

ESSAY TOPICS: Helpful Hints

This is the first in a series of tips to assist persons in the writing of essays as part of the Professional Review. The essay writing has proved to be the main obstacle towards successful Pr Eng registration. It is meant to give GUIDANCE only.

It is advisable for candidates to form discussion groups on the various topics in order to exchange ideas and discuss it with a mentor.

General Essay writing tips:

- (a) Read the question and make sure that you understand it
- (b) Structure your thoughts and the essay properly
- (c) Define concepts and explain your understanding thereof
- (d) Include methodology, budget, planning, and community involvement where applicable
- (e) Manage your time to ensure that you have sufficient time to address each aspect
- (f) Include examples from personal experience to relate to the subject and illustrate your understanding thereof
- (g) The average length of essays are 5 hand-written A4 pages.
- (h) Don't "waffle" - Be specific
- (i) Relax!

Below we give examples of aspects to consider in terms of the structure of the essays. Topics are sorted in terms of its focus

Professional Practice

4. Discuss the way in which the resources required for a design project or a construction contract should be organized and managed in order to ensure that technical objectives are met and that work is completed on time and within budget. Refer to your own experience where appropriate.

- (a) Define and quantify objectives clearly
- (b) State the best methodology vs the budget
- (c) Teamwork concept
- (d) Proper Planning in stages i.e Who,when, how and why
- (e) Review of each stage

Environmental Issues

8. How should the environmental impact of civil engineering projects be assessed and how can this be taken into account in the evaluation of the merits of such projects?

- (a) Legal procedures required
- (b) Environmental impact assessments
- (c) Impact on people, pollution
- (d) Sustainability and materials
- (e) Specifications and appropriate solutions
- (f) Monitoring
- (g) Suggested procedures for evaluation of the EIA in overall assessment of project viability

Socio-Political Issues

10. Discuss appropriate civil engineering solutions in the new South Africa.

- (a) Highlight the changes in SA since 1994 as it impacts on civil engineering
- (b) Definition of "appropriate solutions and –technology"
- (c) Labour based construction techniques (advantages/disadvantages)
- (d) Alternative materials
- (e) Cost effectiveness and life expectancy
- (f) Health and education
- (g) Ownership by community
- (h) Community responsibilities in terms of maintenance
- (i) Sustainable employment opportunities

11. The construction industry needs to present itself to the public very positively. Often reports of failures are the means by which the public is reminded of its activities. How should the situation be improved to enhance the image of the industry?

- (a) Current status of the image in the industry
- (b) Unity of the industry
- (c) Codes of practice and code of ethics
- (d) Compulsory registration
- (e) Fee structures and appointments
- (f) Status

13. There are currently several moves towards privatisation of public services. What are the merits of these, and how do you expect them to affect engineers who are employed in these services?

- (a) Why privatise?
- (b) Economic policy
- (c) Outsourcing vs privatisation
- (d) Fiscal restructuring

- (e) Economic and Social development
- (f) Private/public ownership
- (g) Growth/redistribution of employment
- (h) Asset restructuring programme
- (i) Business opportunities
- (j) Black empowerment
- (k) Loss of key technical/professional skills
- (l) Maintenance of efficient delivery
- (m) Labour Relations aspects – job losses

Contractual Matters

14. Claims and disputes are a normal part of construction projects. Discuss how claims and disputes should be managed in the interest of the overall project. The evaluation should be made taking different perspectives and interest of the involved parties into consideration.

- (a) Different forms of contract and particular conditions
- (b) The impact of the nature of the contract documents
- (c) The probable outcome of disputes to the parties
- (d) The effect of personalities in the process
- (e) What the contractor wishes to achieve during the completion of a project.
- (f) Alternative ways to mitigate the effect of claims & disputes
- (g) The value of communication between the parties

15. Discuss the difference between 'Quality Control ' and 'Quality Assurance'. Discuss the requirements for quality management by clients, designers and contractors, and their respective contributions to the success of a project.

- (a) Reflect an understanding of the concepts of quality assurance vs quality control
- (b) Define project quality management and explain how it is implemented
- (c) Illustrate how one process should be managed in such a way that quality of work done compliments the next process
- (d) Show an understanding of the factors impacting on quality clients, designers and contractors.

17. Risk is inherent in most civil engineering work. Discuss the ways in which such risks can affect the employer and the contractor, and how they can influence the form of contract and the contract price.

- (a) How various forms of contract affect risk
- (b) Insurance by owner and contractor
- (c) Risks in different types of construction e.g. buildings, bridges, roads, tunnels, deep excavations etc.

18. Describe the measures that may be built into contracts to ensure that Emerging Contractors get sufficient and relevant experience in contracting. Elaborate on the measures that may be built into the process to monitor that transfer of experience takes place thus growing the Emerging Contractor to independence.

(a) The term "emerging contractor"

(b) Display an understanding of the goals of Government with the various 'emerging contractor' programmes and refer to relevant government policies and publications.

(c) Illustrate experience/background in the contracting environment

(d) Understand the contractual environment: (Types of contracts and alternatives)

(e) Highlight difficulties faced by emerging contractors

(f) Should requirements be set to ensure emerging contractors move to become fully-fledged contractors?