\_SEP22\_Q18]

- 1. Running inflation [Option ID = 37897]

2. Comprehensive inflation [Option ID = 37898]
3. Sporadic inflation [Option ID = 37899]
4. Creeping inflation [Option ID = 37900]

**19) Keynes Liquidity trap refers to[Question ID = 16976][Question Description = 119\_221\_GKD\_SEP22\_Q19]**

1. Speculative demand for money [Option ID = 37901]
2. Transactions motive of money is inelastic [Option ID = 37902]
3. Precautionary motive of money is inelastic [Option ID = 37903]
4. Transactions motive of money is constant [Option ID = 37904]

**20) A business is solvent if[Question ID = 16977][Question Description = 120\_221\_GKD\_SEP22\_Q20]**

1. Total receipts exceed total expenditures [Option ID = 37905]
2. Total debt exceeds total equity [Option ID = 37906]
3. Total sales exceed total cash expense [Option ID = 37907]
4. Total assets exceed total liabilities [Option ID = 37908]

Topic:- Veterinary and Animal Sciences 1\_PHD

**1) Which of the following statements is not true about Qualitative traits?[Question ID = 3451][Question Description = 101\_60\_BVE\_SEP22\_Q01]**

1. Governed by many genes [Option ID = 13801]
2. Less affected by the environment [Option ID = 13802]
3. Traits differ in kind [Option ID = 13803]
4. Shows discontinuous variations [Option ID = 13804]

**2) Genetic Cline means[Question ID = 3452][Question Description = 102\_60\_BVE\_SEP22\_Q02]**

1. Gene frequency is not variable [Option ID = 13805]
2. Single measurement of a character [Option ID = 13806]
3. Discontinuity of a trait in a population [Option ID = 13807]
4. Measurable gradient of phenotype or genotype [Option ID = 13808]

**3) Pien niu is the species hybrid obtained from**

**[Question ID = 3453][Question Description = 103\_60\_BVE\_SEP22\_Q03]**

1. Mithun X Cow  
[Option ID = 13809]
2. Zebra X horse  
[Option ID = 13810]
3. Mithun X Buffalo  
[Option ID = 13811]
4. Cattle X Yak  
[Option ID = 13812]

**4) Which of the following is an example of multiple allelism?[Question ID = 3454][Question Description = 104\_60\_BVE\_SEP22\_Q04]**

1. Eye colour in Drosophila [Option ID = 13813]
2. Pigmented Iris [Option ID = 13814]
3. Ear Lobes [Option ID = 13815]
4. PTC tasting [Option ID = 13816]

**5) The mating system in which sire of a pure breed are mated to the females of non - descript type is known as:**

**[Question ID = 3455][Question Description = 105\_60\_BVE\_SEP22\_Q05]**

1. Top crossing [Option ID = 13817]
2. Out crossing [Option ID = 13818]
3. Grading up [Option ID = 13819]
4. Species hybridization [Option ID = 13820]

**6) National Dairy Development Board (NDDDB) has developed a software for monitoring dairy animal productivity & health[Question ID = 3456][Question Description = 106\_60\_BVE\_SEP22\_Q06]**

1. HERD MAN [Option ID = 13821]
2. INAPH [Option ID = 13822]
3. ANIMAL [Option ID = 13823]
4. WOMBAT [Option ID = 13824]

7) Genetic marker-based selection is quite effective as it shows higher genetic gain for the traits[Question ID = 3457]  
[Question Description = 107\_60\_BVE\_SEP22\_Q07]

1. Having high heritability [Option ID = 13825]
2. Having moderate heritability [Option ID = 13826]
3. Having low heritability [Option ID = 13827]
4. Having negligible heritability [Option ID = 13828]

8) Who discovered the Chromosome for the first time?[Question ID = 3458][Question Description = 108\_60\_BVE\_SEP22\_Q08]

1. Waldeyer [Option ID = 13829]
2. Walther Fleming [Option ID = 13830]
3. Wheler [Option ID = 13831]
4. Watson [Option ID = 13832]

9) The scientific name of Hamster is[Question ID = 3459][Question Description = 109\_60\_BVE\_SEP22\_Q09]

1. Langomorphs [Option ID = 13833]
2. Guniea Pig [Option ID = 13834]
3. Cavia porcellus [Option ID = 13835]
4. Cricetinae [Option ID = 13836]

10) Which one of them according to CPCSEA is used for a maintaining a breeding record in laboratory animal[Question ID = 3460][Question Description = 110\_60\_BVE\_SEP22\_Q10]

1. Form A [Option ID = 13837]
2. Form B [Option ID = 13838]
3. Form C [Option ID = 13839]
4. Form D [Option ID = 13840]

11) Match List I with List II

List I	List II
(Book/Theory proposed/Characteristic, etc.)	(Author/Thinker/Name of Theory, etc.)
A. Halter and canister	I. Gross energy estimation
B. Bypass fat	II. Biohydrogenation of linoleic acid
C. Bomb calorimeter	III. Protein encapsulation
D. CLA	IV. SF6 technique

Choose the correct answer from the options given below:

[Question ID = 3461][Question Description = 111\_60\_BVE\_SEP22\_Q11]

1. A - II, B - I, C - III, D - IV

[Option ID = 13841]

2. A - IV, B - II, C - III, D - I

[Option ID = 13842]

3. A - III, B - II, C - IV, D - I

[Option ID = 13843]

4. A - IV, B - III, C - I, D - II

[Option ID = 13844]

12) The ratio of ME to DE of roughage in ruminant is[Question ID = 3462][Question Description = 112\_60\_BVE\_SEP22\_Q12]

1. 0.79 [Option ID = 13845]
2. 0.96 [Option ID = 13846]
3. 0.82 [Option ID = 13847]
4. 0.72 [Option ID = 13848]

13) Quality control of livestock feed in India is regulated by[Question ID = 3463][Question Description = 113\_60\_BVE\_SEP22\_Q13]

1. ICAR [Option ID = 13849]

2. BIS [Option ID = 13850]
3. CLFMA [Option ID = 13851]
4. NDDB [Option ID = 13852]

**14) Allotriophagia is caused in cattle due to[Question ID = 3464][Question Description = 114\_60\_BVE\_SEP22\_Q14]**

1. Calcium deficiency [Option ID = 13853]
2. Phosphorus deficiency [Option ID = 13854]
3. Sodium deficiency [Option ID = 13855]
4. Potassium deficiency [Option ID = 13856]

**15) Reference standard used in bomb calorimeter is[Question ID = 3465][Question Description = 115\_60\_BVE\_SEP22\_Q15]**

1. Benzoic acid [Option ID = 13857]
2. Butyric acid [Option ID = 13858]
3. Oxalic acid [Option ID = 13859]
4. Citric acid [Option ID = 13860]

**16) The atmospheric pressure of oxygen required for sample analysis in Bomb calorimeter is[Question ID = 3466][Question Description = 116\_60\_BVE\_SEP22\_Q16]**

1. 15 [Option ID = 13861]
2. 25 [Option ID = 13862]
3. 35 [Option ID = 13863]
4. 45 [Option ID = 13864]

**17) The decreasing order of susceptibility to animal species from Gossypol toxicity is**

**A. Goat**

**B. Horse**

**C. Pig**

**D. Poultry**

Choose the *correct* answer from the options given below

**[Question ID = 3467][Question Description = 117\_60\_BVE\_SEP22\_Q17]**

1. A, B, C, D [Option ID = 13865]
2. D, C, B, A [Option ID = 13866]
3. B, C, D, A [Option ID = 13867]
4. A, D, B, C [Option ID = 13868]

**18) Rumen microbes that breaks down the fibrous structure of roughages by penetrating the feed are[Question ID = 3468][Question Description = 118\_60\_BVE\_SEP22\_Q18]**

1. Bacteria [Option ID = 13869]
2. Archea [Option ID = 13870]
3. Fungi [Option ID = 13871]
4. Protozoa [Option ID = 13872]

**19) Surface area law of body heat production was given by[Question ID = 3469][Question Description = 119\_60\_BVE\_SEP22\_Q19]**

1. O. Kellner [Option ID = 13873]
2. T. B. Osborne [Option ID = 13874]
3. H. H. Mitchell [Option ID = 13875]
4. Max Rubner [Option ID = 13876]

**20) The Maillard reaction involves a reaction between[Question ID = 3470][Question Description = 120\_60\_BVE\_SEP22\_Q20]**

1.  $\epsilon$ -amino groups of lysine and carbonyl compounds of reducing sugars [Option ID = 13877]
2.  $\epsilon$ -amino groups of lysine and carbonyl compounds of non-reducing sugars [Option ID = 13878]
3.  $\epsilon$ -amino groups of arginine and carbonyl compounds of non-reducing sugars [Option ID = 13879]
4.  $\epsilon$ -amino groups of methionine and carbonyl compounds of non-reducing sugars [Option ID = 13880]

**21) According to FAO how many types of livestock management systems are there[Question ID = 3471][Question Description = 121\_60\_BVE\_SEP22\_Q21]**

1. 3 [Option ID = 13881]
2. 4 [Option ID = 13882]
3. 2 [Option ID = 13883]
4. 5 [Option ID = 13884]

**22) The breed of cattle used for the game of *Jalikattu*[Question ID = 3472][Question Description = 122\_60\_BVE\_SEP22\_Q22]**

1. Kangayam and Pullikulam [Option ID = 13885]
2. Kangayam and Ponwar [Option ID = 13886]
3. Hallikar and Kangayam [Option ID = 13887]
4. Kangayam and Kankrej [Option ID = 13888]

**23) Based on milk production of a cattle an extra 1 kg of concentrate is given for each[Question ID = 3473][Question Description = 123\_60\_BVE\_SEP22\_Q23]**

1. 5 litres of milk produced [Option ID = 13889]
2. 10 litres of milk produced [Option ID = 13890]
3. 2.5 litres of milk produced [Option ID = 13891]
4. 1.5 litres of milk produced [Option ID = 13892]

**24) The breed reared for the production of Pashmina is[Question ID = 3474][Question Description = 124\_60\_BVE\_SEP22\_Q24]**

1. Chokla [Option ID = 13893]
2. Patanwadi [Option ID = 13894]
3. Chegu [Option ID = 13895]
4. Muzzaffarnagri [Option ID = 13896]

**25) The organization / committee known for regulating animal experimentation[Question ID = 3475][Question Description = 125\_60\_BVE\_SEP22\_Q25]**

1. PFA [Option ID = 13897]
2. CPSCEA [Option ID = 13898]
3. CPCSEA [Option ID = 13899]
4. CPSEA [Option ID = 13900]

**26) National Dairy Research Institute was established in Bangalore in the year[Question ID = 3476][Question Description = 126\_60\_BVE\_SEP22\_Q26]**

1. 1921 [Option ID = 13901]
2. 1922 [Option ID = 13902]
3. 1923 [Option ID = 13903]
4. 1924 [Option ID = 13904]

**27) Intermittent milking is a characteristic feature of which of the following breed of buffaloes[Question ID = 3477][Question Description = 127\_60\_BVE\_SEP22\_Q27]**

1. Jaffarabadi [Option ID = 13905]
2. Banni [Option ID = 13906]
3. Pandharpuri [Option ID = 13907]
4. Gojri [Option ID = 13908]

**28) Which of the following Camel in India is endangered?[Question ID = 3478][Question Description = 128\_60\_BVE\_SEP22\_Q28]**

1. Bikaneri [Option ID = 13909]
2. Jaisalmeri [Option ID = 13910]
3. Double humped [Option ID = 13911]
4. Kutchchi [Option ID = 13912]

**29) Colostrum feeding should be done to calves within ..... (time) of their birth[Question ID = 3479][Question Description = 129\_60\_BVE\_SEP22\_Q29]**

1. 1 hour [Option ID = 13913]
2. 10 hours [Option ID = 13914]
3. 3 hours [Option ID = 13915]
4. 30 minutes [Option ID = 13916]

**30) Karan Fries strain of cattle is evolved by crossing[Question ID = 3480][Question Description = 130\_60\_BVE\_SEP22\_Q30]**

1. Sahiwal with Brown Swiss [Option ID = 13917]
2. Red Sindhi with Jersey [Option ID = 13918]
3. Tharparkar with Holstein [Option ID = 13919]
4. Nondescript with Brown Swiss [Option ID = 13920]

**31) The method of choice for determining fecal coliform densities[Question ID = 3481][Question Description = 131\_60\_BVE\_SEP22\_Q31]**

1. SPC [Option ID = 13921]
2. MPN [Option ID = 13922]
3. Agar droplets [Option ID = 13923]
4. HGMF [Option ID = 13924]

**32) In sous vide method of cooking of meat**

- A. Cooking is done at temperature <100°C under="">
- B. Cooking is continued for extended period of time followed by cooling
- C. has positive effect on tenderness compared with conventional cooking
- D. disadvantageous because of non-uniformity in doneness

Choose the *correct* answer from the options given below:

[Question ID = 3482][Question Description = 132\_60\_BVE\_SEP22\_Q32]

1. A, B and D only [Option ID = 13925]
2. A, B and C only [Option ID = 13926]
3. B, C and D only [Option ID = 13927]
4. A, C and D only [Option ID = 13928]

**33) The predominant unsaturated fatty acids in muscle fat is[Question ID = 3483][Question Description = 133\_60\_BVE\_SEP22\_Q33]**

1. Palmitic acid [Option ID = 13929]
2. Stearic acid [Option ID = 13930]
3. Oleic acid [Option ID = 13931]
4. linoleic acid [Option ID = 13932]

**34) Muscle food is an excellent source of[Question ID = 3484][Question Description = 134\_60\_BVE\_SEP22\_Q34]**

1. Vit A [Option ID = 13933]
2. Vit B [Option ID = 13934]
3. Vit D [Option ID = 13935]
4. Vit E [Option ID = 13936]

**35) A weight lifter requires phasic action of muscle and depends on[Question ID = 3485][Question Description = 135\_60\_BVE\_SEP22\_Q35]**

1. Red muscle fibers [Option ID = 13937]
2. White muscle fibers [Option ID = 13938]
3. Intermediate type muscle fibers [Option ID = 13939]
4. better capillarized muscle fibers [Option ID = 13940]

**36) The most abundant myofibrillar protein in adult mammalian muscle is[Question ID = 3486][Question Description = 136\_60\_BVE\_SEP22\_Q36]**

1. Collagen [Option ID = 13941]
2. Myosin [Option ID = 13942]
3. Actin [Option ID = 13943]
4. M-protein [Option ID = 13944]

**37) The poultry birds in which PSE is more prevalent is[Question ID = 3487][Question Description = 137\_60\_BVE\_SEP22\_Q37]**

1. Duck [Option ID = 13945]
2. Pigeon [Option ID = 13946]
3. Turkey [Option ID = 13947]
4. Quail [Option ID = 13948]

**38) As per AGMARK standards for table egg the medium grade eggs weigh approx[Question ID = 3488][Question Description = 138\_60\_BVE\_SEP22\_Q38]**

1. 60-72g [Option ID = 13949]
2. 53-59g [Option ID = 13950]
3. 45-52g [Option ID = 13951]
4. 38-44g [Option ID = 13952]

**39) BIS (Bureau of Indian Standards) erstwhile ISI works under the aegis of[Question ID = 3489][Question Description = 139\_60\_BVE\_SEP22\_Q39]**

1. Ministry of Health and Family Welfare [Option ID = 13953]
2. Ministry of Agriculture and Farmer Welfare [Option ID = 13954]

3. Ministry of Consumer Affairs, Food and Public Distribution [Option ID = 13955]
4. Ministry of Food Processing and Consumer Affairs [Option ID = 13956]

**40) Cod liver oil has high levels of**[Question ID = 3490][Question Description = 140\_60\_BVE\_SEP22\_Q40]

1. Vitamin K [Option ID = 13957]
2. Vitamin B [Option ID = 13958]
3. Vitamin C [Option ID = 13959]
4. Vitamin D [Option ID = 13960]

**41) Who coined the term "Genetics"**

[Question ID = 3491][Question Description = 141\_60\_BVE\_SEP22\_Q41]

1. Johannsen [Option ID = 13961]
2. Sutton [Option ID = 13962]
3. Mendel [Option ID = 13963]
4. Bateson [Option ID = 13964]

**42) Crossing of inbred lines take advantage of**[Question ID = 3492][Question Description = 142\_60\_BVE\_SEP22\_Q42]

1. Inbreeding depression [Option ID = 13965]
2. Hybrid vigour [Option ID = 13966]
3. Loss of vigour [Option ID = 13967]
4. Increase in homozygosity [Option ID = 13968]

**43) Percent of crossing over is more when**

[Question ID = 3493][Question Description = 143\_60\_BVE\_SEP22\_Q43]

1. genes are located in a different cell [Option ID = 13969]
2. genes are located in same chromosome [Option ID = 13970]
3. linked genes are located close to each other [Option ID = 13971]
4. linked genes are located far apart from each other [Option ID = 13972]

**44) Aneuploidy is mostly caused by**

[Question ID = 3494][Question Description = 144\_60\_BVE\_SEP22\_Q44]

1. Nondisjunction [Option ID = 13973]
2. Disjunction [Option ID = 13974]
3. Crossing over [Option ID = 13975]
4. Mating [Option ID = 13976]

**45) Which of the following system of mating changes the genetic composition without creating new genes?**

[Question ID = 3495][Question Description = 145\_60\_BVE\_SEP22\_Q45]

1. Top crossing [Option ID = 13977]
2. Back crossing [Option ID = 13978]
3. Grading up [Option ID = 13979]
4. Rotational crossing [Option ID = 13980]

**46) Selection of an animal based on its own performance is**

[Question ID = 3496][Question Description = 146\_60\_BVE\_SEP22\_Q46]

1. Family selection [Option ID = 13981]
2. Mass selection [Option ID = 13982]
3. Sib selection [Option ID = 13983]
4. Pedigree selection [Option ID = 13984]

**47) Choose the correct equation**

[Question ID = 3497][Question Description = 147\_60\_BVE\_SEP22\_Q47]

1.  $i = \sigma P / S$  [Option ID = 13985]
2.  $S = \sigma P / i$  [Option ID = 13986]
3.  $s = i\sigma P$  [Option ID = 13987]
4.  $i = S\sigma P$  [Option ID = 13988]

**48) Which of the following is incorrect**[Question ID = 3498][Question Description = 148\_60\_BVE\_SEP22\_Q48]

1. Mule: Jack X Mare [Option ID = 13989]
2. Pien niu: Cattle X Yak [Option ID = 13990]
3. Hinny: Jack X Mare [Option ID = 13991]
4. Zeriid: Zebra X Horse [Option ID = 13992]

49) Frieswal breed of cattle was developed by crossing of[Question ID = 3499][Question Description = 149\_60\_BVE\_SEP22\_Q49]

1. Holstein Friesian and Tharparker [Option ID = 13993]
2. Holstein Friesian and Sahiwal [Option ID = 13994]
3. Holstein Friesian and Red Sindhi [Option ID = 13995]
4. Holstein Friesian and nondescript cattle [Option ID = 13996]

50) Interaction between alleles resulting in superiority of heterozygous individuals over others is called as[Question ID = 3500][Question Description = 150\_60\_BVE\_SEP22\_Q50]

1. Dominance [Option ID = 13997]
2. Partial dominance [Option ID = 13998]
3. Overdominance [Option ID = 13999]
4. Complete dominance [Option ID = 14000]

Topic:- 18 Animal Nutrition\_PHD

1) Early rumen development is desirable, and it can be hastened by[Question ID = 3501][Question Description = 101\_58\_ANM\_SEP22\_Q01]

1. Early milk replacer introduction [Option ID = 14001]
2. Maximum colostrum feeding [Option ID = 14002]
3. Early hay introduction [Option ID = 14003]
4. Early concentrate feeding [Option ID = 14004]

2) Which one of the following statement is NOT true?

[Question ID = 3502][Question Description = 102\_58\_ANM\_SEP22\_Q02]

1. Alkalotic state increases the sensitivity of bone to PTH. [Option ID = 14005]
2. Alkalotic state reduces the sensitivity of bone to PTH. [Option ID = 14006]
3. Acidotic state increases the sensitivity of bone to PTH. [Option ID = 14007]
4. Acidotic state increases the calcium supply. [Option ID = 14008]

3) Match List I with List II

List I	List II
A. Poloxalene	I. Czerkawski and Breckenridge
B. Rumen fistula	II. Erle Bartley
C. Portable respiration apparatus	III. Colin
D. RUSITECH	IV. Nathan Zuntz

Choose the correct answer from the options given below:

[Question ID = 3503][Question Description = 103\_58\_ANM\_SEP22\_Q03]

1. A - IV, B - III, C - I, D - II [Option ID = 14009]
2. A - II, B - III, C - IV, D - I [Option ID = 14010]
3. A - III, B - IV, C - II, D - I [Option ID = 14011]
4. A - I, B - IV, C - III, D - II [Option ID = 14012]

4) Amylose is soluble in hot water and consists straight chain of[Question ID = 3504][Question Description = 104\_58\_ANM\_SEP22\_Q04]

1. Beta-1, 4 linkage of D-glucose [Option ID = 14013]
2. Alpha-1, 6 linkage of D-glucose [Option ID = 14014]
3. Beta-1, 6 linkage of D-glucose [Option ID = 14015]
4. Alpha-1, 4 linkage of D-glucose [Option ID = 14016]

5) Given below are two statements

Statement I: Arginine is an aromatic amino acid.

Statement II: At acidic pH, amino acid exists as cation.

In light of the above statements, choose the *correct* answer from the options given below

[Question ID = 3505][Question Description = 105\_58\_ANM\_SEP22\_Q05]

1. Both Statement I and Statement II are true [Option ID = 14017]
2. Both Statement I and Statement II are false [Option ID = 14018]
3. Statement I is true but Statement II is false [Option ID = 14019]
4. Statement I is false but Statement II is true [Option ID = 14020]

6) Vitamins required for the propionate metabolism are[Question ID = 3506][Question Description = 106\_58\_ANM\_SEP22\_Q06]

1. Biotin and vitamin B12 [Option ID = 14021]
2. Vitamin B1 and vitamin B2 [Option ID = 14022]
3. Biotin and vitamin B2 [Option ID = 14023]
4. Vitamin B1 and vitamin B12 [Option ID = 14024]

7) Effective protein degradability is calculated as per the following formula (Where a = intercept on Y axis, b = difference between a and asymptote, c= rate of disappearance of potentially degradable fraction b, and t = time of exposure)

[Question ID = 3507][Question Description = 107\_58\_ANM\_SEP22\_Q07]

1.  $P = a + bc/c+r$  [Option ID = 14025]
2.  $P = a+c(1-e^{-ct})$  [Option ID = 14026]
3.  $P = a+b(1-e^{-ct})$  [Option ID = 14027]
4.  $P = a+b(1-e^{ct})$  [Option ID = 14028]

8) In CNCPS system, the fraction C of proteins refers to[Question ID = 3508][Question Description = 108\_58\_ANM\_SEP22\_Q08]

1. Ammonia and NPN [Option ID = 14029]
2. Globulins and some albumins [Option ID = 14030]
3. Prolamines [Option ID = 14031]
4. ADIN [Option ID = 14032]

9) Acid insoluble ash in Type I and Type II mineral mixture (BIS specification) should be[Question ID = 3509][Question Description = 109\_58\_ANM\_SEP22\_Q09]

1. 2.5 % and 3.0 % respectively [Option ID = 14033]
2. 3.0 % and 2.5 % respectively [Option ID = 14034]
3. 2.5 % and 5 % respectively [Option ID = 14035]
4. 5.0 % and 2.5 % respectively [Option ID = 14036]

10) Match List I with List II

List I	List II
A. Biotin	I. Vitamin H
B. APA factor	II. Vitamin B12
C. Folic acid	III. Vitamin M
D. Riboflavin	IV. Vitamin G

Choose the correct answer from the options given below:

[Question ID = 3510][Question Description = 110\_58\_ANM\_SEP22\_Q10]

1. A - III, B - IV, C - II, D - I [Option ID = 14037]
2. A - I, B - II, C - IV, D - III [Option ID = 14038]
3. A - III, B - II, C - IV, D - I [Option ID = 14039]
4. A - I, B - II, C - III, D - IV [Option ID = 14040]

11) Which of the following are true for microbial protein?

- A. Diet DOES NOT affect the amino acid composition of individual species of bacteria or protozoa per se.
- B. Protein quality of protozoa and bacteria are quite similar.
- C. True digestibility of protozoa is higher than bacteria.
- D. Protozoa numbers are lower on high roughages diets than concentrate diet.
- E. Microbial protein contains 20 % nucleic acid.

Choose the *correct* answer from the options given below

[Question ID = 3511][Question Description = 111\_58\_ANM\_SEP22\_Q11]

1. A, B and E [Option ID = 14041]
2. A, B, C and E only [Option ID = 14042]
3. A, B, D and E only [Option ID = 14043]
4. A, C, D and E only [Option ID = 14044]

12) Which of the following are true for energy metabolism?

- A. The burning of 1 g of hydrogen produces over 4 times as much heat as in case of carbon.
- B. The large differences in the efficiency of utilization of ME are primarily due to wide variations in the energy losses as HI.

C. Net energy is easier and cheaper to obtain than metabolizable energy.

D. RQ below 0.7 have been observed in fasting.

E. Gross energy of methane is 9.45 kcal/L.

Choose the *correct* answer from the options given below

[Question ID = 3512][Question Description = 112\_58\_ANM\_SEP22\_Q12]

1. A, B, C and E only

[Option ID = 14045]

2. A, B and C only

[Option ID = 14046]

3. A, B, D and E only

[Option ID = 14047]

4. A, B and D only

[Option ID = 14048]

13) Cellulose may be defined as[Question ID = 3513][Question Description = 113\_58\_ANM\_SEP22\_Q13]

1. ADF - NDF [Option ID = 14049]

2. ADL - NDF [Option ID = 14050]

3. ADF - ADL [Option ID = 14051]

4. NDF - ADF [Option ID = 14052]

14) What type of correlation is between increased rumen dilution rate and increased microbial growth?[Question ID = 3514]

[Question Description = 114\_58\_ANM\_SEP22\_Q14]

1. Positive [Option ID = 14053]

2. Negative [Option ID = 14054]

3. Neutral [Option ID = 14055]

4. No correlation [Option ID = 14056]

15) Active form of vitamin D is having.....hydroxyl group.[Question ID = 3515][Question Description = 115\_58\_ANM\_SEP22\_Q15]

1. One [Option ID = 14057]

2. Two [Option ID = 14058]

3. Three [Option ID = 14059]

4. Four [Option ID = 14060]

16) Which one of the following is true ketogenic amino acid?

[Question ID = 3516][Question Description = 116\_58\_ANM\_SEP22\_Q16]

1. Lysine [Option ID = 14061]

2. Leucine [Option ID = 14062]

3. Glycine [Option ID = 14063]

4. Serine [Option ID = 14064]

17) Nylon bag technique is NOT directly associated with

[Question ID = 3517][Question Description = 117\_58\_ANM\_SEP22\_Q17]

1. Semi-in vivo technique [Option ID = 14065]

2. in-sacco technique [Option ID = 14066]

3. *in situ* technique [Option ID = 14067]

4. *in vitro* technique [Option ID = 14068]

18) Tilley and Terry proposed the[Question ID = 3518][Question Description = 118\_58\_ANM\_SEP22\_Q18]

1. One-stage technique [Option ID = 14069]

2. Two-stage technique [Option ID = 14070]

3. VIVAR technique [Option ID = 14071]

4. RUSITECH technique [Option ID = 14072]

19) Given below are two statements

Statement I: BIS specification of Type II mineral mixture is having the phosphorus (% by mass, min) is 9.

Statement II: Salt content of Type II mineral mixture as per BIS specification is zero.

In light of the above statements, choose the *correct* answer from the options given below

[Question ID = 3519][Question Description = 119\_58\_ANM\_SEP22\_Q19]

1. Both Statement I and Statement II are true [Option ID = 14073]
2. Both Statement I and Statement II are false [Option ID = 14074]
3. Statement I is true but Statement II is false [Option ID = 14075]
4. Statement I is false but Statement II is true [Option ID = 14076]

20) Match List I with List II

List I	List II
A. Soybean	I. 6.25
B. Wheat	II. 5.83
C. Egg and meat	III. 5.71
D. Milk	IV. 6.38

Choose the correct answer from the options given below:

[Question ID = 3520][Question Description = 120\_58\_ANM\_SEP22\_Q20]

1. A - II, B - IV, C - III, D - I [Option ID = 14077]
2. A - III, B - II, C - I, D - IV [Option ID = 14078]
3. A - III, B - IV, C - II, D - I [Option ID = 14079]
4. A - I, B - II, C - IV, D - III [Option ID = 14080]

21) Number of carbon atom and double bond position in Arachidonic acid may be described as[Question ID = 3521]

[Question Description = 121\_58\_ANM\_SEP22\_Q21]

1. 20 : 4 n 6 [Option ID = 14081]
2. 20 : 3 n 6 [Option ID = 14082]
3. 20 : 2 n 6 [Option ID = 14083]
4. 20 : 5 n 3 [Option ID = 14084]

22) The main site of fatty acid synthesis in the cells is[Question ID = 3522][Question Description = 122\_58\_ANM\_SEP22\_Q22]

1. Mitochondrion [Option ID = 14085]
2. Cytosol [Option ID = 14086]
3. Endoplasmic reticulum [Option ID = 14087]
4. Nucleus [Option ID = 14088]

23) Which one of the following is NOT a method for bypass fat production?

[Question ID = 3523][Question Description = 123\_58\_ANM\_SEP22\_Q23]

1. Double decomposition method [Option ID = 14089]
2. Toluene distillation method [Option ID = 14090]
3. Fusion method [Option ID = 14091]
4. Prilled fat production [Option ID = 14092]

24) Which one of the following effect is caused by ionophores as feed additive?

[Question ID = 3524][Question Description = 124\_58\_ANM\_SEP22\_Q24]

1. Decrease in rumen propionate [Option ID = 14093]
2. Increase in acetate [Option ID = 14094]
3. Decrease methane production [Option ID = 14095]
4. Enhanced bio-hydrogenation [Option ID = 14096]

25) Which one of the following is NOT a probiotics feed additive?

[Question ID = 3525][Question Description = 125\_58\_ANM\_SEP22\_Q25]

1. *Aspergillus oryzae* [Option ID = 14097]
2. *Saccharomyces cerevisiae* [Option ID = 14098]
3. *Escherichia coli* [Option ID = 14099]
4. *Enterococcus faecium* [Option ID = 14100]

26) A natural phytochemical often used to protect protein degradation in the rumen is[Question ID = 3526][Question Description = 126\_58\_ANM\_SEP22\_Q26]

1. Tannins [Option ID = 14101]
2. Saponins [Option ID = 14102]
3. Formaline [Option ID = 14103]
4. Ethoxyquine [Option ID = 14104]

27) One of the method adopted for efficient supply of particular amino acid[Question ID = 3527][Question Description =

**127\_58\_ANM\_SEP22\_Q27]**

1. Heat treatment [Option ID = 14105]
2. Biohydrogenation [Option ID = 14106]
3. Conjugation of Amino acids [Option ID = 14107]
4. Chelation with minerals [Option ID = 14108]

**28) The calf starter should contain**

[Question ID = 3528][Question Description = 128\_58\_ANM\_SEP22\_Q28]

1. 23% CP and 75% TDN [Option ID = 14109]
2. 13% CP and 75% TDN [Option ID = 14110]
3. 23% CP and 55% TDN [Option ID = 14111]
4. 13% CP and 55% TDN [Option ID = 14112]

**29) Efficiency of ME utilization in cattle is lowest for[Question ID = 3529][Question Description = 129\_58\_ANM\_SEP22\_Q29]**

1. Maintenance [Option ID = 14113]
2. Growth [Option ID = 14114]
3. Fattening [Option ID = 14115]
4. Milk production [Option ID = 14116]

**30) Which of the following losses are accounted in TDN calculation?**

[Question ID = 3530][Question Description = 130\_58\_ANM\_SEP22\_Q30]

1. Methane production [Option ID = 14117]
2. Urine losses [Option ID = 14118]
3. Heat Increment [Option ID = 14119]
4. Processing losses [Option ID = 14120]

**31) Match List I with List II**

List I	List II
A. Swayback	I. Magnesium
B. Milk tetany	II. Copper
C. Thumps	III. Sodium
D. Cannibalism	IV. Iron

Choose the correct answer from the options given below:

[Question ID = 3531][Question Description = 131\_58\_ANM\_SEP22\_Q31]

1. A - II, B - I, C - IV, D - III [Option ID = 14121]
2. A - III, B - I, C - II, D - IV [Option ID = 14122]
3. A - II, B - IV, C - III, D - I [Option ID = 14123]
4. A - IV, B - I, C - II, D - III [Option ID = 14124]

**32) Given below are two statements**

**Statement I: There is no difference between feed additives and feed supplements.**

**Statement II: Probiotics is used as feed supplement in calves.**

In light of the above statements, choose the *correct* answer from the options given below

[Question ID = 3532][Question Description = 132\_58\_ANM\_SEP22\_Q32]

1. Both Statement I and Statement II are true [Option ID = 14125]
2. Both Statement I and Statement II are false [Option ID = 14126]
3. Statement I is true but Statement II is false [Option ID = 14127]
4. Statement I is false but Statement II is true [Option ID = 14128]

**33) Genetically engineered microbes have \_\_\_\_\_competitive ability to survive in rumen[Question ID = 3533][Question Description = 133\_58\_ANM\_SEP22\_Q33]**

1. Low [Option ID = 14129]
2. High [Option ID = 14130]
3. Depends on gene inserted [Option ID = 14131]
4. Depends on carrier microbes [Option ID = 14132]

**34) A. Vitamin D is a fat soluble vitamin.**

**B. Form of Vitamin D in plant is Ergosterol.**

C. The active form of Vitamin D is 2,25- (OH)<sub>2</sub> D<sub>3</sub>.

D. Vitamin D<sub>3</sub> stimulates synthesis of calcium binding protein.

Choose the *correct* answer from the options given below:

[Question ID = 3534][Question Description = 134\_58\_ANM\_SEP22\_Q34]

1. A, B and D only [Option ID = 14133]
2. A, B and C only [Option ID = 14134]
3. B, C and D only [Option ID = 14135]
4. A, C and D only [Option ID = 14136]

35) Cotton seed cake must be treated with which of the following chemicals to overcome the Gossypol toxicity in pigs[Question ID = 3535][Question Description = 135\_58\_ANM\_SEP22\_Q35]

1. Sodium hydroxide [Option ID = 14137]
2. Potassium permanganate [Option ID = 14138]
3. Ferrous sulphate [Option ID = 14139]
4. Aluminium hydroxide [Option ID = 14140]

36) Given below are two statements

Statement I: Methane acts as hydrogen sink in rumen.

Statement II: Low frequency of feeding has been observed to reduce CH<sub>4</sub> production in dairy cows.

In light of the above statements, choose the *correct* answer from the options given below

[Question ID = 3536][Question Description = 136\_58\_ANM\_SEP22\_Q36]

1. Both Statement I and Statement II are true [Option ID = 14141]
2. Both Statement I and Statement II are false [Option ID = 14142]
3. Statement I is true but Statement II is false [Option ID = 14143]
4. Statement I is false but Statement II is true [Option ID = 14144]

37) Which of following is postgastric fermentor?

[Question ID = 3537][Question Description = 137\_58\_ANM\_SEP22\_Q37]

1. Cattle [Option ID = 14145]
2. Horse [Option ID = 14146]
3. Sheep [Option ID = 14147]
4. Goat [Option ID = 14148]

38) The global food standard and guidelines are regulated by[Question ID = 3538][Question Description = 138\_58\_ANM\_SEP22\_Q38]

1. United Nations Organization (UNO) [Option ID = 14149]
2. The Food and Agriculture Organization (FAO) [Option ID = 14150]
3. Codex Alimentarius Commission (CAC) [Option ID = 14151]
4. World Health Organization (WHO) [Option ID = 14152]

39) Given below are two statements

Statement I: In two stage of Karnal process of bioconversion of crop residues, in 1st stage straw was treated with NaOH and lysozyme

Statement II: Fungus used in Karnal process of bioconversion of crop residues is Coprinus sp.

In light of the above statements, choose the *correct* answer from the options given below

[Question ID = 3539][Question Description = 139\_58\_ANM\_SEP22\_Q39]

1. Both Statement I and Statement II are true  
[Option ID = 14153]
2. Both Statement I and Statement II are false  
[Option ID = 14154]
3. Statement I is true but Statement II is false  
[Option ID = 14155]
4. Statement I is false but Statement II is true  
[Option ID = 14156]

40) Losses of soluble nutrients in hay due to rainwater are known as[Question ID = 3540][Question Description = 140\_58\_ANM\_SEP22\_Q40]

1. Leaching [Option ID = 14157]
2. Bleaching [Option ID = 14158]
3. Fermentation [Option ID = 14159]
4. Browning [Option ID = 14160]

41) Match List I with List II

List I	List II
A. Kleiber's formula of metaboloc body weight	I. Browser
B. Brody's formula of metaboloc body weight	II. $67.6 W^{0.756}$
C. Goat	III. Grazer
D. Cattle	IV. $70.5 W^{0.734}$

Choose the correct answer from the options given below:

[Question ID = 3541][Question Description = 141\_58\_ANM\_SEP22\_Q41]

1. A - II, B - IV, C - I, D - III [Option ID = 14161]
2. A - IV, B - II, C - III, D - I [Option ID = 14162]
3. A - IV, B - II, C - I, D - III [Option ID = 14163]
4. A - II, B - IV, C - I, D - III [Option ID = 14164]

42) Adulteration of feed with sand can be accessed by the estimation of [Question ID = 3542][Question Description = 142\_58\_ANM\_SEP22\_Q42]

1. Total ash [Option ID = 14165]
2. Acid insoluble ash [Option ID = 14166]
3. Nitrogen free extract [Option ID = 14167]
4. Acid detergent fibre [Option ID = 14168]

43) Match List I with List II

List I	List II
A. Hay equivalence	I. Albrecht Thaer
B. Starch equivalent	II. Armsby
C. Physiological fuel value	III. Morrison
D. NE system	IV. Kellner
	V. Atwater

Choose the correct answer from the options given below:

[Question ID = 3543][Question Description = 143\_58\_ANM\_SEP22\_Q43]

1. A - I, B - II, C - IV, D - III [Option ID = 14169]
2. A - I, B - IV, C - V, D - II [Option ID = 14170]
3. A - V, B - IV, C - III, D - II [Option ID = 14171]
4. A - III, B - II, C - I, D - V [Option ID = 14172]

44) In "The Cornell net carbohydrate and protein system (CNCPS)", the carbohydrates are classified on the basis of their [Question ID = 3544][Question Description = 144\_58\_ANM\_SEP22\_Q44]

1. Insoluble fibre fraction [Option ID = 14173]
2. Soluble fractions [Option ID = 14174]
3. Degradation mechanics [Option ID = 14175]
4. Degradation kinetics [Option ID = 14176]

45) Match List I with List II

List I	List II
A. HPLC	I. Mineral analysis
B. Canister, Halter, Permeation tube	II. SF6 methane estimation
C. AAS	III. Energy estimation
D. Micomineral solution	IV. Amino acid analysis
	V. in vitro gas production test

Choose the correct answer from the options given below:

[Question ID = 3545][Question Description = 145\_58\_ANM\_SEP22\_Q45]

1. A - V, B - IV, C - III, D - II  
[Option ID = 14177]
2. A - I, B - II, C - III, D - IV  
[Option ID = 14178]

3. A - IV, B - III, C - I, D - II

[Option ID = 14179]

4. A - IV, B - II, C - I, D - V

[Option ID = 14180]

**46) Which of the following amino acid is helpful to overcome the aflatoxin toxicity?**

[Question ID = 3546][Question Description = 146\_58\_ANM\_SEP22\_Q46]

1. Lysine [Option ID = 14181]
2. Methionine [Option ID = 14182]
3. Arginine [Option ID = 14183]
4. Cystine [Option ID = 14184]

**47) The degradability (%) of corn by rumen microbes is[Question ID = 3547][Question Description = 147\_58\_ANM\_SEP22\_Q47]**

1. 40% [Option ID = 14185]
2. 70 % [Option ID = 14186]
3. 20% [Option ID = 14187]
4. 90% [Option ID = 14188]

**48) Ethoxyquin is an example of[Question ID = 3548][Question Description = 148\_58\_ANM\_SEP22\_Q48]**

1. Feed grade antibiotics [Option ID = 14189]
2. Antioxidant [Option ID = 14190]
3. Surfactant [Option ID = 14191]
4. Probiotics [Option ID = 14192]

**49) Match List I with List II**

List I	List II
A. Nutritional roup	I. Riboflavin
B. Slipped tendon	II. Vitamin A
C. Parakeratosis	III. Zinc
D. Curled toe paralysis	IV. Manganese
	V. Magnesium

Choose the correct answer from the options given below:

[Question ID = 3549][Question Description = 149\_58\_ANM\_SEP22\_Q49]

1. A - II, B - IV, C - III, D - I [Option ID = 14193]
2. A - II, B - III, C - IV, D - V [Option ID = 14194]
3. A - II , B - I, C - III, D - IV [Option ID = 14195]
4. A - I, B - II, C - IV, D - V [Option ID = 14196]

**50) Urea toxicity results when rumen ammonia level is**

[Question ID = 3550][Question Description = 150\_58\_ANM\_SEP22\_Q50]

1. > 80 mg/100 ml Rumen Liquor

[Option ID = 14197]

2. < 80 mg/100 ml rumen liquor

[Option ID = 14198]

3. < 8 mg/100 ml rumen liquor

[Option ID = 14199]

4. > 8 mg/100 ml Rumen liquor

[Option ID = 14200]