

## SECTION A

[100 MARKS]

1. The main motivation behind doing research is to
  - a. study and explore knowledge.
  - b. start with predefined and clear-cut objectives.
  - c. get new ideas.
  - d. define clear objectives.
  - e. a and c
2. In order to begin research, one must
  - a. start with a number of clear solutions.
  - b. start with a number of predefined objectives.
  - c. have a well defined research method.
  - d. solve the research problem.
3. Research process for finding "answers" to "questions" should include
  - a. a framework of philosophies.
  - b. using valid and reliable methods and techniques.
  - c. an unbiased design.
  - d. all the above.
4. Doing research requires drafting a working outline, which is
  - a. Having predefined and clear-cut objective(s).
  - b. planning to get answers for what, why & where type of questions.
  - c. having a clear idea about the research problem solution.
  - d. a and c
  - e. a and b

5.

In an experimental design, the dependent variable is:

-  a. The one that is not manipulated and in which any changes are observed
- b. The one that is manipulated in order to observe any effects on the other
- c. A measure of the extent to which personal values affect research
- d. An ambiguous concept whose meaning depends on how it is defined

6.

Research objectives fall into a number of categories that include

- a. planning to get answers for what, why & where type of questions.
- b. considering the logic behind the methods we use in the context of the research.
- c. formulative, concept, and planning for research methods.
- d. exploratory, descriptive, diagnostic and experimentation research.

7.

A scientific research assumes that

- a. nature is chaotic
-  b. truth is absolute
- c. perception is based on sense
- d. behavior is random

8.

An inductive theory is one that:

- a. Involves testing an explicitly defined hypothesis
- b. Does not allow for findings to feed back into the stock of knowledge
- c. Uses quantitative methods whenever possible
-  d. Allows theory to emerge out of the data

9.

What is the epistemological position held by a positivist?

- a. There is no substitute for an in-depth, hermeneutic understanding of society
-  b. Scientific research should be based on value-free, empirical observations
- c. Events and discourses in the social world prevent us from having direct knowledge of the natural order
- d. It is important to remain optimistic about our research, even when things go wrong

10.

Which of the following is an ontological question?

- a. Should I use questionnaires or interviews in my project?
- b. What can (and should) be considered acceptable forms of knowledge?
- c. How long is it since I last visited the dentist?
-  d. Do social entities have an objective reality, external to social actors?

11.

Understanding the appropriate research method is important for researchers because,

-  a. appropriate method can be selected for investigation technique
- b. methods used should differ from others
- c. ensure that the technique chosen will never be repeated
- d. selection of method is difficult to predict

12.

What is a cross-sectional design?

- a. A study of one particular section of society, e.g. the middle classes
- b. One that is devised when the researcher is in a bad mood
-  c. The collection of data from more than one case at one moment in time
- d. A comparison of two or more variables over a long period of time

13. All of these may appear in a research proposal, but which one will ALWAYS appear?

a. Business objective.

 Research objective.

c. Creative objective.

d. Marketing objective.

14. Which word fills all the blanks in the following sentence

We talk about generating \_\_\_\_\_, testing \_\_\_\_\_, and rejecting \_\_\_\_\_.

a. objectives

 hypotheses

c. aims

d. questions

15. Which of the following is not a source of research ideas?

a. Practical issues

b. Past research

c. Theory

 All of the above ARE sources of research ideas

16. Good research proposals will always:

a. provide respondent names and addresses.

b. consider all possible research that had previously been done on the topic.

c. focus on reporting predetermined result

d. focus on the UTP style.

17. Which proposal section is intended to describe the purpose with a full statement of the research question?

- a. References.
- b. Literature review.
- c. Methodology.

 Introduction

18. The proposal's literature review is important because:

- a. It shows that you are knowledgeable about the literature that relates to your research topic
- b. It looks authoritative.
- c. The supervisor insists upon it.
- d. It is expected by the university.

19.

Projects do go wrong. In one case a student was indecisive and collected anything, just in case it came in useful: web sites, photocopies, brochures. The questionnaire even included irrelevant questions, just in case the information could be useful. Which ONE of the following would have been realistic and would have helped the most with this problem?

- a. Regular progress reports to the supervisor.
- b. Being less ambitious.
- c. Using SPSS.
- d. Setting a clear objective.
- e. Using a Gantt chart.

20.

Which of the following steps is likely to help you avoid accidental plagiarism?

- a. Cut and paste accurately from published works.
- b. Make superficial changes to the words used in published papers
- c. Make short bullet point notes in your own words
- d. a and b

21. What is the defense of a research proposal?
- Checking a research proposal for plagiarism in TurnItIn..
  - The documents and forms in the research proposal.
  - Your dissertation.
  - A written document and a presentation made by you.
22. What do you need to be able to provide in order for your research to pass the 'so what?' test?
- Reasons why the research is important
  - Implications of answering the research question
  - Proof that no-one has ever conducted a similar study
-  a and b
23. \_\_\_\_\_ tend to be generally expressed; a \_\_\_\_\_ is a specific formulation about what we will find.
- Hypotheses; research question
  - Research questions; hypothesis
  - Null hypotheses; research question
  - None of the above
24. Which of these are reasons why it is so important to get your research question right?
- The research question articulates the gap that you have found in the literature
  - The research question will guide the design of the study
  - The research question will inform the content of your discussion section
-  All of the above
25. What is a peer review?
- Evaluation of work done by one's superiors.
  - Evaluation of work done by those having similar competence.
  - Evaluation of work done by one's subordinates.
  - A show at the end of a peer.

26. The purpose of a literature review is to:
- Use the literature to identify present knowledge and what is unknown
  - Assist in defining the problem and operational definition
  - Identify strengths and weaknesses of previous studies
  - All of the above
27. The statement of purpose in a research study should:
- Identify the design of the study
  - Identify the intent or objective of the study
  - Specify the type of people to be used in the study
  - Describe the study
28. When each member of a population has an equally likely chance of being selected, this is called:
- A nonrandom sampling method
  - A quota sample
  - A snowball sample
  - An equal probability selection method
29. If we took the 500 people attending a school in New York City, divided them by gender, and then took a random sample of the males and a random sampling of the females, the variable on which we would divide the population is called the
- Independent variable
  - Dependent variable
  - Stratification variable
  - Sampling variable

30. Which of the following techniques yields a simple random sample?
- Choosing volunteers from an introductory psychology class to participate
  - Listing the individuals by ethnic group and choosing a proportion from within each ethnic group at random.
-   c Numbering all the elements of a sampling frame and then using a random number table to pick cases from the table.
- Randomly selecting schools, and then sampling everyone within the school.
31. Which of the following is NOT true about stratified random sampling?
- It involves a random selection process from identified subgroups
-   b Proportions of groups in the sample must always match their population proportions
- Disproportional stratified random sampling is especially helpful for getting large enough subgroup samples when subgroup comparisons are to be done
  - Proportional stratified random sampling yields a representative sample
32. People who are available, volunteer, or can be easily recruited are used in the sampling method called \_\_\_\_\_.
- Simple random sampling
  - Cluster sampling
  - Systematic sampling
-   d Convenience sampling
33. Which of the following will give a more "accurate" representation of the population from which a sample has been taken?
- A large sample based on the convenience sampling technique
  - A small sample based on simple random sampling
-   c A large sample based on simple random sampling
- A small cluster sample

34. The type of sampling in which each member of the population selected for the sample is returned to the population before the next member is selected is called
- Sampling without replacement
  -  Sampling with replacement
  - Simple random sampling
  - Systematic sampling
35. A number calculated with complete population data and quantifies a characteristic of the population is called \_\_\_\_\_
- A datum
  - A statistic
  -  A parameter
  - A population
36. Determining the sample interval (represented by  $k$ ), randomly selecting a number between 1 and  $k$ , and including each  $k$ th element in your sample are the steps for which form of sampling?
- Simple Random Sampling
  -  Stratified Random Sampling
  -  Systematic Sampling
  - Cluster sampling
37. Which of the following sampling methods is the best way to select a group of people for a study if you are interested in making statements about the larger population?
- Convenience sampling
  -  Quota sampling
  - Purposive sampling
  -  Random sampling

For questions 38 – 44, state the most suitable method of data collection that you would use to collect data for each study.

A. experiment

B. observational study

C. mail survey

D. focus group survey

38. A study on the socio economic status (income level, expenditure level, etc.) of 5,000 people living within 500 kilometers of your home. This study will be conducted by you alone. C
39. A study on the effectiveness of a new test drug in lowering blood pressure. Two groups of patients were selected, one group was given the new drug and the other a placebo. A
40. A cohort study of selected individuals over time to see who developed diabetes over the study period. B
41. Collecting data on customer satisfaction with the service provided by a major airline. Several frequent flyer passengers were called in to give their views. D
42. Collecting data on the potential marketability of a brand of shampoo by interviewing a group of expert market researchers. D
43. Collecting data on patient health information in a pre-specified hospital who were admitted for dengue fever between Jan 2015 and June 2015. B
44. Reading of prescription of medicines exhibited in a pharmacy. B

Questions 45 and 46 are based on the information below:

Period in 2014	Sales (in RM '000)
1st Qtr	8,400
2nd Qtr	3,600
3rd Qtr	1,200
4th Qtr	1,200

45. What is the most appropriate way to present above information?
- a. Plotted graph
  - b. Pie Chart
  - c. Line Graph
  - d. None of above
46. What conclusion can be drawn from the data in the given table for the year 2014?
- a. Sales are improving over time
  - b. Sales are deteriorating over time
  - c. Sales are constant over time
  - d. None of the above

For questions 47 – 49, state the most suitable statistical techniques that you would use to analyze for each case.

- A. correlation test
- C. independent t-test

- B. multiple regression
- D. Analysis of variance (ANOVA)

47. Suggest the test required for understanding the association between two metric variables. *A*
48. We want to know whether a set of independent variables have impact on a dependent variable. *B*
49. We want to measure a relationship between a metric variable and non-metric variable. The non-metric variable consists of four categories: *D*
50. What is a simple definition of a project?
  - a. Involve cost and time
  - b. Has a clear and specific objective field work
  - c. Infinity and unbound
  - d. Big task broken down into smaller tasks
51. The following are project management tools, EXCEPT
  - a. Drill down
  - b. Rules and regulations
  - c. Risk analysis
  - d. Gantt charts

52. The following are potential time wasters, EXCEPT
- Disorganisation
  - Guest speakers
  - Displacement
  - Perfection
53. Research philosophies refer to
- approaches and the discipline.
  - correct procedures in the discipline.
  - ideas to discover.
  - objectives to consider in the research process.
54. The following are possible constraints of a project, EXCEPT
- Data not readily available
  - Difficult to have a meeting with supervisor
  - Not enough money to buy materials
  - Equipment breakdown
55. Which management tool is suitable for establishing linkages between research activities?
- Gantt charts
  - Drill down
  - Risk analysis
  - Mind map
56. Which of the following constitutes source of risk in research?
- Access to library facilities.
  - Discover that someone has already done the research.
  - Available time to complete the study.
  - Availability of necessary equipment to conduct the research.

57. Gantt charts are useful tools for analyzing and planning more complex projects. Gantt charts \_\_\_\_\_
- will tell you when to meet your supervisor
  - allow you to collect data correctly
  - allow you to plan the allocation of resources needed to complete the project
  - will tell you which equipment is broken
58. Good time management leads to the following, EXCEPT
- help in prioritizing the work
  - increase productivity
  - expected experimental results
  - reduce stress
59. In order to complete your research timely, you...
- should not take breaks from work for recreational activities.
  - finish all experiments required for the research before data analysis and results writing.
  - strictly follow a 9 to 5 work schedule.
  - None of the above.
60. When having a meeting with the supervisor, a student should...
- discuss results and interpretations.
  - propose new research directions based on results, if needed.
  - highlight obstacles in conducting research.
  - All of the above.
61. You are studying the effect of drinking carbonated beverage on pregnant women and their babies. The research only covers Coca Cola and Pepsi. This defines the \_\_\_\_\_
- scope of the study.
  - methodology of the study.
  - conclusion of the study.
  - risk of the study.

62. In the course of research, which of the following is NOT a student's responsibility:
- arrange research funding.
  - keep an up-to-date research log book.
  - conduct original investigations.
  - identify and learn necessary techniques.
63. Project objectives should conform to the SMART rule; where 'S' stands for:
- social.
  - specific.
  - standard.
  - scope.
64. What are the two main causes of incidents in the workplace?
- Unsafe acts and unsafe people
  - Unsafe people and unsafe machines
  - Unsafe conditions and unsafe machines
  - Unsafe acts and unsafe conditions
65. Choose the CORRECT statement about hazard and risk
- Hazard is the uncontrolled harm that results from risks.
  - Hazard reflects the probability of harm and risk is the outcome.
  - Hazard causes harm if not controlled and risk is the probability of the outcome.
  - Hazard causes serious harm to life and risk is the outcome of that hazard.

66. Which analysis method is the most effective at determining potential problems in experimental activities?
- Preliminary Hazard Analysis
  - Job Safety Analysis
  - Fault Tree Analysis
  - Failure Mode Effect Analysis
67. Which of the following is a step in job safety analysis?
- Define the steps or tasks to do the job.
  - Define the hazards associated with each task.
  - Make recommendations to minimize or eliminate the hazard.
  - All of the above
68. A corrosive chemical is
- able to kill living things
  - able to burn skin
  - unstable in the presence of water
  - able to release toxic fumes
69. A hazard analysis can be used to evaluate a potential hazard; what other information should be considered?
- Injury reports
  - Statistical data
  - Risk assessment
  - Fatality investigations
70. In the event of a fire, where do heat and smoke go?
- To the lowest point in the room
  - To the middle point of the room
  - To the highest point of the room
  - To the coldest point of the room

71. Which of the following are the primary causes of falls?

- i. A failure of anti-fatigue mat
  - ii. A design flaw in the walking surface
  - iii. A poorly fitted safety sign
  - iv. An individual's impaired physical condition
- 
- b. I, and III
  - c. II, and IV
  - d. III and IV
  - e. I and II

72. Which of the following procedures of firefighting is INCORRECT?

- a. Walk away as soon as the fire is out
- (b) For a relatively big fire, use several extinguishers at the same time
- c. Approach fire from upwind
- d. Aim nozzle at the base of flame

73. Which one of the following actions is IMPORTANT to do before giving first aid?

- a. Ensure victim is breathing
- (b) Check for danger
- c. Ensure victim gives permission
- d. Tilt victims head before giving breaths

74. What is the function of ergonomic science?

- (a) It puts people first, taking into account their capabilities and limitations
- b. It is a study on non-human contact technology
- c. It changes process technology, product design, market drive.
- d. It fits the people to the working environment and tools

75. Which of the following statements is NOT TRUE about electrical hazard?
- The severity of an electrical shock depends on the magnitude of the current flow through the human body
  - The severity of an electrical shock depends on the path of the current flow through the human body
  - The severity of an electrical shock varies somewhat with the age, sex and physical condition of the victim
  - The severity of an electrical shock depends on the value of the applied voltage
76. Based on Health, Safety & Environment (HSE) requirements, which of the statement below is the MOST correct?
- It is important to be aware of risk and hazards
  - Safety must be a priority at all times
  - Safety covers all aspects of our daily life
  - It is important to have awareness of safety
77. MOST occupational injuries are caused by
- unsafe conditions.
  - unsafe acts/practices.
  - uncomfortable workplace.
  - ineffective supervision.
78. Which of the following statements describe the best position in placing a computer monitor?
- A user has to lean forward to clearly see the text
  - A user can see overhead lights reflected on the screen
  - A user can clearly read the text without twisting his neck
  - A user can clearly read the text by looking far upwards

79. The philosophy and guiding principles for occupational safety and health regulations stated that the
- protection of life and health at work is a workers' responsibilities
  - responsibilities to ensure safety and health at workplaces lies with those who create the risk and with those who work with the risk
  - responsibilities to ensure safety and health awareness at workplace workers lies with the employer
  - prevention of accidents at workplace is the responsibility of the health and safety department
80. Which of the following Personal Protective Equipment (PPE) are to protect against falling and/or accelerating objects?
- Hard hats, safety goggles, safety boots
  - Hard hats, face shields, safety boots
  - Hard hats, face shields, safety goggles
  -  Hard hats, face shields, safety goggles, safety boot
81. Intellectual Property (IP) may refer to the following, EXCEPT
- New Invention
  - Artistic Creation
  - Geographical Indication
  - New Ideas
82. For a product to be patented, it must comply to the following conditions, EXCEPT
- New
  - Invention
  - Ideas
  - Inventive Steps

83. The following are principles of responsible research EXCEPT
- Honesty
  - Integrity
  - Love
  - Respect
84. The common ethical issues arising from research includes, (EXCEPT)
- Authorship and author order
  - Anticipated results
  - Conflict of interest
  - Misrepresentation of results
  - Mistake in experiments
85. Authorship should not be granted solely based on the following, (EXCEPT)
- graduate supervision
  - approval of fund
  - family member
  - immediate superior
  - preparation of document
86. To avoid inadvertent plagiarism, the following steps would be useful, (EXCEPT)
- Careful in paraphrasing
  - Clearly indicate citations and quotations
  - Cite sources for ideas
  - Plea ignorance or innocent intentions
  - Redraw all figures and table
87. You may obtain protection under the Copyright Laws, for
- ideas
  - procedure
  - note
  - formula

88. Author order should be decided based on,
- alphabetical
  - authority
  - contribution
  - policy
  - seniority
89. The following may be penalized with academic misconduct EXCEPT
- Presenting the data in graphical forms for better readability
  - Borrowing ideas from others without proper acknowledgements
  - Copying passages from reference to be part of literature review
  - Dropping results that does not seems to fit the expectation
  - Presenting work that is completed elsewhere as own work
90. Research ethics committee of any institutions would be expected to be responsible for the following, (EXCEPT)
- Deliberate and decide on cases referred
  - Establish and promote ethics policy
  - Liable for unethical or misconduct of researcher
  - Propose and monitor training program
  - Review and approve application requiring ethical review
91. Research that involve human is expected to, (EXCEPT)
- present and obtain permission to proceed from research ethics committee
  - establish procedure to protect the privacy and safety of subject
  - obtain informed consent (in writing or verbal) from subject
  - pay compensation in lieu of hardship endured
  - submit compliance report to approving authority

92. The following steps are expected to be completed before a patent right is finally granted, EXCEPT

- a. novelty search
- b. patent specification
- c. patent agreement
- d. patent filing
- e. patent examination

93. To apply for a patent, an inventor must:

- a. File an application at a patent office which must comply with formal and technical requirements.
- b. Draft the full specification of the patent they seek, which cannot be later amended.
- c. Demonstrate that their invention works
- d. State the date on which the invention was first "reduced to practice".

94. An "international application" under the Patent Co-operation Treaty:

- a. is examined by a patent examiner at a designated office.
- b. is searched against by a single search conducted at a designated office.
- c. results in a single patent covering all the states for which protection is sought.
- d. is forwarded to the patent offices of all the states for which protection is sought for search and examination.

95. The patentability of biotechnological inventions is limited in which of the following ways?

- a. Patents relating to human genes cannot be patented.
-  b. Genetic sequences on their own cannot be patented.
-  c. Inventions that cause suffering to humans or animals cannot be patented.
- d. Patents that relate to medical treatment cannot be patented.

96. A patent will be invalid for lack of novelty if:

- a. Products falling within the claim were sold to the public before the priority date.
- b. The process claimed was carried on commercially before the priority date.
- c. A description of the product (in the case of a product claim) was published before the priority date.
-  d. A video describing how to make the product claimed was published on the internet prior to the priority date.

97. An invention claimed in a patent is obvious if:

- a. The skilled person could, without undue burden, have developed the claimed invention.
- b. Once the skilled person had been directed to come up with a solution to the problem solved by the invention, she would have found the claimed invention.
-  c. The skilled person, working from a particular piece of prior art and bearing in mind common general knowledge, would have identified a problem to be solved and in solving it found the claimed invention.
- d. The prior art contains a clear signpost to seek developments in the area of the invention.

98. You can infringe a patent by:

- a. Making a product for your own personal use.
- b. Making different products to the invention in order to research their technical effectiveness.
- c. Selling the main components of the product, together with instructions how to assemble it using commonly available fastening components such as nuts, bolts, cable-ties and so on.
- d. Publishing drawings of the product on your website.

99. Which of the following statements about the action for groundless threats is true?

- a. To be actionable, a threat must be in writing.
- b. It is OK to threaten manufacturers or importers.
- c. The threat is considered from the point of view of the skilled person receiving it.
- d. Only the person threatened may take action.

100. Intellectual Property Rights (IPR) protect the use of information and ideas that are of

- a. Ethical Value
- b. Moral value
- c. Social value
- d. Commercial value