Ahmedabad University

School of Arts and Sciences

BIO502: PLANT BIOTECHNOLOGY AND TISSUE CULTURE

Mid Term Examination 2022 (Winter Semester)

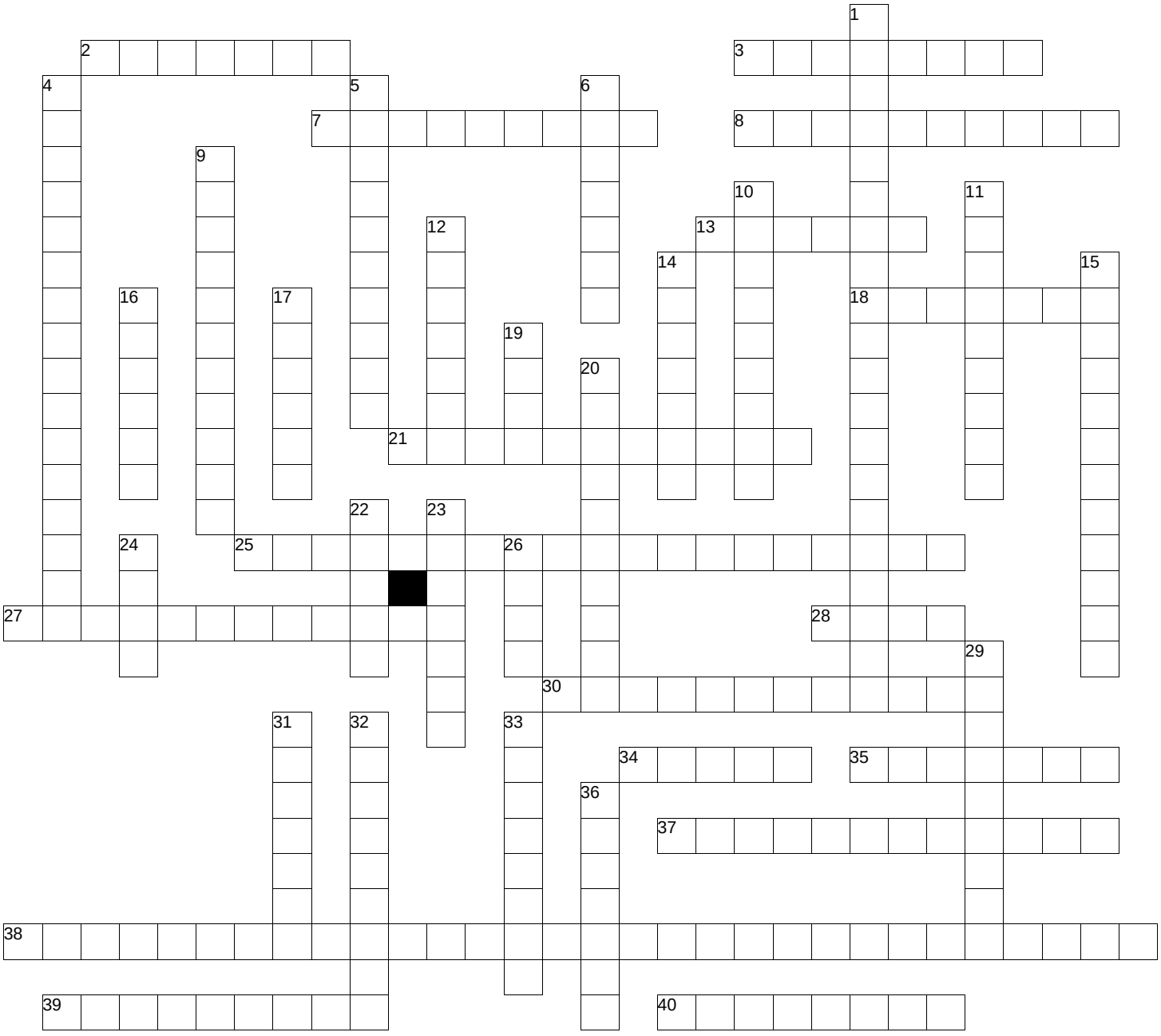
Total Marks = 50 **Time – 1.5 hours**

Enrolment Number:
Date: 08-03-2022
No. of printed pages: 04

Instructions:

1. This is a 50 crossword puzzle exam.
2. Write your answers with blue or black pen, no submissions will be accepted, if written with pencil.
3. Each puzzle is of 1 mark.
4. Each answer should be written in the boxes only, no marks will be given if written outside the box.

Question 1



Across

2. Zygotic embryos face desiccation and dormancy, while ..... embryos continue to grow into plantlets

3. The region of auxin production in plants is …..

7. ..... is needed for maintaining turgor pressure of plant cells

8. The laminar air flow contains..... to remove large dust particles

13. Sucrose is supplied in the media as ..... source

18. Stage I in tissue culture is characterized by establishment of …... cultures

21. Microspores are formed from..... tissue

25. Region of producing virus free plants is…..

27. .....is a development of plant organs from unusual origin

28. A portion of stem from which shoot, flower or leaves originate

30. Microsporogenesis and micro gametogenesis are characterized by their..... types

34. Supply explant with..... , it will initiate callus

35. autoclave is a process of ..... to sterilize the media and other tools used in tissue culture

37. ..... is defined as when explant is difficult to regenerate

38. Iron is chelated with ..... in the tissue culture medium

39. Post cracking of seed coat, orchids develop ..... like structure in the seed culture

40. .....gelling agent is derived from bacteria

Down

1. ……is the base of altered plant traits in the tissue culture

4. ..... is a naturally occurring auxin

5. .....is used for arresting the cell growth in the anther culture for double haploid plants production

6. ..... is required for the regulation of protein synthesis through S-S bridges

9. Small generative cell forms..... in micro gametogenesis

10……. is a central atom of chlorophyll structure

11. Chlorophyll has a ..... ring structure

12. Site of Cytokinin production is……..

14. Keep the .....sterile, else it will turn necrotic

15. ..... is used to test the pollen viability

16. ..... evolution is performed by Mn dependent enzymes in photosynthesis

17. An organ to produce haploid cultures is…….

19. ..... is derived from red algae *Gracileria* and *Gelidium*

20. Pollen mitosis I is characterized by the formation of generative cell and a..... cell

22. ..... is required for meristematic activity

23. Number of subcultures is.....

24. ..... culture is mainly used in orchids as they do not germinate efficiently in-vivo

26. I'm the most essential micronutrient

29. Anthers are usually used for cultures when pollens are still confined in.....

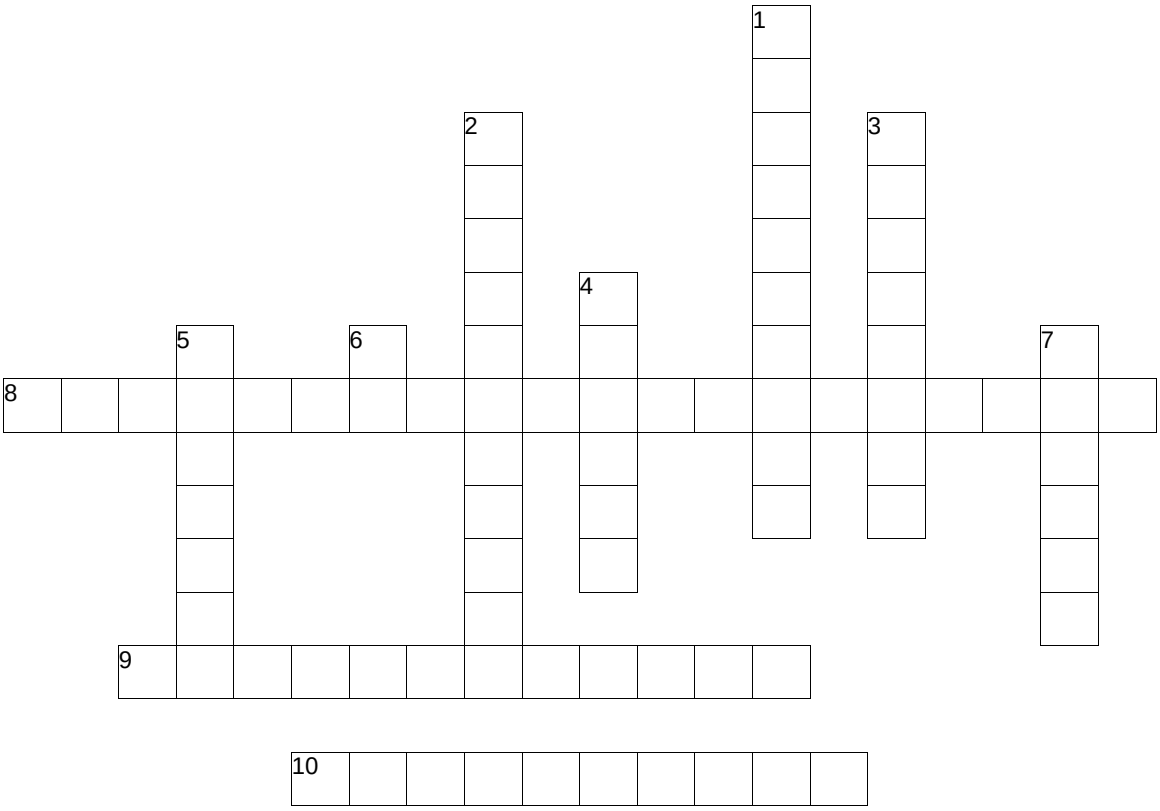
31. Chu's media contains ammonium.....

32. …….. *rhizogenes* induces hairy root, which has an application in phytoremediation and plant breeding

33. Embryo culture has an application in ..... enhancement

36. Chickpea contains.....embryos

Question 2



Across

8 Cobalt is not necessary in the tissue culture media, however when it is added, it has a protective role against ……..

9. In the callus growth kinetics, …… phase is characterized by the decrease in cell division and elongation rate

10. Double haploids are ..... in nature

Down

1. In the callus culture, depending on the position of explant and type of starting material reflects the ..... levels of growth regulator levels

2. Haploid microspores are.....

3. In an aseptic technique video shown, *Staurogyne rapens* is a famous..... plant

4. Microsporogenesis forms ..... after meiosis

5. In the orchid seed culture video, seeds were enclosed in a.....

6. Solid media turns liquid, when …… is not adjusted properly

7. …… deposition in the pollen stops sporophytic development, and thus no macroscopic structure forms in pollen development